



Charter Schools Institute
The State University of New York

BRONX PREPARATORY CHARTER SCHOOL

FINAL CHARTERED AGREEMENT
Sec. 2852(5) Submission to the Board of Regents

VOLUME 2 OF 3

REDACTED COPY

TAB

III

SCHOOL
DESIGN

Attachment III-12

Proposed Student Admission Policy

Requirements for Admission

The Bronx Preparatory Charter School is a nonsectarian public school for young men and women from grades 5-12. Admission to the 5th grade will be open each year to children residing in New York City who have successfully completed the 4th grade in a public or private elementary school. Limited numbers of children may also be admitted to the school in grades above the fifth grade if places are available.

Bronx Preparatory Charter School shall not discriminate against any student on the basis of ethnicity, national origin, gender, disability or any other ground that would be unlawful if done by a school. Admission shall not be limited on the basis of intellectual ability, measures of achievement or aptitude, athletic ability, disability, race, creed, gender, national origin, religion, or ancestry district. Eligible applicants must be below 21 years of age and must not already possess a high school diploma.

Enrollment Procedures

Bronx Preparatory Charter School will admit each eligible student who submits a timely application, unless the number of applications exceeds the capacity of the grade level or school building. The school will admit no more than 25 students per class, and in most cases the school will have two classes of students per grade level.

The application process will occur in two stages. As soon as is possible in the spring, invitations to 4-6 open houses at the school will be widely distributed to parents and students in the Bronx. The school will vigorously get the invitations to parents through all available routes, including public elementary schools, community organizations of all kinds, direct mailings, and flyers posted in the community. These mechanisms will help ensure that the information gets circulated widely in the community of eligible students. At the open houses three things will take place. (1) Students and their parents will hear a presentation on the school. The directors will describe the school's academic program, the required extended day and year, and norms for student behavior and community life. It is very important that the student and parent understand the values of the school and its expectations before making the decision to enroll. (2) At the end of the presentation, students who are interested in pursuing enrollment in the school will be asked to complete a simple application card, which will request basic biographical and contact information for the student and his or her parent/guardian. (3) As students turn in their cards at the end of the open house they will be scheduled on the spot for a small-group meeting at the school with one or more of the school's directors. (In years after 2000, students will also be invited to spend two hours at the school during either a real or a simulated school day, to give them further help in visualizing whether this school is right for them.)

Each of the smaller meetings will be attended by no more than 5 students and their parents or guardians. All will have already heard the group presentation, and this second meeting will enable them to have their specific questions answered. If, after the small group meeting, the student and his or her parent/guardian elect to enroll the young person in the school, their names will be entered into the enrollment pool. *All of these activities are required steps, but none of them will be used to screen students for admission. All students who complete these steps and elect to continue with the enrollment process will be admitted to the school, unless applicants exceed school capacity at their grade level.*

Process if the Number of Applications Exceeds School Capacity

It is expected that the number of timely applications to the school will exceed capacity at every grade level for which seats are available. If this occurs, first priority will be given to students returning to the school. Second priority will be given to siblings of pupils already enrolled in the charter school. The remaining offers of admission will be made via a lottery for all students residing in New York City. A

separate drawing will be made for each grade level, with children's names drawn at random. Students residing in school districts outside of New York City will only be admitted if there is insufficient enrollment of children from New York City. To ensure honesty and transparency in the lottery process, the lottery will either be held as a public event or will be attended and audited by a dispassionate, outside organization approved by the Charter Schools Institute.

Procedures for Voluntary Student Withdrawal from the School

Bronx Preparatory Charter School is a school of choice, and it is critical that all students and their parents examine the school closely before deciding to enroll. We hope that the information gathering/application process described above will help ensure that the students and their families make good choices. Further, when new students arrive on campus the faculty, staff and other students will work very hard to help them adjust to their new school community and its expectations.

There may arise circumstances, however, in which a student becomes unhappy at Bronx Preparatory Charter School and wishes to transfer to a different school. If so, the student and his or her guardian will be strongly encouraged to meet with the school director to discuss the reasons for the desired withdrawal, and to seek solutions to the problem within the Bronx Preparatory community. The primary purpose of the meeting will be to seek a resolution to the problem and enable the student to remain in the school. A second purpose will be for the school to receive feedback on its educational practices from unsatisfied families. The school will keep careful track of such feedback and look for patterns that could present a case for an alteration of school practices. If participants in this meeting determine that Bronx Prep is unable to satisfy the student and his or her parent internally, or if the student is simply moving away, the school directors will make every effort to help the student find a school that better serves the family's needs or desires. Once the student has secured admission to a new school and has matriculated, Bronx Prep will transfer the student's permanent records and take the student off of the Bronx Preparatory Charter School roster.

Outreach Effort

Bronx Prep will make an extensive outreach effort to inform the families in the South Bronx neighborhoods about the school. We hope to attract a wide range of the communities' school-age children, with their diverse cultural and academic backgrounds. Because we will select students by lottery, the school will be open equally to all students.

We will make a conscious and thorough effort to ensure that information about the school gets wide distribution in the South Bronx community. We will rely primarily on the following methods to get the word out to families:

- Guidance counselors in local public elementary schools (many are actively seeking middle school options for their students)
- A network of not-for-profit organizations, including members of the Hispanic Federation of New York
- Direct mail to families, including to the many thousands of families who applied for scholarships but were not accepted in the School Choice Scholarships Foundation's lottery in 1997 and 1998
- Religious and non-religious organizations affiliated with South Bronx Churches
- Flyers/posters in local businesses and community organizations

Attachment III-16

Plan for Phasing in New Enrollment

In Year 1 we would begin with 100 students, two classes of 25 fifth graders and two classes of 25 sixth graders. As a general rule, each year after the first we would accept 50 new fifth graders and a small number of students in higher grades if necessary to ensure that each grade continues to have 50 students.

In Year 4 the school will acquire a second building for the senior academy, keeping the first space, which is affordable and very well suited to the needs of a middle academy. We also believe it is an appropriate rite of passage for students to move onto the senior academy building. Some resources will be shared by the two buildings, for example the cafeteria and a science laboratory. The sharing of these facilities will make the middle academy a very comfortable site for 200 students.

By the school's seventh year, we would have 200 students in the middle academy (grades 5-8) and 200 students in the senior academy (grades 9-12). As we do not expect significant attrition, the number of new students admitted above grade 5 in a typical year would be minimal. Admission for spaces in the higher grades would take place through the same process that was described in Attachment III-12.

The following chart represents the *total enrollment* of the school in each of its growth years.

Enrollment at Bronx Preparatory Charter School

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Grade 5	50	50	50	50	50	50	50
Grade 6	50	50	50	50	50	50	50
Grade 7		50	50	50	50	50	50
Grade 8			50	50	50	50	50
Grade 9				50	50	50	50
Grade 10					50	50	50
Grade 11						50	50
Grade 12							50

Attachment III-17
School Calendar

School Calendar for Sample year 2000-2001
 Unless noted otherwise, students will attend school Monday-Friday
 8:00 a.m. – 4:30 p.m.

Month	Notes	Days of Instruction
August	Students begin August 22	8
September	No school 9/4 for Labor Day	20
October	No holiday for Columbus Day	22
November	No school 11/23 and 11/24 for Thanksgiving	20
December	Holiday break 12/23 – 1/1	16
January	Classes resume 1/2 ; no school 1/15 for Martin Luther King Day	20
February	No school 2/19 for Presidents' Day	19
March	Vacation 3/12 – 3/16	17
April	No school 4/12 for Good Friday	20
May	Vacation 5/28 – 6/1 (includes Memorial Day)	19
June	Classes resume 6/4	20
July	No school 7/4 for Independence Day; last day of classes 7/13	9
	Total	210

Attachment III-17-c*Periods of Instruction - Sample Schedule for Grade 5 or Grade 6 Student*

	Monday	Tuesday	Wednesday	Thursday	Friday
8:00-8:10	All-School Meeting	All-School Meeting	All-School Meeting	All-School Meeting	All-School Meeting
8:15-9:10	Spanish	Spanish	All-School Meeting (cont.) ¹	Spanish	Spanish
9:15-10:10	Reading & Literature / Philosophy ²	Reading & Literature / Philosophy	Reading & Literature / Philosophy	Reading & Literature / Philosophy	<i>Skills Drill & Individual Instruction</i> ³
10:15-11:10	Composition, Grammar & Spelling	<i>Skills Drill & Individual Instruction</i>	Composition, Grammar & Spelling	Composition, Grammar & Spelling	Composition, Grammar & Spelling
11:15-12:10	Science	Science	Science	<i>Skills Drill & Individual Instruction</i>	Science
12:15-12:45	Lunch	Lunch	Lunch	Lunch	Lunch
12:50-1:45	Math	Math	Math	Math	Math
1:50-2:45	Social Studies	Social Studies	<i>Skills Drill & Individual Instruction</i>	Social Studies	Social Studies
2:45-4:30	Extended Day ⁴	Extended Day	Extended Day	Faculty Meeting ⁵	Extended Day

Computers will be used across the curriculum, as they give support to student learning in all subjects. Teachers will be expected to integrate regular computer projects into their lesson plans.

¹ The weekly longer all-school meeting will serve a variety of purposes. About twice a month an adult with an interesting career will come talk with students about what they do and how they prepared for it. At other meetings we will discuss issues of importance in the school and broader community, listen to student presentations, and hear from speakers on various topics.

² The two language arts periods will be held consecutively (blocked) most days to allow for extended attention and integration of reading and writing. Students will have the same teacher both periods.

³ Skills Drill/individual instruction – To be used for all kinds of remedial support. Some periods students will use computerized remedial drill in reading and math skills, in which students will use individualized programs, overseen by teachers and teachers' aides. The reading specialist and tutors will use these periods for individual instruction.

⁴ Extended Day – This time is mandatory for all students and is integral to the school's academic program. It will be used for music, drama, athletics, the visual arts, and other project-based learning. If a student is in danger of failing a class, some extended-day time may have to be used for extra tutorial support and study.

⁵ During faculty meeting students will have some extended-day options within the school (those not run by faculty members). Students may also use this time to fulfill their community service requirement.

Attachment III-18
Discipline Code

**CODE OF CIVILITY:
A FRAMEWORK FOR LIVING AND LEARNING
AT BRONX PREPARATORY CHARTER SCHOOL**

The Bronx Preparatory Charter School seeks to graduate men and women who (1) think critically and creatively; (2) have attained strong skills in mathematics, language, literature, history, science, technology, and the arts; and (3) are committed to a lifetime of learning and civic involvement. The school will empower students through high intellectual and conduct standards- building on their promise, as they prepare for college, career, and citizenship.

Discipline Policy at Bronx Prep

It is the right of every student to attend a school that is free from harm and danger. It is also the right of every student to attend a school that enables maximum learning. As the following discipline policy suggests, the faculty at Bronx Prep will work vigorously to defend those rights. The faculty also believes strongly in students' right to fairness and equality in the application and explanation of rules. While these are overall school rules, individual faculty members may also impose classroom specific expectations of behavior.

Bronx Preparatory Charter School is absolutely committed to a safe and orderly learning community. School rules exist to create and preserve an environment in which children are free to learn and develop. Behaviors that pose an immediate danger to the school or to members of the school community will be dealt with on a zero-tolerance basis. Below are the consequences that the students will experience if they engage in behaviors that are harmful to the school community.

Consequences of Prohibited Behaviors

Expulsion	Out-of-School Suspension	In-School Suspension	Discipline Points
<ul style="list-style-type: none"> • Use or possession of a weapon • Sale or transfer of drugs or alcohol • Assault • Commission of a felony 	<ul style="list-style-type: none"> • Disrespect toward faculty or staff • Use or possession of drugs or alcohol • Theft or destruction of property • Setting of false alarms • Sexual or racial harassment • Violent or abusive language • Smoking • Cheating or plagiarism • Gambling 	<ul style="list-style-type: none"> • Cutting class or school events • Swearing and inappropriate language 	<ul style="list-style-type: none"> • Tardiness • Unkempt uniform • Improper attire • Use of inappropriate electronic equipment • Gum chewing • Eating or drinking in class • Use of makeup • Loitering

DEFINITIONS OF CONSEQUENCES:

Expulsion

An expulsion will result in the immediate and permanent removal from school of the student in question. It occurs in response to conduct that poses an immediate danger to the health and welfare of the students and/or faculty and may be accompanied by legal action. Because this is a very severe consequence, the Executive Director and Principal will make this decision only after consultation with the Board of Trustees. Students who engage in behaviors punishable by expulsion will be informed of their misconduct and asked to leave the class or activity in which they are participating immediately. Students should report to the office where they will be given the opportunity to share their version of the events. Parents will be contacted and asked to pick up the child from school. Under special circumstances, the parent may request that the child be released to travel home with a family member or friend.

Out-of-School-Suspension

An out-of-School suspension will result in the immediate removal from school of the student in question. Suspension will begin at the moment of the infraction; parents will be notified and asked to retrieve the child from the school immediately (per process described above). The suspension will continue until the school, the student and his or her parent (s) or guardian(s) meet to agree upon appropriate behavioral conditions for the student's return to the community. This meeting will take place as quickly as possible after the student's suspension from school. In the case of very serious infractions, suspensions may be accompanied by other sanctions.

In-School Suspension

An in-school suspension will result in the loss of all social privileges for the student in question. A student who receives an in-school suspension will remain in the building and will attend all academic core classes but will be isolated from classmates and peers outside of class time. A parent or guardian will be required to meet with the administration in person or by phone.

Discipline Points

Some infractions of the disciplinary code will result in students receiving discipline points. Those students who accumulate 3 discipline points will return to school or to the Dr. Martin Luther King Health Clinic on a designated Saturday to do clean up duty. (The school will have a relationship with this clinic for the provision of health services and some health education activities). Teachers and administrators have discretion in the number of points they give for any infraction.

Behavioral Contracts

School staff may design written agreements with students subject to punishment under this code to identify target behaviors, define expectations, and describe consequences, provided that the affected student and his or her parent(s) or guardian(s) are informed that the decision to enter into such a contract is voluntary.

***For information on appeals and student's rights of due process, please refer to Student Rights section.**

EXPLANATION OF INFRACTIONS

Use or Possession of Weapon (s)

Bronx Preparatory Charter School will not hesitate to follow through on its right to expel students who are found on the school premises or at school-sponsored or school-related events, in possession of a dangerous weapon. A weapon shall be defined as anything that can be used to inflict or threaten bodily harm and shall include, but not be limited to, a gun, knife, pipe, tool, stick, or needle. The school faculty also has the right to confiscate any item that a staff member believes is liable or likely to be used as a weapon.

*The federal Gun-Free Schools Act of 1994, which applies to public schools, states that a student who is determined to have brought a weapon to school must be suspended for at least one calendar year. This suspension requirement may be modified by school administrators, however, on a case-by-case basis. Weapon as used in this law means a "firearm," as defined by 18 USC §8921, and includes firearms and explosives. New York Education Law §3214(3)(d) effectuates this federal law.

Transfer or Sale of Drugs, Alcohol, or Controlled Substances

The sale or transfer of drugs constitutes a violation of state and federal law and is, moreover, an action that endangers the health and safety of other community members. Bronx Preparatory Charter School may therefore respond to the sale or transfer of drugs on its campus (or at any school related or sponsored event) with immediate expulsion of the offending party.

Assault

An assault is an act of physical violence against another person. A student who assaults another member of the school community will be subject to immediate suspension and in extreme cases expulsion. The administration reserves the right to address an act of intended assault in a similar manner.

Commission of Felony

Any student who commits a criminal act – for example, larceny – at Bronx Prep or at a Bronx Prep event may be subject to expulsion.

Disrespect Towards Faculty or Staff

Bronx Prep will not tolerate disrespectful behavior towards its faculty or staff under any circumstances. Disrespectful students may be suspended outside of school and may also be assigned additional service to the school community.

Use or Possession of Drugs, Alcohol or Controlled Substances

The use or possession of drugs or alcohol on campus or at a school related function is harmful to a young person's health and constitutes a violation of the law. Such use or possession will result in an automatic suspension from school.

Theft or Destruction of Property

The destruction or defacement of school or private property and the theft of school or private property jeopardize the integrity of the school community and constitute violations of state law. Any student who deliberately defaces or damages school or private property, or who steals school or private property, may be subject to suspension. This includes entry into the school's computer networks as well as any improper installation or use of software on a school computer. Students who destroy property will additionally be held responsible for restoring that property to its original condition and for performing service to the school outside of regular school hours.

False Alarms

The deliberate and unlawful triggering of a fire alarm, the expression of a bomb threat, or any similar violation of community safety and trust will result in immediate suspension. Second offenses will result in further penalties including, but not limited to, expulsion. Furthermore, as these constitute criminal acts, Bronx Prep may file a report with the appropriate authorities.

Sexual or Racial Harassment

Any subjection of another individual to unwanted sexual attention on school grounds, or any attempt to verbally or physically coerce another individual into sexual activity, constitutes sexual harassment and will result in suspension from Bronx Prep. Any act of harassment or intimidation, be it verbal or physical, which singles out another person on the basis of racial or ethnic background will also result in suspension from Bronx Prep. The accessing of offensive or obscene material via the school's computer network will be interpreted as a form of harassment and will result in suspension.

Abusive or Aggressive Language

Abusive or aggressive language has no place in an institution of learning and self-improvement. Any student whose language constitutes an act of aggression, intimidation, or harassment will receive discipline points and may be subject to suspension.

Cheating and Plagiarism

Cheating on schoolwork or representing the work of another as one's own represents a breach of community integrity and trust. Bronx Prep defends the right of its teachers to fail any student who engages in such activity, even on a single occasion. A teacher may also bring a formal complaint against a student who commits an act of plagiarism or cheating, such complaints to potentially result in suspension from school.

Gambling

Gambling, wagering and games of chance are, in most cases illegal, and are always inappropriate in a school setting. Any student engaging in such activities may be subject to suspension.

Violation of Closed Campus Policy

For the safety and welfare of its students, Bronx Prep has a closed campus. Students should not go beyond the specified limits of the school grounds without an approved chaperone or the expressed permission of a faculty member. Violation of this policy may result in suspension. Bronx Prep shares the building with Our Lady of Victory Church. Every student should respect the property and privacy of Our Lady of Victory Church.

Cutting Class or Events

Students are required to attend all scheduled classes and events. Students who cut classes or events will be given in-school suspension. **Also, since regular and punctual attendance is a vital part of community membership, no student can receive credit in a class from which he or she is absent more than ten days per year, except in the case of serious illness (with a doctor's note), religious observance, or the death of a family member. A vacation does not constitute a valid reason for absence from school.**

Tardiness

Lateness to school or school events is a form of selfishness and disrespect that also undercuts achievement. A student who arrives late to school, to class or to a school event will be given at least one negative point on his or her attendance record. Once the student has accumulated 3 discipline points (either for tardiness or any other infraction) he or she will have to do school-clean-up on a designated

Saturday. The student will also be required to apologize and gain the community's forgiveness at the next morning's meeting.

Searches of Students' Property

In its effort to preserve and protect the rights and safety of all its students, Bronx Prep reserves the right to conduct searches of students and its property. Such searches shall be conducted in cases involving suspected violations of laws or school rules. Searches will be conducted so as to respect the privacy and interests of students to the fullest degree possible, but will balance such concerns with its predominant interest in maintaining student safety and discipline. Searches will be conducted only when supported by reasonable suspicion that a student is in possession of one or several of the following: illegal drugs, stolen property, alcohol, tobacco, weapon(s).

In cases when search is deemed necessary and prudent, the student(s) in question will be asked to empty the contents of pockets, purses, book bags etc. Such request will take place in privacy whenever possible and will be conducted in the presence of a school administrator and at least one other staff member. Such searches will pursue specific items about which there is suspicion. The parent(s) or guardian(s) of a searched student will be notified as soon as possible to inform them that a search is about to or has just occurred. Should a student refuse to cooperate with a search request, the school will confiscate the property in question when there is reasonable suspicion that illegal drugs, stolen property, alcohol, tobacco, or weapon(s) are present.

RIGHTS OF STUDENTS

It is the right of every student to attend a school that is free from harm and danger and that enables maximum learning. Students also have the right to fairness and equality in the application and explanation of rules.

Right to Fair, Unbiased and Just Treatment

All students have the right to expect fair and unbiased treatment from their school. If a student at Bronx Prep and his/her parent(s) or guardian believe that any sanction is unfair or unclear, a conference may be scheduled to discuss the matter at the request of the parent(s) or guardian.

Right to be Appraised of and Instructed in Appropriate Behavior

Students have the right to expect that rules of conduct at their school be clearly explained to them; they also have the right to expect the school to instruct them in proper behavior. A student or parent may request a clarification of a school rule or policy at any time by contacting the Executive Director or the Principal.

Right to Due Process

All students have the right to due process within their school. For students at Bronx Prep this includes the right to be notified of any charges against them that may result in disciplinary action; the right to an explanation of evidence against them in the case of disciplinary action; and the opportunity to explain their behavior to the Executive Director.

Right to Appeal

Students and/or their parents have the right to appeal suspensions to the Executive Director of Bronx Preparatory Charter School, next to the Board of Trustees, and finally to SUNY Charter Schools Institute

Attachment III-19
School Uniform Policy

The uniform worn by Bronx Preparatory Charter School students is a daily reminder of the fact that our school is a community with high standards and seriousness of purpose. A uniform also symbolizes equality, and enables students to distinguish themselves through hard work, accomplishment and character, rather than through fashion.

With the few exceptions described below, students will be required to wear their school uniform at all times when on campus. Students must also wear their uniforms to and from school. While we have not settled on the precise details of the uniform, as we have yet to compare prices and selection at various uniform companies, we do know that the attire will be a true uniform, as opposed to a dress code.

The following uniform used by a school in Brooklyn is similar to the style we will select. All students will wear classic white collared shirts, with an option of a Peter Pan-style collar for the girls. Girls will wear plaid, pleated skirts that fall no shorter than the top of their knee and a matching plaid tie/scarf hybrid around their neck. Boys will wear dark pants and a tie that matches either the pants or the girls' skirts. For cold weather all students will have two choices of cardigan sweaters with the Bronx Prep crest. Once students reach the senior academy, they will also have the option of a blazer with the school crest. Shoes must be brown or black dress shoes loafer-style or lace-up, but never open-toed. If shoes have laces, they must be tied.

For physical education we will design shorts, t-shirts, sweatpants and sweatshirts with the school logo. Students will be encouraged to wear this athletic school gear during their leisure time at home and around town, as it is wonderful way to spread word about the school. Sneakers are acceptable footwear for physical education.

For some field trips and other special activities students will be welcome to dress down, as is appropriate for the activity. Students will be given specific dress guidelines for these activities.

At no time will students be permitted to wear elaborate jewelry, hats or caps, or jackets or overcoats (except while outdoors). Middle academy students will not be permitted to wear make-up. Senior academy girls will be permitted to wear modest, tasteful makeup.

No student will be admitted to the school until his or her attire meets the requirements listed above.

If students carry beepers, cell phones or walkmen to school, they must keep them in their book bags and *turned off* while at school. Students who fail to follow this guideline will have these items confiscated for a period of days.

Note: Charter school and private school operators in low-income neighborhoods report that economically disadvantaged families generally find uniforms to relieve a financial burden, as they eliminate the need to supply their children with a full wardrobe of school clothes. They also reduce the stress level associated with teens' desires to keep up with expensive fashion trends. However, in cases where families are destitute and truly can not afford the uniform, the school will consider using budgeted "emergency" funds and rebates from school uniform companies to help parents cover the costs of the uniforms on a case-by-case basis. We will ensure that no student fails to matriculate in the school for want of funds for the required attire.

Attachment III-20

Food Services

For students' breakfasts and lunches, the school will likely contract with a private food service management company on a fee basis. The school will select a food services provider through a bidding process, and that provider will be responsible for the preparation and service of the school breakfast and lunch. The proposed school facility has a small kitchen adjacent to the cafeteria, from which food could be served. The kitchen is not, however, adequate for on-site food preparation. Charter school administrators will oversee the lunch operation to ensure that standards of quality and nutrition are met and that the contractor adheres to all government regulations.

Private food service providers from whom we will seek bids include the following:

- Marriot Food Services (national)
- Aramark Educational Service (national)
- Nathalie's Food Services (local – Bronx)
- Clovervale Foods (national)
- Preferred Meals (national)

We will also discuss with the New York City Board of Education the possibility of their providing food services for the school. The John Riesenbach Charter School that will open in Harlem this fall has elected to have the Board of Education provide the food service, as they will provide the food and administer the reimbursement from the federal lunch program, reducing the administrative burden on the charter school.

As the proposed school would be located in the lowest-income congressional district in the country, all but a very small number of the students will be eligible for federal and state food subsidies. We will seek reimbursement from the federal government for these meals. The federal government has a higher-rate subsidy for "severe need" schools, in which more than 60% of students are eligible for free or reduced-price meals. Bronx Prep will clearly meet these qualifications and therefore receive a higher-rate subsidy from the federal lunch program.

Based on the food budget presented on the next page, we do not expect that the cost of the breakfast and lunch program will exceed the reimbursement amount from the federal government, even under a plan to provide all students with a free lunch. The federal and state reimbursements for the students whose lunches are covered in part or in full should be adequate to provide breakfast and lunch free of charge to all students. We do not have an interest in taking on the administrative burden of collecting payments from the few students not eligible for a free lunch. This equal treatment will also obviate the need to administer a procedure that would effectively make students' family income obvious to their peers.

Attachment III-21*Health Services*

To provide comprehensive health services to students we have planned a partnership with Martin Luther King, Jr. Health, a well-regarded community health clinic located four blocks from the proposed school site. This clinic can provide better and more comprehensive health care than we could offer at the school site and can do so at no cost to the school. The clinic director, Pat Thompson, has a history of working with public schools in the neighborhood and is delighted to partner with a new charter school.

Martin Luther King, Jr. Health, an affiliate of Bronx-Lebanon Hospital, was founded in 1966 as an effort to address the fact that many South Bronx residents relied primarily on hospital emergency rooms for their health care needs. As a result medical treatment in the community was generally episodic and symptom-oriented, rather than holistic, long-term and preventative. MLK works to develop long-term relationships between families and health care professionals, and to provide health care in a caring, nourishing environment. It provides medical services to people of all ages, including specialties like dentistry, an eye clinic, an allergy clinic, and a nutrition program. It also provides a wide range of social services and health education, which the clinic views as integral to the overall health of their patients.

In addition to being available for students when they are ill, MLK will take responsibility for making our students and their parents aware of preventative health necessities like immunizations and vaccinations. They will also include the Bronx Prep community in their outreach efforts on issues of public health. They hold regular health fairs for young people to address a wide range of issues including fire safety, nutrition, dermatological health and dental hygiene. If we choose, they can also make information available to our students' parents as part of their regular community outreach efforts. Examples of this are their parent-to-parent workshops on coping with parenting stress and their recent cancer outreach to women, which offered free screening for cervical and breast cancers.

The economics of the partnership are quite simple in the South Bronx, where almost every student will qualify for government funding to cover his or her care at the clinic. For those few students who do not qualify for Medicaid or Child Health Plus (New York State's health plan for kids), the clinic will waive the fees. The school community will repay its debt to the clinic with student volunteerism. As part of their service program students may volunteer at the clinic and in the process learn more about the careers of doctors and other health care professionals. On occasional Saturdays the school will also provide the clinic with a team of students who have accumulated the requisite number of discipline points to earn them Saturday clean-up duty.

To escort students who don't feel well to the clinic, we will rely primarily on parent volunteers. If a volunteer is not available, an "off-duty" teacher can play this role. If a student is not well enough to return to school, parents will be required to pick him or her up at the clinic.

Attachment III-22

Services for Students with Disabilities

Provision of Special Education Services

The Bronx Preparatory Charter School is dedicated to ensuring that the individualized needs of *all* our students are met and met well. The goals of academic achievement and good character described elsewhere in this application are equally the goals for children who have learning disabilities and special needs. We recognize, however, that students with disabilities may require unique strategies to enable them to thrive. In accordance with the federal Individuals with Disabilities Act, the New York State Law requiring the “least restrictive environment”, and our own commitment to meeting the needs of our students, the school has two priorities in the provision of special services to these students. The student must have access to the kind of instruction and support that is likely to maximize their academic success. The student must also have every available opportunity to be integrated into the school life with students of all ability levels.

To balance effectively the goals of providing specialized services and integrating students with special needs into the school community, the school will consider each student’s academic program individually, in consultation with the student’s parents and the committee on special education at the student’s district of residence. In every case we will assess whether our charter school has the ability to provide the services a student requires. With some students, the charter school staff will be able to directly provide the special support recommended by a student’s Individualized Education Plan [IEP], for example through regular individualized instruction with our reading specialist or other tutorial help. The students for whom direct service by the charter school will likely be possible and effective will include many students with learning disabilities in the following areas: basic reading skills, reading comprehension, written expressions, mathematical calculation, mathematical reasoning, oral expression and listening comprehension. Each student’s case will be assessed individually in light of the resources available at the charter school and elsewhere.

We will serve directly as many students with disabilities as we are able with a small program. In cases where the Bronx Preparatory Charter School does not have the necessary human resources or professional expertise to effectively provide for a student with special needs, however, we will rely on the local school district to provide them. Bronx Prep will contract directly with the school district for the provision of the services. In making these arrangements, every effort will be made to help find a site close by in order to maximize the possibility of a student’s participating in the charter school’s daily activities. If the public school district is amenable and space is available at the charter school, those contracted services could in some cases be provided on the charter school site. The principal of Bronx Prep will regularly assess whether the district is adequately serving the needs of the students being served under contract, and will continually review the contracting arrangement in light of the student’s progress.

Assessment of Students’ Educational Needs

As the proposed charter school will begin with students in the fifth grade, most students with specialized needs will already have an IEP that was prepared during the first several years of their schooling. In some cases, however, students may have disabilities that were not recognized by educators in former school settings. Bronx Prep teachers will be alert to the potential learning disabilities and other specialized needs of their students. If a student is not thriving and the faculty and staff suspect that special support may be needed, we will consult first with the student’s parents to seek permission to arrange for an evaluation. If all agree that it is appropriate for a student to be evaluated, the charter school will provide a referral to the committee on special education at the student’s district of residence, which will evaluate the student and provide the IEP. As described above, the charter school will either provide the services recommended by the IEP directly or contract with the student’s district of residence to do so.

The school will also establish an advocacy process to address situations in which a student's parent and the faculty of Bronx Preparatory Charter School believe that the child has been wrongly classified or that a student's IEP prescribes inappropriate services. The principal will be responsible for coordinating an assessment of the student's needs and the services recommended for every student with an IEP. If, after consulting with the student's teachers, the principal and parent are not satisfied with the recommendations of the IEP, they will approach the district's committee on special education together to advocate a revision or declassification.

Attachment III-23

Strategies for Students at Risk of Academic Failure

The entire approach to Bronx Preparatory Charter School has been designed with an at-risk student population in mind, as tragically, a common school in the South Bronx is by definition a school for students at risk of academic failure. Only 16.6% of 4th graders in our local school district, District 9, met New York State's standards on the new English test this year. The 4-year *graduation* rate of the high school three blocks away, Taft High School, hovers around 35% each year. To give a relatively concise overview of our approach, this attachment focuses on six aspects. (1) We will establish a school culture of high expectations, civility, caring, and order. (2) We will adopt academic standards and curriculum that emphasize basic skills like grammar, arithmetic, and reading, as well as higher-order thinking skills like problem solving, interpreting a text, and constructing an argument. (3) We will hire a half-time reading specialist and use a skills-based math and reading remedial program to fill in gaps in students' academic preparation. (4) We will keep students in the school for a longer school day and longer school year, in order to both give additional time for learning and to reduce the time they have available for negative activities. (5) We will provide a summer skills-building program to the incoming students who are most at risk of academic failure. (6) We will offer an 8-year program that begins in the 5th grade, a year during which academic achievement of many inner-city students drops off dramatically and negative behaviors become much more common.

School Culture

At the Bronx Preparatory Charter School we will repudiate the notion that low academic achievement and behavior problems are to be expected of kids from low-income families. Instead we will deliberately establish a school culture where learning, civility, caring and academic success are not just considered good things, but are the expectation – all the time. We believe that having well defined norms and values is a good approach in any school, but its importance is magnified in a school for adolescents in the South Bronx. The devastated economy and broken school system of the Bronx give kids little opportunity to learn how to be successful in the American economy. The Bronx has 1 million adults of working age but just 200,000 jobs. As a result kids are faced with an environment in which many intelligent, hardworking adults are relegated to low-paying jobs, and where a few choose to get ahead economically by breaking the law. With that framework it can be difficult for students to envision themselves with a successful career, and many are in danger of losing hope. At grades 5 and 6 young people begin looking to define who they will be as adults and what they are going to value. Their school must actively help them draw together in their minds the connection between character, achievement and economic success. Clearly defined values and norms, school uniforms, consistent discipline, and high expectations in every aspect of school life will all contribute to the development of a positive school culture.

Standards and Curriculum

Students from low-income families, many of whom speak English as their second language, are cruelly shortchanged today by schools that fail to give them good preparation in basic skills. It is a problem of our school system generally: students learn about problem solving but nobody teaches them the arithmetic they need to solve the problems; students are asked to interpret a text without being given tools to help them decode the text's words; students are asked to write creatively without being introduced to the vocabulary that might bring their thoughts to the page. Problem solving, interpretation, and creative writing are marvelous things, and Bronx Prep students will do quite a lot of them. They will not, however, skip the basic skills lessons that will build a foundation and give them tools for higher-order thinking.

During the middle school years, Bronx Prep will adopt an intensive English program to develop students' reading, writing and speaking skills. Students will spend two class hours a day on English: one period for reading and literature and a second for composition, vocabulary and grammar. In the literature class

students will read all kinds of engaging literature: novels, fables and philosophical texts, short stories, essays, plays, poems and memoirs. Twelve weeks a year the materials for this class will be those of the Great Books Foundation, which are designed to teach both reading and critical thinking skills. During the remaining weeks teachers will select their own literature to use for the same purpose. (See Tab XIII for samples of the Great Books materials.)

The second English period will be for writing. This class will teach the skills that students need in order to write well: vocabulary, spelling, grammar and word usage, sentence structure, paragraph construction, brainstorming, description, argument, outlining, revision. Students will also learn the particulars of various writing forms: stories, essays, reports, journal entries, newspaper articles, poems, and more. (See Tab XII for samples of the materials to be used in composition instruction.) Social Studies and Science teachers will also participate in the teaching of writing in formats appropriate to their subject matter. We believe that good writing is a skill that must be deliberately taught in courses across the curriculum, not uniquely in language arts classes.

Recognizing that we will serve a large number of students with limited English proficiency, we will use math texts in grades 5 and 6 that are not overly saturated with words. As described above, students will spend many hours a day at Bronx Prep working on English language skills, but in math class their purpose is to acquire math skills. The extra puzzles and little stories in many of today's math texts, designed to hold students' interest, have the ironic effect of distracting and frustrating students with poor English skills. Principals of good schools in East Harlem and the South Bronx have recommended the Sadlier Company's math texts, which enable students to work to a very high level in math, even if they still struggle with English. (See Tab XIV for sample Sadlier Math materials.) Math instruction (like all instruction except in Spanish class) will be in English, but we will make every effort to minimize the degree to which language deficits retard students' math development. As students realize that they are capable of genuine success math class, they will gain confidence in their abilities more generally.

Remediation / Individualized Instruction

In addition to a curriculum designed to address students' need for more work on basic skills, we will give students individualized work to address their particular academic needs. This extra support will be built into all students' academic programs, and it will take three forms. 1) Students will work through computerized reading and math skills drill, overseen by teachers and tutors. Students will do drills on the computer three times a week, focusing on their problem areas, be they fractions or decimals or spelling or decoding words. As students master simpler concepts they will move on at their own pace to more complex concepts. To oversee this kind of work properly, we will match each instructor or tutor with about 12 students. 2) At other periods during the week students will have the opportunity to work with individual tutors on their homework or on basic skills. This kind of one-on-one attention is wonderful for young people, and we will train and work with as many good tutors as we can find. We will seek tutors from local colleges, especially Fordham University, and from other community institutions. The relationship of one of our Board members with the Prep-for-Prep Community Service program provides a pool of possible tutors. Individualized support services will also be helpful to the more advanced students, who will utilize them to work on challenging material for which some of their peers may not yet be prepared. 3) Finally, students who have serious difficulty with reading will also have the opportunity to work frequently with our part-time reading specialist. We will recruit, if possible, a reading specialist trained in the *Reading for All Learners* program developed by Alan Hofmeister at Utah State University. He began with a successful phonics-based approach and modified it specifically to serve students at risk of academic failure. The approach is frequently used for middle school students with a learning disability or simple need for remedial instruction and for people learning English as a second language. The program is supported by thirty years of research, and it comes with a series of materials to help students learn to segment words and syllables into phonemes, the key to decoding words accurately and fluently.

Longer School Day and Year

American schoolchildren do not spend enough time learning. Cross-national samples of academic performance show Americans' comparative results to decline dramatically as students progress through middle and high school. Students in District 9, 73.4% of whom do not meet the New York State English language standards, have a particularly urgent need for more instructional time. The school will have an 8 ½-hour day and a 210-day year, providing 50% more instructional time than a traditional American school with a 6 ½-hour day and a 180-day year.

Summer Skills-Building Program

During the month of July we will provide a four-week skills-building program to the incoming students most at risk of academic failure. The program will serve both to give these students intense instruction in basic reading and math skills and to give them a head start in acclimatizing to the norms and rigors of Bronx Prep.

Eight Year Program Beginning at Fifth Grade

As described above, at fifth grade students' academic performance in the New York City public schools drops off dramatically. The Bronx Preparatory Charter school aims to enroll students at that vulnerable moment, help them to catch up to grade level as quickly as possible, and then see them through to college. An eight-year path allows time to help students recover ground in basic skills in the early years, grapple with more complex material and critical thinking skills for several years more, and by the end of high school be introduced to college-level work. This would not be possible with a just a four-year course of study at either the middle or high school level. Were we to serve only high school students, the entering ninth 9th graders would be quite far behind, and the challenge of preparing them for college would be considerable. Were we to serve only grades 5-8, we would face the prospect of sending students off to high school in an area with limited quality options for students whose families can not afford private schools.

TAB

IV

STANDARDS &

CURRICULUM

Attachment IV - 25 & 26
Achievement Standards & Core Curriculum

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General Introduction & Overview – Standards & Curriculum

The school's learning standards and curriculum are presented here as a single attachment, in order to reinforce our view that a good curriculum is inseparable from a school's achievement standards for students. The purpose of a curriculum is to provide a mechanism by which students master the skills and content articulated in the learning standards; it is not a simple description of the topics on which students and teachers spend their time.

At the Bronx Preparatory Charter School students will prepare to meet and exceed New York State's 28 learning standards. They will do so by engaging in an academic program framed by our own set of more specific skills- and content- based standards. In developing the school-specific set of overall standards, we have borrowed heavily from those developed by the Hudson Institute's *Modern Red Schoolhouse*. We have fleshed out these standards with grade-by-grade level benchmarks and classical curriculum content. To construct benchmarks and a curriculum framework we have relied primarily on the following resources: the learning standards of the State of Virginia, standards of the National Council of Teachers of Mathematics, New York State Department of Education standards & curriculum resource guides, the learning goals of some curriculum materials we intend to use, especially the *Great Books Foundation*, the advice of a wide variety of educators, including educational leaders at Phillips Exeter Academy and Rice High School in Harlem, and our own innovations.

The State of Virginia's standards were particularly helpful because they are clear, specific, measurable, rigorous, and comprehensive. They encompass both skills and content, and have given our founders an ideal framework for planning. In most cases we have modified them somewhat to align them with the New York State Regents standards and the particular goals and priorities of Bronx Prep.

The school standards will frame and drive teachers' lesson plans on a day-to-day basis, facilitated through an instructional and information management software package called *Achieve*. The standards will be downloaded onto the school's management system, and teachers will be required to construct their lesson plans around the standards & benchmarks of their subject and the students' grade level. Assessments will be linked in a similar way to the standards, to enable teachers and administrators to keep day-to-day tabs on the skills and content that students have mastered and those on which students still need additional practice and instruction. Because the *Achieve* software is Internet based, teachers will be able to work on their lesson plans by logging onto the worldwide web from home or from school. The school will have computer workstations for teachers onsite, and will lend teachers laptop computers, as necessary, to facilitate their planning from offsite locations.

The standards and curriculum presented here will serve as a core. The benchmarks are as comprehensive as possible at all grade levels, in order to give a picture of what we expect all students to know and be able to do by the end of each grade level and by graduation. They are carefully aligned with the New York State Regents requirements and will provide students with the tools necessary to succeed on the Regents examinations required for graduation. Currently fewer than 20% of District 9 students pass the Regents examinations. The standards and curriculum here, however, do not nearly represent the breadth or the richness of the school's learning program. Our extended school day and school year provide ample time for teachers to delve into additional content areas, in-depth studies of particular curriculum topics and special projects. These activities will all take place on top of, not instead of, the topics in the core.

It is important to note that while the curriculum content will be relatively traditional, classroom life will not be. Classrooms will most often be set up with students in a large circle or U-shape, to facilitate student participation and an inquiry-driven approach to learning. As often as possible teachers will use a Socratic approach to engage students in a rigorous discussion about the subject of their lesson, be it a piece of literature, a math problem, an historical event or text, a student's piece of writing, or a scientific experiment. Seminars will be used beginning in the fifth grade, but as students progress and have

mastered more and more basic skills, the Socratic approach will become ever more common, as it is a powerful tool for developing students' ability to think critically. To support teachers as they advance their ability to lead an inquiry-driven discussion, we will rely on two organizations expert in the approach: Phillips Exeter Academy and the Great Books Foundation. Exeter faculty will help us primarily through professional development opportunities for our teachers, and the Great Books Foundation will supply both teacher training and some curriculum materials for our reading and literature and social studies programs.

While our standards & curriculum are presented subject-by-subject, school faculty will work together to ensure that each student's education is not a series of isolated pieces, but rather a coherent whole. The opportunities for thematic connection will exist throughout the curriculum, especially between the social studies & literature curricula and those of science & mathematics. Teachers will be encouraged to construct their lesson plans in a way that enables them to collaborate with their colleagues, and to reinforce themes that students are addressing across subjects.

We view writing and technology, two topics sometimes presented as separate subjects in school designs, to be skills necessary for success in *all* subjects. As such, the standards and benchmarks for student achievement in writing and technology are embedded throughout the seven subject areas. We view writing as so critical to students' success that we have added an extra school period devoted strictly to writing every school day from grades 5 through 8.

To help students integrate the wide variety of topics they have studied, and to connect their school learning to the "real world," students and teachers will spend a block of time in June and July of each year working on a culminating project. During this time, once students have completed the core requirements for the grade, extended periods of time will be carved out of the standard school day to work on these creative synthesizing projects. In the middle academy and in grades 9 & 11 of the senior academy, these projects will all be group activities. Teachers & students will design them together over the course of the year, and be ready with a plan to execute once the last month of the school year arrives. In grades 10 & 12 students will do individual projects, which they will plan with the help of their teachers. The seniors' capstone project will take the form of a substantial written paper that makes a meaningful argument, which they will present to the school community and defend through a process of questions and answers.

Finally, as we believe it is essential that students become good citizens as well as good students, all students will be required to complete a community service project each year. Students will construct the projects in collaboration with their teachers, parent volunteers, and others involved with the community service program. They will spend time on the project throughout the school year, and will be required to do written reports describing and evaluating the results of their projects.



September 20, 1999

Ms. Kristen Kearns Jordan
Bronx Preparatory Charter School

[REDACTED]
New York, NY [REDACTED]

Dear Ms. Kearns Jordan:

We are happy to support the application of the Bronx Preparatory Charter School and approve the use of any Modern Red Schoolhouse materials that may be contained in that application.

Your vision and plan for the development of the Bronx Preparatory school is compelling. We look forward to assisting you in shaping a school that reflects your vision and will serve the South Bronx Community by providing the highest quality education for their children.

Sincerely,

Brian Spears
Vice President for Development

REDACTED

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35a

New York State Language Arts Standards

Standard 1: *Language for Information and Understanding*

Students will read, write, listen and speak for information and understanding. As listeners and readers, students will collect data, facts, and ideas; discover relationships, concepts and generalizations; and use knowledge generated from oral, written and electronically produced texts. As speakers and writers, they will use oral and written language to acquire, interpret, apply and transmit information.

Standard 2: *Language for Literary Response and Expression*

Students will read and listen to oral, written, and electronically produced texts and performances from American and world literature; relate texts and performances to their own lives; and develop an understanding of the diverse social, historical, and cultural dimensions the texts and performances represent. As speakers and writers, students will use oral and written language that follows accepted conventions of the English language to present, from a variety of perspectives, their opinions and judgements on experiences, ideas, information and issues.

Standard 3: *Language for Critical Analysis and Evaluation*

Students will listen, read and write for critical analysis and evaluation. As listeners and readers, students will analyze experiences, ideas, information, and issues presented by others using a variety of established criteria. As speakers and writers, they will use oral and written language that follows the accepted conventions of the English language to present, from a variety of perspectives, their opinions and judgements on experiences, ideas, information and issues.

Standard 4: *Language for Social Interaction*

Students will listen, speak, read and write for social interaction. Students will use oral and written language that follows the accepted conventions of the English language for effective social communication with a wide variety of people. As readers and listeners, they will use the social communications of others to enrich their understanding of people and their views.

Additional English Language Arts Standards at Bronx Preparatory Charter School

Middle Academy Level

1. *Language for Information and Understanding*

Students can understand and move beyond the basic factual level of a text and analyze its central problems of meaning. They can identify an author's intent, thesis and theme, and can reflect critically upon its message by testing ideas for clarity, coherence and support from the text. Students have an awareness of audience and an appreciation of varied perspectives on a text. Students can find relevant information by using library, technological and other resources. Students can interpret & analyze information and make appropriate generalizations.

rebut opposing views. Students can draft, revise and edit their own work in order to produce coherent, thoughtful, well-developed essays and reports.

4. *Language for Social Interaction*

Students can use oral discourse effectively as a method of learning. They can speak comfortably in front of their peers and have experience speaking before unfamiliar audiences. They can use rhetorical devices for desired effect and use them to construct logical, informative arguments.

5. *Language for Creative Expression*

Students have a highly developed ability to express their thoughts creatively in a variety of literary forms. They can engage their audience with unique thoughts and story lines, elegant use of language and clarity of expression.

6. *Grammar and Language Usage*

Students show facility with language and a breadth of vocabulary. Students can use the most effective linguistic style for a given situation. They can evaluate their own language usage, both written and oral, and that of others, identifying rhetorical structures and linguistic conventions. Students can apply the rules of English effectively and draw inferences from language use.

2. *Language for Literary Response and Expression*

Students can draw on a growing reservoir of knowledge about literary and other kinds of texts when seeking insight into the meaning of works written for different purposes and at different points in history.

2. *Language for Critical Analysis and Evaluation*

Students can use critical judgement to evaluate a text and can develop an argument supported with reasoning and evidence. When thinking, writing and speaking about literature students can identify a problem, generate and support ideas, seek relevant evidence in the text, weigh the evidence, and use it effectively in an argument. Students can use inference, evaluate and revise ideas, draw reasonable conclusions and revise and improve an argument. Students can draft, revise and edit their own work in order to produce coherent, thoughtful, well-developed compositions, essays and reports.

3. *Language for Social Interaction*

Students can engage in discussions as active listeners and speakers. They can synthesize, challenge and build on others' ideas. They value others' perspectives, and can examine the thoughts of peers and adults by asking for clarification, weighing the merits of opposing arguments and modifying initial opinions as evidence demands. They can use formal or informal language as is appropriate to the style and the substance of the interaction in which they are engaged.

4. *Language for Creative Expression*

Students can write for the purpose of creative expression, using the forms of narratives, stories, plays and poetry. Their written work makes use of imagery, descriptive language, strong verbs, and cultural and historical allusions.

6. *Grammar and Language Usage*

Students can understand and use the conventions of Standard English. They can evaluate language usage with reference to the parts of speech, rules of grammar and figurative language. Students correctly use a broad and growing vocabulary.

Senior Academy Level

1. *Language for Information and Understanding*

Students have a highly developed ability to understand a text and analyze its central problems of meaning. They can discern fact from argument or fiction in writing and speech. Students can formulate research questions and conduct organized research effectively. They can acquire relevant information, exclude extraneous material, and employ facts and statistics to support generalizations and arguments. They can summarize material and expand and reduce information to fit the desired format.

2. *Language for Literary Response and Expression*

Students have understanding of the great themes in literature. They can identify literary conventions and their effects in unfamiliar works. In written and verbal communication they can cite literature they have read in order to help explicate their own ideas.

3. *Language for Critical Analysis and Evaluation*

Students have an advanced ability to critically evaluate a text and to construct clear, considered, nuanced and qualified arguments supported with reasoning and evidence. Students can anticipate and

Curriculum Overview – English Language Arts

Enabling students to achieve the above-described English Language Arts standards is among the highest priorities of the Bronx Preparatory Charter School. In order to achieve those standards Bronx Prep students will 1) engage in a rigorous English Language Arts program for a minimum of 1 hour and 50 minutes per day in grades 5-8, 2) spend one or two additional class periods per week in grades 5-8 working on individualized reading and language skills on a computer-based program, and 3) work on reading and writing skills in courses throughout the curriculum throughout their eight-year course of study.

The formal language arts program of the Middle Academy (grades 5-8) will devote a daily class period to composition, vocabulary, spelling and grammar (including a unit on public speaking). It will devote an additional daily class period to reading and the critical evaluation (oral and written) of literature.

Grammar, Composition and Public Speaking

The school will adopt a classical approach to teaching grammar, vocabulary, spelling, language use and composition, quite unlike that practiced by many New York City Public Schools. Using techniques like sentence diagramming and grammar drill, the school will work intensely with students to teach them the norms of Standard English. Using vocabulary workbooks that give definitions, synonyms, antonyms and context, teachers will give students access to a much broader vocabulary with which to express their ideas. And students will be directly taught strategies for good composition, including using words well, writing correct sentences, building paragraphs with topic sentences and evidence, and developing a narrative or argument.

The texts to be used for composition and vocabulary are those developed by the Sadlier Company, whose approach is frequently used in highly successful inner-city Catholic schools serving large numbers of African-American and Latino students (including students in the Bronx and East Harlem). The vocabulary texts give students exercises with definitions, synonyms & antonyms, sentence constructions, analogies and shades of meaning in order to help students remember and learn to use new words. The grammar and composition will be facilitated through Sadlier's composition workshop. In addition to helping students with basic grammatical forms, the texts give students tools for a wide range of writing styles, from letter writing to narrative writing to persuasive writing to writing research reports and writing about literature. An overview of the scope and sequence of the Sadlier *Composition Workshop* and samples from the Sadlier texts are included as Tab XII of this application submission.

Language arts teachers will also learn techniques and develop materials for sentence diagramming through a two-day seminar taught by Lenore Gavigan, a New Jersey public schoolteacher. Students need to understand relationships among words and clauses in order to write clearly and effectively. This traditional technique is a wonderful way to make those relationships visual and clear.

These traditional grammar, vocabulary and composition exercises will be balanced by a literature-driven half of the curriculum that fosters students' development of analytical and critical thinking skills. For example, students will use the *Vocabulary Workshop* from Sadlier-Oxford's vocabulary program. In this workbook students will do exercises with definitions, synonyms & antonyms, sentence completions, shades of meaning, word roots, analogies and original sentences, in order to master new words. Students will expand their vocabulary efficiently and effectively through this method. However, students will also be expected to learn new words by keeping a vocabulary notebook in their literature class, in which they write down meanings and sample sentences for unfamiliar words that they encounter in texts. Teachers will regularly assess whether students have learned and can use these new words discovered in context. This literature-based part of the vocabulary program is a vital complement to the workbook approach, as it teaches students how to actively build vocabulary through reading and examination of context. Though

students will not pick up as many words as they pick up through the workbooks, as skill and thinking development it is profoundly important. This methodology is the primary way in which adults learn new words. As such, in order for the Bronx Preparatory Charter School to fulfill its mission of graduating students who are lifelong learners, we must enable students to develop habits like acquiring new vocabulary through reading.

At the end of the seventh grade students will take a three-month hiatus from the study of grammar and composition in written form to do an intense unit on public speaking. The teachers at De La Salle Academy, a highly successful middle school for economically disadvantaged students here in New York City, have developed a wonderful public speaking course and are willing to share their methodology with the Bronx Prep faculty. Bronx Prep students will spend these three months studying and practicing techniques for good oral communication to a group. Throughout the remainder of their education at Bronx Prep they will be required to access these skills regularly to do oral presentations in all of their subjects. Students will be expected to return to the teachers of the public speaking course for coaching on oral presentations throughout their Bronx Prep career.

Beginning with the 9th grade, grammar and composition will no longer have a segregated hour during the class day. However, teachers at the senior academy will work zealously to ensure that students continue their work mastering the basics of grammar, vocabulary and the correct and effective use of language. Teachers will correct students' written and oral language until it becomes completely error free. And students will return regularly to their Middle Academy public speaking coach to develop confidence and effectiveness in more formal oral discourse.

Literature and Critical Writing

The literature-based half of the language arts program will use as its core the Junior Great Books program developed by the Great Books Foundation in Chicago. Junior Great Books is a wonderful inquiry-based program that combines outstanding literature with interpretive discussion and activities to help all students learn to read for meaning and think critically. Students will engage in diverse set of high-quality literature selections. They will start with understanding the text; move to analysis, interpretation and evaluation; weigh several avenues of meaning; revise thinking; and then convey this thinking in an organized, cogent fashion. Students will practice these skills in both written and oral forms.

We have selected this program because in addition to its overall quality and rigor, it contains elements and strategies that are particularly successful with students whose second language is English. The recommended multiple readings of each text give critical reinforcement to students struggling with language acquisition, and the program's focus on key vocabulary words is also vital to these students. It is a program in which all students participate, giving opportunities for students to have verbal interactions with their teachers and peers. ESL students need these opportunities to use and master language. And finally, the extended time spent on each text provides ample time for students to understand the language of the text and then tremendous opportunity for critical analysis and judgement. Once they have understood a text, ESL students have an ability to think critically that is on a par with those students whose first language is English. This program, therefore, gives them the opportunity to demonstrate and develop confidence in their ability to *think*, even if they are still struggling with the ability to express their thoughts as English sentences.

We plan to use the Great Books Foundation's literature, interpretive and writing activities and suggested questions for discussion for the students' entire eight-year course of study, and to require the Great Books Foundation training for all Language Arts and Social Studies teachers. (They are currently developing texts in Spanish, which we may eventually use in Spanish classes, as well). Given the skills deficits we expect to encounter with entering students, we have been advised to order "down" at the outset, using the 4th grade texts for the 5th graders, etc. We believe this to be the wise course, which will also enable us to

use a greater number of these wonderful texts as we bring students to grade level and beyond over the course of the eight years. Examples of literature selections at the Middle Academy level include works by Maya Angelou, Alan Paton, Kurt Vonnegut, John Updike, Charles Dickens, Anne Frank, Julio Cortázar and William Saroyan. Examples at the Senior Academy level include works by Aristotle, John Dewey, Virginia Woolf, Plato, Sophocles, Sigmund Freud, José Ortega, William Faulkner and Thomas Hobbes. The following grade-by-grade curriculum descriptions contain a full listing of literary works included with the program.

Also included as Tab XIII of this application submission are two samples drawn from the teachers' editions of the *Great Books* materials that will give a concrete picture of the program's methodologies. The first, an African folktale called Chura and Marwe, is designed for sixth graders. The second attachment is a selection from the guidebook for teachers at the ninth grade level. It provides examples of both generic directions to teachers on using the methodology and some specific recommended discussion questions for works by Anton Chekov and Adam Smith.

Though teachers will be expected to use the inquiry-driven style of *Great Books* to teach all literature, work with the *Great Books* texts themselves will not demand the entire time devoted to reading and literature. During the classes when they are not using the *Great Books* selections, teachers will generally be free to use literature of their own choosing, though the principal must approve all selections. We will provide a wide variety of resources to enable teachers to select high quality literature, for example annotated booklists like *Outstanding Books for the College Bound* and *Your Reading: An Annotated Booklist for Middle School and Junior High School*, both from the National Council of Teachers of English. We will also have the support of our curriculum guidance team at Phillips Exeter Academy, who will share their book recommendations with Bronx Prep teachers, along with good strategies for using them to engage students and support student writing. Over time, in consultation with our curriculum advisors at Exeter, Bronx Prep faculty will develop recommended grade levels for the use of popular works, to avoid the problem of repetition.

We believe that given the level of professionalism we expect of our teachers, it is critical that we empower the language arts staff with the above-described discretion over the literary selections they use to bring students to the school's language arts standards. Teachers teach best the literature that they themselves find powerful, and with which they have experience. The additional suggestions and requirements described below represent our effort to balance this teacher discretion with the school's need to have a coherent program for students.

Language Arts teachers will be strongly encouraged to use literature selections that complement their students' social studies curriculum. In the 7th, 8th, and 11th grade literature program, for example, when students are studying American history, teachers should select a disproportionate number of works by American authors and introduce them chronologically. (Students read a colonial author as they study the colonial period, and so on). Ralph Waldo Emerson's essay *Self Reliance* is a wonderful complement to a discussion in an American History lesson about value systems in America in the first half of the 19th century, and Americans' responses to becoming a more urban society. Early twentieth century poetry by Langston Hughes and novels by Zora Neale Hurston elucidate the discrimination, segregation, and other indignities suffered by African Americans, as well as the spirit and language of devotion to human rights that laid the groundwork for the Civil Rights Movement later in the century. Teachers will be expected to make similar connections between the global studies curricula of the 5th, 6th, 9th & 10th grades and appropriate literature by international authors.

A final content requirement, for Senior Academy students only, is the annual Shakespeare play. Ninth graders will be required to read *Romeo and Juliet*, tenth graders to read *Hamlet*, eleventh graders to read *MacBeth*, and twelfth graders to read *Julius Caesar*. Teachers will be strongly encouraged to add a

second Shakespeare play every year, so that students will have read and analyzed eight by the time they graduate. Students will be occasionally required to memorize soliloquies from a Shakespeare play. The Bronx Preparatory Charter School planning team has yet to meet a young person who has read or seen too many Shakespeare plays.

Benchmarks and Curriculum by Grade Level – English Language Arts

Grade 5 - Benchmarks

By the end of grade 5 students can:

Vocabulary

1. Define, spell and use correctly at least 300 new vocabulary words.
2. Acquire new vocabulary through the reading of literature by using context cues and a dictionary if necessary.

Grammar

3. Define the basic parts of speech, like nouns, pronouns, articles, verbs, adjectives, adverbs, prepositions and conjunctions.
4. Understand the relationships among the basic parts of speech and use sentence diagramming to show those relationships.
5. Know the distinction between subject and predicate and construct sentences that are neither fragments nor run-ons.
6. Construct sentences in which subjects and verbs agree.

Composition

7. Write a paragraph with a topic sentence and supporting details.
8. Write a personal letter.
9. Write a plot summary of a book or story.
10. Analyze information from a story and make interpretive generalizations in written form.
11. Use the library and electronic reference sources to gather information on a topic and take notes.

Literary Understanding, Interpretation and Evaluation

12. Understand and move beyond the basic factual level of a text and address its central problems of meaning.
13. Develop a basic argument that answers a question of meaning in a text and support the argument with evidence from the text.
14. Synthesize and build on their peers' and others' ideas when discussing a work of literature.
15. Agree and disagree constructively with their peers about questions of meaning or values.

Grade 5 - Curriculum

Vocabulary

Students will successfully complete the 4th grade level *Vocabulary Workshop* from Sadlier-Oxford's Vocabulary development program. In this workbook students will do exercises with definitions, matching the meaning, synonyms & antonyms, sentence completions, word associations, and original sentences, in order to master 200 new words.

Students will also learn new words by keeping a vocabulary notebook in their literature class, in which they write down meanings and sample sentences for unfamiliar words that they encounter in texts. Teachers in the literature portion of the Language Arts course will actively facilitate students' notebook keeping, and will regularly assess whether students have learned and can use these new words discovered in context.

Literature

The core of the literature program will be the Junior Great Books Series 4, Semesters 1 & 2, and Series 5, Semester 1. These series include the following selections, along with interpretive questions and activities. (Two samples of the Junior Great Books texts and their accompanying interpretive questions and activities are included as an attachment.)

Junior Great Books - Series 4, Semesters 1 & 2

1. *Thank You, Ma 'm*, by Langston Hughes
2. *The Water-Horse of Barra*, Scottish Folktale as told by Winifred Finlay
3. *The Story of Wang Li*, by Elizabeth Coatsworth
4. *The Elephant's Child*, by Rudyard Kipling
5. *Vasilissa the Beautiful*, Russian folktale as told by Post Wheeler
6. *Cedric*, by Tove Jansson
7. *Fresh*, by Philippa Pearce
8. *The Enchanted Sticks*, by Stephen J. Myers
9. *Wisdom's Wages and Folly's Pay*, by Howard Pyle
10. *Mr. Singer's Nicknames*, by James Kruss
11. *Alice's Adventures in Wonderland* (selection), by Lewis Carroll
12. *Thunder, Elephant & Dorobo*, African folktale as told by Humphrey Harman
13. *The Man with the Wen*, Japanese folktale as told by Iris Shah
14. *Ali Baba and the Forty Thieves*, from *The Arabian Nights*
15. *The Goldfish* by Eleanor Farjeon
16. *Beauty and the Beast* by Madame de Villeneuve
15. *Prot and Krot Polish Folktale* as told by Agnes Szudek
16. *The Hemulen Who Loved Silence* by Tove Jansson
17. *The Devoted Friend* by Oscar Wilde
18. *The Dancing Princesses* by Walter de la Mare
19. *Allah Will Provide* North African Folktale as told by Robert Gilstrap and Irene Ghrahame
20. *Mr. Toad* (from the *Wind in the Willows*) by Kenneth Ghrahame
21. *The Further Adventures of Toad* (from the *Wind in the Willows*) by Keneth Grahame

Series 5, Semester 1

1. *Charles* by Shirley Jackson
2. *Ghost Cat* by Donna Hill
3. *Turquoise Horse* by Gerald Hauman
4. *Maurice's Room* by Paula Fox
5. *Barbie* by Gari Soto
6. *Lenny's Red-Letter Day* by Bernard Ashley
7. *The Prince and the Goose Girl* by Elionor Mordaunt
8. *Tramp* by Malcom Carrick
9. *Alberic the Wise* by Norton Juster
10. *Podhu and Aura African Folktale* as told by Humphrey Harman
11. *The Invisible Child* by Tove Jansson
12. *The Bat-Poet* by Randall Jarrell

We estimate that work on the Junior Great Books materials will take approximately half of the hours devoted to literature. (That number will vary slightly, depending on the number of interpretive exercises teachers elect to use). Texts and exercises to be used during the remaining hours devoted to literature will be of teachers' own choosing.

In their individual selections teachers will be strongly encouraged to use some texts that will complement the Social Studies curriculum for grade 5. Greek, Roman and Aztec myths, for example, would be a wonderful companion to the extended unit on Classical Civilizations done in 5th grade social studies. Stories about ancient China or Egypt would also help students to make critical connections between the history and the literature the peoples they are studying. World religions will also be a theme of the 5th grade curriculum, and so teachers will be encouraged to use literature in which the characters are affected by their own religious traditions and by the religious beliefs of people whom they encounter. These more intimate narratives where religion plays a role will help students to understand the role of religion in culture, and will also help give students perspective on some of the broader religious movements like the Crusades or expansion of Islam.

Grade 6 - Benchmarks

By the end of grade 6 students can:

Vocabulary

1. Define, spell and use correctly at least 400 new vocabulary words.

Grammar

2. Master understanding and use of the following subsets of the major parts of speech: proper & common nouns, singular & plural nouns, and the possessive case of nouns; personal, relative, interrogative, demonstrative, indefinite, intensive and reflexive pronouns; finite, transitive, and intransitive verbs.
3. Understand the relationships among the above-described and other common parts of speech; use sentence diagramming to show those relationships.
4. Use the following punctuation appropriately: periods, question marks, commas and semi-colons.
5. Use present, past and future verb tenses correctly.
6. Write a paragraph with a topic sentence, supporting details and appropriate transition words.

Composition

7. Write an anecdote.
8. Write an opinion essay, using evidence to support the main idea.
9. Write a basic business letter & e-mail.

Literary Understanding, Interpretation and Evaluation

10. Compare and synthesize information from various sources.
11. Identify a question of meaning in a piece of literature and develop an argument about that question of meaning, supported by evidence from the text.
12. Ask specific questions to clarify and extend meaning.
13. Challenge and contribute to the ideas of their peers about the interpretation or evaluation of a text.

Grade 6 - Curriculum

Vocabulary

Students will successfully complete the 5th & 6th grade levels *Vocabulary Workshop* from Sadlier-Oxford's Vocabulary development program. In this workbook students will do exercises with definitions, matching the meaning, synonyms & antonyms, sentence completions, word associations, and original sentences, in order to master 400 new words.

Students will also learn new words by keeping a vocabulary notebook in their literature class, in which they write down meanings and sample sentences for unfamiliar words that they encounter in texts. Teachers in the literature portion of the Language Arts course will actively facilitate students' notebook keeping, and will regularly assess whether students have learned and can use these new words discovered in context.

Literature

The core of the literature program will be the Junior Great Books Series 5, Semester 2, and Series 6, Semesters 1 & 2. These series include the following selections, along with interpretive questions and activities. (Two samples of the Junior Great Books texts and their accompanying interpretive questions and activities are included as an attachment.)

Junior Great Books, Series 5, Semester 2

1. *A Game of Catch* by Richard Wilbur
2. *The Tale of the Three Storytellers* by James Kruss
3. *Spit Nolan* by Bill Naughton
4. *The Queen's Care* by Elizabeth Jamison Hodges
5. *Lucky Boy* by Philippa Pearce
6. *The Secret of the Hattifatteners* by Tove Jansson
7. *The Happy Prince* by Oscar Wilde
8. *Kaddo's Wall* West African Folktale as told by Harold Courlander and George Herzog
9. *Dita's Story* by Mary Q. Steele
10. *Oliver Hyde's Dishcloth Concert* by Richard Kennedy
11. *Mowgli's Brothers* (from *The Jungle Books*) by Rudyard Kipling
12. "Tiger-Tiger!" (from *The Jungle Books*) by Rudyard Kipling

Series 6, Semesters 1 & 2

1. *Through the Tunnel* by Doris Lessing
2. *Raymond's Run* by Toni Cade Bambara
3. *My Greatest Ambition* by Morris Lurie
4. *A Likely Place* by Paula Fox
5. *The Mysteries of the Cabala* by Isaac Bashevis Singer
6. *Bad Characters* by Jean Stafford
7. *Chura and Marwe* African Folktale as told by Humphrey Harman
8. *Superstitions* by Mary La Chappelle
9. *The Last Great Snake* by Mary Q. Steele
10. *Gaston* by William Soroyan
11. *Soumchi* by Amos Oz
12. *The Veldt* by Ray Bradbury
13. *The White Umbrella* by Gish Jen
14. *The Parsley Garden* by William Soroyan
15. *The Secret of the Yellow House* by Anatoly Aleksin
16. *As the Night the Day* by Abioseh Nicol
17. *The Summer Brook* by Tove Jansson
18. *The Alligators* by John Updike
19. *Tweedledum and Tweedledee* (from *Through the Looking-Glass*) by Lewis Carroll
20. *The Magic Jacket* by Walter de la Mare
21. *Props for Faith* by Ursula Hegi
22. *Letting in the Jungle* (from *The Jungle Books*) by Rudyard Kipling
23. *The Spring Running* (from *The Jungle Books*) by Rudyard Kipling

As in grade 5, we estimate that work on the Junior Great Books materials will take approximately half of the hours devoted to literature. (That number will vary slightly, depending on the number of interpretive exercises teachers elect to use). Texts and exercises to be used during the remaining hours devoted to literature will be of teachers' own choosing.

As every year, teachers will be strongly encouraged to use some texts that complement the Social Studies curriculum. Major themes of the 6th grade curriculum are economics and freedom, and students explore a wide range of cultures and economic and political systems as they examine these issues. Slavery is a major topic of this social studies course. The literature program can help students to make slavery concrete, and to understand its horror, by giving students access to stories by and about human beings living as chattel of other people. *Uncle Tom's Cabin* is only the most obvious of these opportunities. Good stories about people suffering the indignities of apartheid in South Africa abound, and reading them would help students to explore issues of freedom and justice in a very different cultural context.

Grade 7 - Benchmarks

By the end of grade 7 students can:

Vocabulary

1. Define, spell and use correctly at least 300 new vocabulary words.

Grammar

3. Use the following punctuation appropriately: dashes, hyphens, apostrophes, parentheses and brackets, quotation marks, and italics.
4. Use modifiers correctly.
5. Use comparisons correctly.
6. Use correct pronouns and clear pronoun reference.

Composition

7. Write a paragraph with a topic sentence, supporting details, and appropriate transition words, maintaining paragraph unity throughout.
8. Write a descriptive paragraph.
9. Write an essay that includes critical analysis and evaluation to make an argument.
10. Pre-write, draft, revise and proofread their own work in order to produce coherent, well-developed essays and reports.
11. Produce oral and written reviews or persuasive speeches, supporting their opinions with evidence from a variety of sources.
12. Write social letters, cards and electronic messages to friends, relatives and acquaintances, using the appropriate language and style for the situation and audience.

Public Speaking

13. Make speeches and oral presentations to their peers, in which they make an argument cogently and clearly.
14. Speak slowly and clearly, using correct language.
15. Demonstrate a poised demeanor in front of a group of people.
16. Use appropriate hand and body language to enhance their argument, avoiding distracting or nervous movement.
17. Work with one or more other people to present information/an argument through a group presentation.
18. Use props like slides, power point presentations and objects effectively in an oral presentation.

Literary Understanding, Interpretation and Evaluation

19. Read aloud with expression, conveying the meaning and mood of a work.
20. Distinguish between relevant and irrelevant information and between fact and opinion when interpreting a text.
21. Identify a question of meaning in a piece of literature, use inference and weigh evidence relating to that question of meaning to draw conclusions. Include relevant information and exclude extraneous material when presenting an argument that answers the question and offers evidence as support.

Grade 7 - Curriculum*Vocabulary*

Students will successfully complete the 7th grade level *Vocabulary Workshop* from Sadlier-Oxford's Vocabulary development program. In this workbook students will do exercises with definitions, synonyms & antonyms, sentence completions, shades of meaning, word roots, analogies and original sentences, in order to master 200 new words.

Students will also learn new words by keeping a vocabulary notebook in their literature class, in which they write down meanings and sample sentences for unfamiliar words that they encounter in texts. Teachers in the literature portion of the Language Arts course will actively facilitate students' notebook keeping, and will regularly assess whether students have learned and can use these new words discovered in context.

Public Speaking

Students will engage in a lively, three-month course in public speaking. They will learn techniques for effective oral argument and presentation, and practice speechmaking through at least two short projects and a longer, culminating project. Students will learn and practice strategies for different styles of public speaking, including political, instructional, motivational and others. Students will learn how to make effective presentations with more than one person, and will learn how to use props like slides, technological presentations, and objects effectively.

Literature

The core of the literature program will be the Junior Great Books Series 7. These series include the following selections, along with interpretive questions and activities. (Two samples of the Junior Great Books texts and their accompanying interpretive questions and activities are included as an attachment.)

Junior Great Books - Series 7

1. *Harrison Bergeron* by Kurt Vonnegut Jr.
2. *I Just kept on Smiling* by Simon Burt
3. *At Her Father's and Her Mother's Place* by Natalya Baranskaya
4. *The White Circle* by John Bell Clayton
5. *The Zodiacs* by Jay Neugeboren
6. *End of the Game* by Julio Cortázar
7. *The Cat and the Coffee Drinkers* by max Steele
8. *Anne Frank: The Diary of a Young Girl* (selection)
9. *The Secret Lion* by Alberto Alvaro Rios
10. *Day of the Butterfly* by Alice Munro
11. *A Christmas Carol* by Charles Dickens

We estimate that work on the Junior Great Books materials will take approximately half of the hours devoted to literature. (That number will vary slightly, depending on the number of interpretive exercises teachers elect to use). Texts and exercises to be used during the remaining hours devoted to literature will be of teachers' own choosing.

As every year, teachers will be strongly encouraged to use some texts that complement the Social Studies curriculum. The Social Studies curriculum in grades 7 & 8 will be a chronological study of the United States. Teachers will be encouraged not only to rely primarily on American authors for their selections outside of the Great Books materials, but also to use works written *during or about* the period that students are studying in social studies.

Grade 8 - Benchmarks

By the end of grade 8 students can:

Vocabulary

1. Define, spell and use correctly at least 300 new vocabulary words.

Grammar & Composition

2. Use the indicative, imperative and subjunctive moods of verbs correctly.
5. Understand the nominative, possessive and objective case of nouns and pronouns and use them correctly in sentences.
6. Correctly use more complex verb tenses like the perfect and progressive tenses.
7. Understand and use the following verbals: infinitives, present participles (including gerunds) and past participles.
8. Reconstruct sentences so as to avoid the passive voice.

Composition

9. Organize information according to an identifiable structure to write the following kinds of pieces: a personal narrative, a persuasive essay, a plot summary of a movie, and a book report.
10. Develop a good research topic, use a variety of reference materials to gather information, take effective notes, make an outline, write a research report with a bibliography, citing sources where appropriate.
11. Evaluate and revise ideas, draw reasonable conclusions and revise and improve an argument.

Literary Understanding, Interpretation and Evaluation

12. Recognize different levels of meaning in a text.
13. Identify significant literary devices (like metaphor, symbolism, foreshadowing, dialect, rhyme, meter, irony, and climax) and use those elements to interpret a literary work.
14. Write about literature by identifying a problem, generating and supporting ideas, seeking relevant evidence in the text, weighing the evidence, and using it effectively in an argument.
15. Interpret literature and evaluate literary merit based on an understanding of the genre and the literary elements.

Grade 8 - Curriculum

Vocabulary

Students will successfully complete the 8th grade level *Vocabulary Workshop* from Sadlier-Oxford's Vocabulary development program. In this workbook students will do exercises with definitions, synonyms & antonyms, sentence completions, shades of meaning, word roots, analogies and original sentences, in order to master 200 new words.

Students will also learn new words by keeping a vocabulary notebook in their literature class, in which they write down meanings and sample sentences for unfamiliar words that they encounter in texts. Teachers in the literature portion of the Language Arts course will actively facilitate students' notebook keeping, and will regularly assess whether students have learned and can use these new words discovered in context.

Literature

The core of the literature program will be the Junior Great Books Series 8. These series include the following selections, along with interpretive questions and activities. (Two samples of the Junior Great Books texts and their accompanying interpretive questions and activities are included as an attachment.)

Junior Great Books - Series 8

1. *Sucker* by Carson McCullers
2. *The Summer of the Beautiful White Horse* by William Saroyan
3. *Rules of the Game* (from *The Joy Luck Club*) by Amy Tan
4. *The Destroyers* by Graham Greene
5. *The Watch* by Ivan Turgenev
6. *Approximations* by Mona Simpson
7. *The Griffin and the Minor Canon* by Frank R. Stockton
8. *Star Food* by Ethan Canin
9. *Winter* (from *The Winter Room*) by Gary Paulsen
10. *High School Graduation* (from *I Know Why the Caged Bird Sings*) by Maya Angelou
11. *Adventures of Huckleberry Finn* (selection) by Mark Twain

We estimate that work on the Junior Great Books materials will take approximately half of the hours devoted to literature. (That number will vary slightly, depending on the number of interpretive exercises teachers elect to use). Texts and exercises to be used during the remaining hours devoted to literature will be of teachers' own choosing.

As every year, teachers will be strongly encouraged to use some texts that complement the Social Studies curriculum. The Social Studies curriculum in grades 7 & 8 will be a chronological study of the United States. Teachers will be encouraged not only to rely primarily on American authors for their selections outside of the Great Books materials, but also to use works written *during or about* the period that students are studying in social studies.

Grade 9 - Benchmarks

By the end of grade 9 students can:

Vocabulary

1. Define, spell and use correctly at least 300 new vocabulary words.
2. Use concrete nouns and vivid verbs in their writing.
3. Use sensory words effectively in their writing.

Composition

4. Use varied sentence structure in their writing.
5. Write a persuasive letter.
6. Write a headline, lead paragraph and body of a news article.
7. Write a basic essay about a piece of literature, interpreting & analyzing information and making appropriate generalizations.

8. Write a poem and a short play.

Literary Understanding, Interpretation and Evaluation

9. Present clear analyses of issues, ideas, texts and experiences, supporting their positions with well-developed arguments and effective use of details and evidence.
10. Describe the difference between an interpretive essay and an evaluative essay, and write clear, persuasive examples of each.
11. Understand how multiple levels of meaning are conveyed in a text.
12. Read aloud expressively to convey a clear interpretation of the work.

Grade 9 - Curriculum

Vocabulary

Students will successfully complete the 9th grade level *Vocabulary Workshop* from Sadlier-Oxford's Vocabulary development program. In this workbook students will do exercises with definitions, synonyms & antonyms, sentence completions, shades of meaning, word roots, analogies and original sentences, in order to master 200 new words.

Students will also learn new words by keeping a vocabulary notebook in their literature class, in which they write down meanings and sample sentences for unfamiliar words that they encounter in texts. Teachers in the literature portion of the Language Arts course will actively facilitate students' notebook keeping, and will regularly assess whether students have learned and can use these new words discovered in context.

Literature

The core of the literature program will be the Junior Great Books Series 9. These series include the following selections, along with interpretive questions and activities. (Two samples of the Junior Great Books texts and their accompanying interpretive questions and activities are included as an attachment.)

Junior Great Books - Series 9

1. *Miriam* by Truman Capote
2. *Zoo Island* Tomás Rivera
3. *At the Pitt-Rivers* by Penelope Lively
4. *New African* (from *Sarah Phillips*) by Andrea lee
5. *Sponono* by Alan Paton
6. *Bobby's Room* by Douglas Dunn
7. *A Bird in the House* by Margaret Laurence
8. *The Strange Case of Dr. Jekyll and Mr. Hyde* by Robert Louis Stevenson
9. *The Little Cousins* by Peter Taylor
10. *The Idealist* by Frank O'Connor
11. *The Time Machine* by H. G. Wells

Grade 10 - Benchmarks

By the end of grade 10 students can:

Vocabulary

1. Define, spell and use correctly at least 300 new vocabulary words.
2. Use precise adjectives and adverbs in their writing.
3. Avoid overused words in their writing.

Composition

4. Write a clear, effective paragraph with a topic sentence, supporting examples and descriptions, logical sequencing, clear transitions, clincher sentences, and overall unity and coherence.
5. Write stories, poems, literary essays and plays that observe the conventions of the genre and contain interesting and effective language and voice.
6. Revise and improve early drafts of their work by restructuring, correcting errors and revising for clarity and effect.
7. Write the following kinds of pieces for a newspaper: a review, a feature article, a biographical profile, and a report on an interview.
8. Write an effective business letter.

Literary Understanding, Interpretation and Evaluation

9. Present clear analyses of issues, ideas, characters, texts and experiences, supporting their positions with well-developed arguments and effective use of details and evidence.
10. Interpret and evaluate authors' language usage, identifying rhetorical structures and linguistic conventions.
11. Describe the difference between an interpretive essay and an evaluative essay, and write clear, persuasive examples of each.

Grade 10 - Curriculum*Vocabulary*

Students will successfully complete the 10th grade level *Vocabulary Workshop* from Sadlier-Oxford's Vocabulary development program. In this workbook students will do exercises with definitions, synonyms & antonyms, sentence completions, shades of meaning, word roots, analogies and original sentences, in order to master 200 new words.

Students will also learn new words by keeping a vocabulary notebook in their literature class, in which they write down meanings and sample sentences for unfamiliar words that they encounter in texts. Teachers in the literature portion of the Language Arts course will actively facilitate students' notebook keeping, and will regularly assess whether students have learned and can use these new words discovered in context.

Literature

The core of the literature program will be the Introduction to Great Books (High School Level) – First Series. These series include the following selections, along with interpretive questions and activities. (Two samples of the Junior Great Books texts and their accompanying interpretive questions and activities are included as an attachment.)

Introduction to Great Books – First Series

1. *Why War?* by Sigmund Freud
2. *The Melian Dialogue* by Thucydides
3. *The Social Me* by William James
4. *Rothschild's Fiddle* by Anton Chekhov
5. *Concerning the Division of Labor* by Adam Smith
6. *Chelkash* by Maxim Gorky
7. *How an Aristocracy May Be Created by Industry* by Alexis de Tocqueville
8. *Observation and Experiment* by Claude Bernard
9. *Everything that Rises Must Converge* by Flannery O'Connor
10. *An Essay in Aesthetics* by Roger Fry
11. *An Outpost of Progress* by Joseph Conrad

12. *On Studying* by José Ortega y Gasset

Grade 11 - Benchmarks

By the end of grade 11 students can:

Vocabulary

1. Define, spell and use correctly at least 300 new vocabulary words.

Grammar

1. Combine sentences with relative pronouns or appositives.
2. Write concise and effective sentences, avoiding redundancies and the use of clichés.

Composition

3. Write personal and persuasive essays appropriate for a college application.
4. Write original pieces in a variety of literary forms, correctly using the conventions of the genre and using structure and vocabulary to achieve an effect, and displaying an individual style.
5. Plan & write a documented research report that asks an interesting question and provides a thoughtful, well-investigated, appropriately qualified argument and supporting evidence.

Literary Understanding, Interpretation and Evaluation

6. Present clear analyses of issues, ideas, texts and experiences, supporting their positions with well-developed arguments and effective use of details and evidence. Effectively anticipate and rebut opposing interpretations.
7. Produce literary interpretations that explicate multiple layers of meaning in a text.
8. Use their repertoire of knowledge about literary and other kinds of texts when seeking insight into the meaning of works written for different purposes and at different points in history.
9. Present responses to and interpretations of works of recognized literary merit with reference to the principal features of the genre, the period, the literary tradition and their own personal experiences and knowledge.

Grade 11 - Curriculum

Vocabulary

Students will successfully complete the 11th grade level *Vocabulary Workshop* from Sadlier-Oxford's Vocabulary development program. In this workbook students will do exercises with definitions, synonyms & antonyms, sentence completions, shades of meaning, word roots, analogies and original sentences, in order to master 200 new words.

Students will also learn new words by keeping a vocabulary notebook in their literature class, in which they write down meanings and sample sentences for unfamiliar words that they encounter in texts. Teachers in the literature portion of the Language Arts course will actively facilitate students' notebook keeping, and will regularly assess whether students have learned and can use these new words discovered in context.

Literature

The core of the literature program will be the Introduction to Great Books (High School Level) – First Series. These series include the following selections, along with interpretive questions and activities. (Two samples of the Junior Great Books texts and their accompanying interpretive questions and activities are included as an attachment.)

Introduction to Great Books – Second Series

1. *Politics* by Aristotle
2. *Of Commonwealth* by Thomas Hobbes
3. *Barn Burning* by William Faulkner
4. *Of Civil Government* by John Locke
5. *In Exile* by Anton Chekhov
6. *The Declaration of Independence*
7. *Equality* by Isaiah Berlin
8. *Sorrow-Acre* by Isak Dinesen
9. *Why Americans Are Often So Restless* by Alexis de Tocqueville
10. *After the Ball* by Leo Tolstoy
11. *Habit* by William James
12. *The Overcoat* by Nikolai Gogol

The *Great Books* materials for grade 11 are extraordinarily well suited to a very close alignment between the literature read in language arts class and the history studied in social studies. Teachers will be encouraged to shift the order of the above materials to complement the chronology of the history sequence, and to fill in with chronologically appropriate selections of their own choosing. Of all the eight years, we expect that the history and literature curricula in grade 11 will be most closely integrated.

Grade 12 - Benchmarks

By the end of grade 12 students can:

Vocabulary

1. Define, spell and use correctly at least 300 new vocabulary words.

Composition

2. Use standard English skillfully in written and oral forms, applying established rules and conventions for presenting information and making use of a wide range of grammatical constructions and vocabulary to achieve an individual style that communicates effectively.

3. Create plays, poems and stories that convey unique thoughts and story lines, are clear, and use language in an eloquent way.
4. Use linguistic and rhetorical devices to construct logical, informative arguments.
5. Present a controlling idea that conveys an individual perspective and insight into a topic.
6. Evaluate their own and others' written and oral presentations with regard to different criteria and recognize the change in evaluations when different criteria are considered to be more important.

Literary Understanding, Interpretation and Evaluation

7. Extract salient information from texts, synthesize information from diverse sources and identify complexities and discrepancies in the collected information.
8. Present clear, critical analyses of issues, ideas, texts and experiences, supporting their positions with clear, considered, nuanced arguments and effective use of details and evidence. They can effectively anticipate and rebut opposing interpretations, or if appropriate, modify their initial views after weighing the merits of opposing arguments and evidence.
9. Recognize and understand the significance of a wide range of literary elements and techniques (like figurative language, imagery, allegory, irony, blank verse, symbolism, and stream-of-consciousness) and use those elements to interpret a literary work.
10. Support interpretations and decisions about relative significance of information with explicit statements, evidence and appropriate arguments.
11. Evaluate the quality of texts and presentations from a variety of critical perspectives.
12. Effectively use the conventions of formal oratory and debate, monitoring and adjusting their own performance to have the most significant effect on their audience.

Grade 12 - Curriculum

Vocabulary

Students will successfully complete the 12th grade level *Vocabulary Workshop* from Sadlier-Oxford's Vocabulary development program. In this workbook students will do exercises with definitions, synonyms & antonyms, sentence completions, shades of meaning, word roots, analogies and original sentences, in order to master 200 new words.

Students will also learn new words by keeping a vocabulary notebook in their literature class, in which they write down meanings and sample sentences for unfamiliar words that they encounter in texts. Teachers in the literature portion of the Language Arts course will actively facilitate students' notebook keeping, and will regularly assess whether students have learned and can use these new words discovered in context.

Literature

The core of the literature program will be the Introduction to Great Books (High School Level) – First Series. These series include the following selections, along with interpretive questions and activities. (Two samples of the Junior Great Books texts and their accompanying interpretive questions and activities are included as an attachment.)

Introduction to Great Books – Second Series

1. *On Happiness* by Aristotle
2. *Habits and Will* by John Dewey
3. *Happiness* by Mary Lavin
4. *Crito* by Plato
5. *On Liberty* by John Stuart Mill
6. *Conscience* by Immanuel Kant
7. *A Hunger Artist* by Franz Kafka
8. *Of the Limits of Government* by John Locke
9. *Antigone* by Sophocles
10. *Why Great Revolutions Will Become Rare* by Alexis de Tocqueville
11. *A Room of One's Own* by Virginia Woolf
12. *In Dreams Begin Responsibilities* by Delmore Schwartz

New York State Mathematics, Science & Technology Standards

- Standard 1:** Students will use mathematical analysis, scientific inquiry, and engineering design, as appropriate, to pose questions, seek answers, and develop solutions.
- Standard 2:** Students will access, generate, process, and transfer information using appropriate technologies.
- Standard 3:** Students will understand mathematics and become mathematically confident by communicating and reasoning mathematically, by applying mathematics in real-world settings, and by solving problems through the integrated study of number systems, geometry, algebra, data analysis, probability & trigonometry.
- Standard 4:** Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.
- Standard 5:** Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.
- Standard 6:** Students will understand relationships and common themes that connect mathematics, science, and technology and apply the themes to these and other areas of learning.
- Standard 7:** Students will apply the knowledge and thinking skills of mathematics, science & technology to address real-life problems and make informed decisions.

Additional Mathematics Standards at Bronx Preparatory Charter School

Middle Academy Level

1. ***Problem Solving and Mathematical Argument:*** Students can use reason and logic to generate questions for exploration. They can use a variety of approaches – for example, numerical, symbolic, graphical, statistical – to investigate and solve complex problems. Students can analyze non-routine problems, construct a basic mathematical argument, and use technology to create a mathematical presentation. Students can apply their mathematical problem-solving abilities to real-world situations.
2. ***Number Systems:*** Students can add, subtract, multiply and divide whole numbers, fractions & decimals. They can use these arithmetic skills to solve problems by selecting from a variety of approaches. They can use estimation to check the reasonableness of arithmetically derived solutions.
3. ***Data Collection, Presentation & Analysis:*** Students can pose questions and collect & represent data to answer their questions. Students can use technology and other tools to systematically acquire data and to organize, present and explain data in a variety of ways. Students can construct and test hypotheses in order to draw inferences and make convincing mathematical arguments about the data. Students can make predictions and solve problems using basic concepts of probability.
4. ***Functions & Algebra:*** Students understand the mathematical concept of function and can use functional notation to express relationships and transformations. They can represent a function by a matrix and use matrices to perform transformations. They understand the concept of a rate of change

and its connection to the slope of a line. Students can use symbolic forms to represent and analyze simple mathematical situations and structures. Students know the order of operations, and can recognize and express associative, distributive and commutative properties in algebraic terms. Students can formulate and solve equations and inequalities by numerical, symbolic and graphical methods. Students can use, create and explain formulas and algorithms.

5. *Geometry*: Students can represent spatial relationships and geometric properties, select and use appropriate units to measure geometric figures, and determine reasonable standards for accuracy of measurement. Students can identify various geometric figures and use appropriate formulas to calculate their perimeter, area, or volume. They can judge reasonableness of their results. They can use visualization and spatial reasoning to solve problems within and outside of mathematics.

Senior Academy Level (Additional standards beyond those for the Middle Academy)

1. *Problem Solving and Mathematical Argument*: Students can reason logically to evaluate information, and use a variety of approaches to evaluate and solve complex problems by drawing on their knowledge of multiple areas of mathematics. Students can analyze a non-routine problem by modeling, illustrating, simplifying, generalizing and shifting to another point of view. Students will use connections among mathematical ideas in developing solutions to complex problems, and will apply their mathematical problem-solving abilities to real-world situations. Students can construct mathematical arguments & proofs using correct mathematical language and representations, including formal mathematical justifications for their claims.
2. *Number systems*: Students understand rational and irrational numbers, ways of representing numbers and relationships among numbers and number systems. Students can accurately and efficiently calculate with real and complex numbers. They can check accuracy of results using estimation. They understand the meaning of mathematical operations and how they relate to each other.
3. *Data Collection, Presentation & Analysis*: Students can design, conduct and analyze an experiment. Students understand concepts of central tendency, correlation and variability; they can use statistical models and tests to interpret data from their own experiments and those performed by others. Students can make predictions and solve problems using tools of probability.
4. *Functions, Algebra & Geometry*: Students understand various types of patterns and functional relationships, including polynomial, trigonometric and exponential functions. Students can use functions, graphs, matrices and charts to represent & analyze mathematical situations, structures and transformations. Students understand the relationship between slope and tangent line and between instantaneous and average rates of change. Students can use symbolic forms to represent and analyze more complex mathematical situations and structures. Students can use mathematical models and analyze change in both real and abstract contexts. Students can solve systems of equations; evaluate, graph and analyze the elementary functions; and use, create and explain formulas and algorithms. Students can represent spatial relationships and geometric properties, and use appropriate transformations to analyze geometric objects. Students can use analytical tools for measurement and appropriate formulas for area and volume.

Curriculum Overview – Mathematics

The grade 5-12 mathematics curriculum at the Bronx Preparatory Charter School is designed to enable all students to achieve the above-described standards, and to prepare all students for college-level math. It will begin in the first two months with a comprehensive review of basic arithmetic, and by grade 12 introduce students to principles of calculus. The approach to math is an integrated one, as number systems, data analysis, functions, algebra, geometry, trigonometry & higher math are inextricably linked and build naturally on each other. For successful mastery of all topics, students will need to become proficient in techniques of problem solving and mathematical argument.

We will adopt a relatively non-constructivist approach to mathematics during the middle academy years, with intensive introduction to/review of basic skills. For 55 minutes each day students will participate in our formal math program in heterogeneously mixed groups. The experience of successful educators in low-income neighborhoods that serve large numbers of students whose second language is English has led us to a program by the Sadlier Company. Sadlier's texts are clear, logically presented, and not excessively saturated with language, a critical trait for students who are learning English as a second language. Their traditional approach is one frequently used in highly successful inner-city Catholic schools that serve large numbers of Latino students. In fact, Sadlier-Oxford's Progress in Mathematics © 2000, has just been unanimously approved for use in the state whose public schools serve nearly half of our nation's Latino students – California. During the rigorous California textbook review and approval process, Sadlier-Oxford's program was the only comprehensive single-series K-6 mathematics program overwhelmingly approved by the Instructional Materials Advisory Panel, the Curriculum Review Panel, the Curriculum Commission, and ultimately, the State Board of Education.

The Sadlier program will enable teachers to use the following 14 strategies throughout the four-year middle academy course.

1. **Developmental step-by-step instruction in Basic Skills**, using “Manipulative,” “Discover” and “Symbolic” lessons to help students move from a concrete to an abstract understanding of mathematical concepts.
2. **Problem Solving** strategies are integrated throughout the program. A proven 5-step model leads students through the critical-thinking process behind each problem-solving strategy. Students are challenged to both solve unique problems and to construct problems of their own.
3. **Mathematical Reasoning** is taught deliberately through mental math exercises, critical thinking questions and real-world problems that require students to make connections between mathematical concepts.
4. **Mathematical Communication** is enabled through introduction to vocabulary and multiple opportunities for students to explain their thinking process about mathematical concepts and problems.
5. **Technology** is used throughout the program, especially through computer and calculator exercises to reinforce mathematical objectives and stimulate learning.
6. **Practice and Maintenance** is part of every chapter. Previously learned skills are constantly being reviewed.
7. **Manipulatives** are used to introduce mathematical concepts, enabling students to move from the concrete through the pictorial to a symbolic understanding.

8. **Cooperative Learning** is encouraged, and students are given multiple opportunities to work in small groups, share ideas and make connections.
9. An introduction to basic **Algebraic Concepts** in the middle grades establishes the foundation for algebraic thinking and a more formalized study of algebra in the upper grades.
10. Traditional and alternative **Assessment** tools are provided throughout the program.
11. **Excerpts of Quality Literature** by well-known authors introduce each chapter, and help students understand the connections between mathematics and other subjects.

The grade-by-grade benchmarks and curriculum describe in depth the topics to be learned at each level. The specific strategies used by individual teachers to bring their students to a mastery level in these topics will vary from teacher to teacher. We will encourage teachers to use the above-described 14 strategies, as well as other techniques with which they have been successful in the past. All teachers will be expected to keep students effectively on task, in order that they complete the course of study within the expected time frame. A common set of assessments (see attachment V) will be used throughout the school year to ensure that teachers are indeed enabling students to meet required benchmarks.

The Sadlier Company curriculum to be used combines an introduction to specific mathematics skills in a clear, classical format with regular lessons in application of technology and a specific five-step problem solving approach. (Tab XIV of this application submission provides Sadlier's own description of the program). The problem solving approach is presented as a framework early in students' 5th grade year, and is then returned to every chapter for the entire middle school math program. Students are introduced to eighteen effective strategies to use within the approach during the 5th and 6th grades, and are then introduced to increasingly challenging problems in the 7th and 8th grades. By the time they reach high school, this effective approach to problems should have become second nature. The attachment shows how Sadlier introduces the strategy to students and gives a set of sample problems.

During two periods per week, in addition to the regular daily math period, middle school students will work individually on their math skills through a computer-based basic-skills program of the style used by after-school tutorial programs around the country. Overseen by a teacher or tutor, students will spend their time on their problem areas, be they, for example, fractions, decimals or graphing skills. Advanced students will use these individual-instruction hours to work on more advanced material.

By the time students enter the ninth grade they will have solid foundations in basic skills and algebra, and they will be prepared to engage in a rigorous high-school program. At this stage the school will loosen somewhat our adherence a back-to-basics approach, as by then students' thought processes become more critical and they begin to more actively construct knowledge. The curriculum must reflect their evolving needs. The middle academy curriculum will have armed students with the skills they need, and then the senior academy curriculum will increasingly require student inquiry and active participation to prepare them intellectually for the independence of college and adult life. Phillips Exeter Academy is providing generous guidance and support to enable us to adapt some of their curriculum and inquiry-driven methodologies in ways that will be effective at a common school for students of mixed abilities in the Bronx.

Mathematics will be taught to students in heterogeneously mixed groups at the middle academy. All students will be expected to achieve the same benchmarks semester by semester. At the senior academy, however, we currently plan to have two mathematics tracks. Both tracks will be rigorous, college-preparatory courses of study. An investigation of a wide variety of good high schools, however, has made it clear to us that not every student will be ready for calculus by the twelfth grade. We intend to prepare

every student we can to take calculus in their senior year at Bronx Prep. Those who need more time will be prepared to take calculus in their first year of college. The more accelerated sequence (Track A) will take students through the Algebra I & Geometry standards in three semesters. The next three semesters will be devoted to Algebra II, Trigonometry & Mathematical Reasoning. The final two senior academy semesters will be a full-year course that prepares students for the AP Examination in Calculus. The second sequence (Track B) will take students through the Algebra I & Geometry standards in four semesters, devote the eleventh grade to Algebra II and the twelfth grade to Trigonometry. They will graduate prepared to take a college calculus course. All students will have the opportunity to take the computer mathematics elective, either after completing mathematics requirements for graduation or while they are completing those requirements.

As a supplement to a high-quality textbook, math teachers at the senior academy will make use of a *Touchstones* mathematics/critical thinking program, which utilizes an approach to thinking about and discussing math that is very similar to the Great Books Foundation's approach to thinking about and discussing literature. The program both broadens and deepens students' understanding of math through a process that aims to demystify and humanize it. Used with great success at Rice High School, a Catholic high school in Harlem for students of all academic abilities, the program gives teachers a series of one-period lessons on "big topics" in math. Students read philosophy as homework preparation and participate in a shared inquiry discussion that will be quite familiar to them after years of *Great Books* discussions. The first *Touchstones* lesson is called IS IT JUST A MATTER OF DEFINITION? This lesson is a discussion of whether everything is definable and what a definition should look like. To prepare, students read Euclid's *Elements*, Plato's *Meno*, and Wittgenstein's *Philosophical Investigations*. A table of contents of the *Touchstones* mathematics program is attached, along with an appendix that provides further explanation of the lessons. Teachers will be encouraged to start using these lessons when students are in the tenth grade. (See Tab XIV for sample *Touchstones* materials.)

The sequence and benchmarks presented for the senior academy math program are an adaptation of the sequence and benchmarks recommended to schools and mathematics teachers by the State of Virginia.

We will work to ensure that the maximum number of students follows and succeeds in the more rigorous math track. We are also prepared to reassess our plan to create two tracks if the mathematics faculty determines that all students can handle the more accelerated sequence. Under any scenario, all students will be prepared to pass the required New York State Regents Exams in Mathematics.

Benchmarks and Curriculum by Grade Level – Mathematics

Grade 5 - Benchmarks

By the end of grade 5 students can:

Problem Solving

1. Solve simple word problems using a 5-step model: imagine, name, think, compute and check
2. Solve word problems by applying the following strategies alone or in combination, as appropriate:
 - a. reasoning logically
 - b. interpreting the remainder
 - c. assessing whether there is adequate information
 - d. determining whether there is more than one solution

Number Systems

1. Understand place value and can read and write numbers to the hundred thousands.
2. Compare and order whole numbers (using $<$ or $>$ symbols).
3. Round whole numbers to the nearest ten, hundred & thousand.
4. Add & subtract whole numbers with single and multiple digits.
5. Understand and describe the relationship between addition and subtraction.
6. Recite multiplication tables up to the nines.
7. Multiply whole numbers by one digit.
8. Understand and describe the relationship between multiplication and division.
9. Divide whole numbers by one digit, expressing answers as a whole number + a remainder
10. Understand what fractions are, recognize numerator & denominator, and express fractions in standard form.
11. Understand equivalent fractions and how to rename fractions in higher or lower terms
12. Add & subtract fractions with like denominators.
13. Recognize decimals under 1 and express decimals in tenths and hundredths.
14. Understand and describe the relationship between fractions and decimals.
15. Understand the use of decimals in the representation of money.
16. Use a calculator and a spreadsheet to perform operations with whole numbers and money.

Data Collection, Presentation and Analysis

1. Use a spreadsheet to collect and manipulate data.
2. Present data manually and on a spreadsheet in the forms of line graphs, bar graphs & circle graphs.
3. Present data manually using a pictograph.
4. Assess and discuss what advantages a graph has over numerical data and vice versa.
5. Assess and discuss which graphs work better for various purposes.
6. Compute elapsed time and changes in temperature.
7. Define probability, and predict outcomes in very simple games of chance.

Geometry

8. Define the following geometric terms, draw them and express them using symbols: *line, line segment, ray, angle, intersecting lines, parallel lines* and *perpendicular lines*.
9. Define *polygon*; draw and name polygons of up to 8 sides.
10. Use and convert measurements of length and weight in the customary system: inches, feet, yards & miles, and cups, pints, quarts & gallons.
11. Use and convert measurements of length, capacity and mass in the customary system: inches, feet, yards & miles, and cups, pints, quarts & gallons, and ounces & pounds.
12. Use and convert measurements of length, capacity and mass in the metric system: centimeters, decimeters, meters & kilometers, and milliliters & liters, and grams & kilograms

Grade 5 – Curriculum

The grade 5 mathematics curriculum is in many ways the most challenging curriculum to construct, as it is the year of students' arrival, and students will come to the school at a wide range of skill levels. We expect, given the low performance of District 9 students, that in general students' skill level will be very low.

Math teachers will do a comprehensive assessment of student skill levels at the beginning of the year, and will construct an intensive three-month remedial review of elementary math geared to the specific skills deficits of their students. Teachers will select the grade 1-4 topics based on the assessments of their particular group of students, and will focus on those topics that present common problems to their students.

At the beginning of the year teachers will also create individual math plans for students, enabling them to spend extra time on the topics that give them the most difficulty. Students will work on these individualized plans through a computer-based program during two additional periods per week, overseen by instructors and tutors at a student/teacher ratio of approximately 12:1. (More advanced students can use this time to work on the challenging topics for which their peers are not yet ready). It is only through this intensive seven-periods-per-week math effort that we believe we can bring students to grade level and beyond in mathematics by the time they complete the middle academy.

While the individualized computer-based efforts will continue throughout the middle academy years for all students, the 5th grade mathematics curriculum will begin addressing topics at the 5th grade level in November. The Sadlier Company curriculum to be used combines an introduction to specific mathematics skills in a clear, classical format with regular lessons in applications of technology and a specific five-step problem solving approach. (see attachment). The problem-solving approach is used in every chapter of every text throughout the four-year middle-school course of mathematics study.

The formal fifth grade curriculum, which will explicitly prepare students to achieve the benchmarks described above, will take students through the following sequence of topics.

1. **Problem Solving Strategy: Logical Reasoning** – Students are introduced to Sadlier's 5-step problem-solving approach: imagine, name, think, compute, and check. Students learn the first of Sadlier's 18 problem-solving strategies to try within the 5-step model: Logical Reasoning. Students work through a variety of problems that can be solved with logical reasoning, for example:

Tom, Roger and Sue each had a different fruit for lunch today. One had a banana, one had an apple, and one had an orange. Tom and the boy who had a banana are cousins. Sue did not have an apple. What did each person have for lunch?
2. **Numeration** – Teachers introduce students to the concept of place value, and teach them place value the thousands. Students learn to compare and order whole numbers, and to round them to the nearest, ten, hundred or thousand.
3. **Whole Number Operations** – Students spend considerable time working on basic whole number operations. They work on addition and subtraction of multi-digit whole numbers, borrowing when necessary in subtraction. They learn to multiply and divide by one digit, expressing answers as a quotient and remainder in division. They practice performing these operations manually and on a spreadsheet.
4. **Problem Solving Strategy: Interpret the Remainder**– Students review Sadlier's 5-step problem-solving approach and learn a second strategy to try within the 5-step model: Interpret the Remainder.

Students work through a variety of problems that can be solved by interpreting the remainder, for example:

Mrs. Cooper needs 115 decorations for cakes. Decorations come 9 to a box. How many boxes should she order? When cakes are decorated, how many decorations from the last box will not be used?

Note: Problems using formerly introduced strategies are integrated throughout the problem-solving sections, so that students become familiar with using them in appropriate situations outside of the context of the lessons in which these strategies are introduced.

5. **Fractions** – Students learn what fractions are in general, what equivalent fractions are, and how to add & subtract fractions with like denominators.
6. **Decimals** – Students learn what decimals are to the tenths and hundredths, and how they relate to fractions.
7. **Problem Solving Strategy: Missing Information**– Students review the 5-step problem solving approach and learn a third strategy to try within the 5-step model: Missing Information. This is a strategy for determining whether a word problem can actually be solved with the information given. For example:
Marvin read 128 pages of his book. He skipped 19 pages of maps. How many more pages does he have left to finish the book?
Students work through a series of problems, some of which can be solved using formerly introduced strategies, and some of which will not be solvable because there is inadequate information.
8. **Geometry** – Students become familiar with lines, angles and polygons and their properties.
9. **Measurement** – Students learn about and practice measuring with both customary and metric units of length, capacity, and weight (mass).
10. **Statistics** – Students learn to make and interpret pictographs, bar graphs, line graphs and circle graphs. Students learn to construct these manually and on a spreadsheet. They explore the uses of these graphs.
11. **Probability** – Students explore simple principles and uses of probability. They learn to figure out probabilities of outcomes in simple games of chance.
12. **Money** – Students learn about a special use for decimals – money. They do operations with money and learn to use a calculator and spreadsheet to calculate and keep track of money.
13. **Problem Solving Strategy: More than One Solution**– Students review the 5-step problem solving approach and learn a fourth strategy to try within the 5-step model: More than one Solution. This is a strategy for determining whether a problem has more than one solution and then finding those solutions. For example:
Rory multiplied a 2-digit number and a 1-digit number greater than 1. The product was between 40 and 45. What were the numbers?
As always, students work through problems that require one or more of the four problem-solving strategies to which they have been introduced.

Grade 6 – Benchmarks

By the end of grade 6 students can:

Problem Solving

1. Solve simple word problems using a 5-step model: imagine, name, think, compute and check.
2. Solve word problems by applying the following strategies alone or in combination, as appropriate:
 - a. reasoning logically
 - b. interpreting the remainder
 - c. assessing whether there is adequate information
 - d. determining whether there is more than one solution
 - e. Guessing and testing
 - f. Uncovering hidden information
 - g. Making a table
 - h. Finding a pattern
 - i. Organizing a list
 - j. Working backwards
 - k. Using simpler numbers
 - l. Using a model or diagram
 - m. Using a formula
 - n. Dividing the problem into steps
 - o. Identifying extra information
 - p. Writing a number sentence
 - q. Drawing a picture
 - r. Writing an equation

Number Systems

1. Understand place value and can read and write numbers to the billions.
2. Use expanded form to write numbers up to the billions.
3. Express decimals in tenths, hundredths & thousandths, including decimals greater than 1.
4. Compare and order whole numbers and decimals (using $<$ or $>$ symbols).
5. Round whole numbers and decimals, including money.
6. Know addition properties, including commutative, identity & associative, and can use them to add quickly and correctly.
7. Know the rules of subtraction; can use the fact that subtraction is the inverse of addition to solve problems.
8. Use rounding to estimate sums, differences and products of multi-digit numbers.
9. Add three or more addends.
10. Use Roman numerals up to M (1,000)
11. Know multiplication properties, including commutative, identity & associative, and can use them to multiply quickly and correctly.
12. Use patterns to multiply and divide by 10, 100 and 1,000 and their multiples.
13. Estimate products by rounding to the nearest 10, 100 or 1,000 and multiplying.
14. Multiply by two or three digits.
15. Know and use divisibility rules for 2, 5, 10, 4, 3, 9 and 6.
16. Can use compatible-number estimation to estimate a quotient.
17. Divide by two-digit divisors.
18. Multiply and divide money.
19. Use the order of operations to evaluate numerical expressions.
20. Use a spreadsheet and calculator to solve problems following the order of operations.
21. Determine whether a number is prime or composite and do prime factorization.
22. Find the greatest common factor of two or more numbers.

23. Calculate the least common multiple of 2 or more numbers and the least common denominator of 2 or more fractions.
24. Convert between mixed numbers and improper fractions; compare and order fractions and mixed numbers.
25. Add and subtract fractions and mixed numbers with unlike denominators.
26. Multiply and divide fractions and mixed numbers.
27. Add and subtract decimals with multiple digits.
28. Use rounding and front-end estimation to estimate decimal sums and differences.
29. Multiply and divide decimals and whole numbers; decimals and decimals.
30. Use rounding to estimate decimal products; use compatible numbers to estimate decimal quotients (including money).
31. Use a calculator and a spreadsheet to perform operations with decimals and money.

Data Collection, Presentation and Analysis

32. Calculate the number of possible outcomes of an experiment involving more than one event; calculate the probability of a specific outcome.
33. Calculate the average of a set of numbers.
34. Create a frequency table to collect data.
35. Represent data by plotting points on a line; calculate the range and mode.
36. Interpret circle graphs using fractions in simplest form.
37. Use a simple database to store and access data.
38. Understand and use ratios and proportions; understand their relationship to fractions.
39. Understand and construct scale drawings.
40. Understand percents and their relationship to fractions and decimals.
41. Calculate the percent of a number.
42. Use percents in a circle graph (manually and on a spreadsheet).

Algebra & Geometry

43. Measure and draw angles using a protractor.
44. Define and draw acute, right, obtuse and straight angles.
45. Define and draw regular polygons.
46. Define and recognize congruent figures, corresponding parts, similar polygons and corresponding angles.
47. Define and draw the following kinds of triangles: scalene, isosceles, equilateral, acute, right and obtuse.
48. Calculate the size of a triangle's third angle given the size of the other two.
49. Define and draw the following quadrilaterals: trapezoid, parallelogram, rectangle, square & rhombus.
50. Define and draw diagonals of polygons.
51. Calculate the perimeter of a polygon; calculate the perimeter of regular polygons and rectangles using formulas.
52. Define and draw a radius, diameter and chord of a circle.
53. Construct a circle with a compass and with a string and pencil.
54. Define & draw lines of symmetry in figures.
55. Create transformations on graph paper using translation, reflection and rotation.
56. Define and understand the measurement of area and volume of figures.
57. Calculate the area of rectangles, other parallelograms and triangles.
58. Calculate the volume of cubes and rectangular prisms.

Grade 6 – Curriculum

In most years the grade 6 mathematics curriculum will build directly on the grade 5 curriculum. The first year, in which new 6th graders will enter the school, are exceptions. (Because of the economics of rent payments for our facilities, the school will need to accept new 6th graders in addition to new 5th graders in its first year). The 6th graders in those exceptional years, therefore, will need to go through an assessment and remediation program similar to the program for entering 5th graders. In other years, however, the 6th grade program will begin with a brief review and then move onto new topics.

For new sixth graders during the exceptional years math teachers will do a comprehensive assessment of student skill levels at the beginning of the year, and will construct an intensive three-month remedial review of elementary math geared to the specific skills deficits of their students. Teachers will select the grade 1-5 topics based on the assessments of their particular group of students, and will focus on those topics that present common problems to their students. The students new to the school will have less time for the formal 6th grade curriculum, and will therefore not likely complete the optional *Moving On: Algebra* section at the end of the sequence. These topics will be introduced in later grades, and are not represented in the above-described benchmarks.

For all students, new and returning, teachers will create individual math plans at the beginning of the year. Students will have two periods in addition to the five regular math periods a week, during which they will spend extra time on the math topics that give them the most difficulty. Students will work on their individualized plans through a computer-based program, overseen by instructors and tutors at a student/teacher ratio of approximately 12:1. (More advanced students can use this time to work on the challenging topics for which their peers are not yet ready). It is only through this intensive seven-periods-per-week math effort that we believe we can bring students to grade level and beyond in mathematics by the time they complete the middle academy.

The formal sixth grade curriculum, which will explicitly prepare students to achieve the benchmarks described above, will explore the following sequence of topics. If possible, students will do all the required topics plus the optional early introduction to algebra at the end.

1. **Place Value, Addition and Subtraction** – Teachers introduce students to “a billion” in the context of a review of place value. Students will learn to write numbers up to a billion in expanded form. In decimals, students are introduced to thousandths and decimals greater than 1. Students review comparing and ordering whole numbers, and rounding them to the nearest million. Students will also begin rounding decimals, starting with money. Students work on estimating sums and differences using front-end estimation. They learn addition with three or more addends, multi-digit subtraction with zeros, and larger-digit addition and subtraction. Students are introduced to Roman numerals and flowcharts.
2. **Problem Solving Strategy: Guess and Test**– Students are introduced (or re-introduced) to Sadlier’s 5-step problem-solving approach: imagine, name, think, compute, and check. Students will learn the fifth of Sadlier’s 18 problem-solving strategies to try within the 5-step model: Guess and Test. (Students unfamiliar with the first four strategies will learn them through after-class work with their instructors). Students will work through a variety of problems that can be solved with Guess and Test, for example:

Ed needs to take his cat, bird and snake to the veterinarian. His car can only hold 2-one pet and himself. If left alone together, the cat will eat the bird, and the snake will eat the bird. How many trips will Ed need to make?

Reminder: Problems using formerly introduced strategies will be integrated throughout the problem-solving sections, so that students become familiar with using them in appropriate situations outside of the context of the lesson in which a particular strategy is introduced.

3. **Multiplication** – Students are re-introduced to the meaning of multiplication and its properties. They learn to recognize patterns in multiplication and to estimate products. They learn to multiply by two or three digits, and to work with zeros in the multiplier. They practice performing these operations manually and on a spreadsheet & calculator, including problems with money.

4. **Problem Solving Strategy: Uncover Hidden Information**– Students will review Sadlier’s 5-step problem-solving approach and learn a sixth strategy to try within the 5-step model: uncovering hidden information. Students will work through a variety of problems that can be solved by uncovering hidden information, for example:

Kenny swims 23 laps every day. How many laps did he swim in the months of September and October?

Reminder: Problems using formerly introduced strategies will be integrated throughout the problem-solving sections, so that students become familiar with using them in appropriate situations outside of the context of the lesson in which a particular strategy is introduced.

5. **Division / Order of Operations** – Students are re-introduced to the meaning of division and its properties. They learn to recognize patterns in division and to estimate quotients using compatible numbers. They learn to divide by single- and 2-digit numbers, including short division. They practice performing these operations manually and on a spreadsheet & calculator, including problems with money. Students are introduced to the order of operations.

6. **Problem Solving Strategy: Make a Table/Find a Pattern**– Students will review Sadlier’s 5-step problem-solving approach and learn a seventh strategy to try within the 5-step model: Make a Table/Find a Pattern. Students will work through a variety of problems that can be solved by making a table and finding a pattern for example:

A shop rents bicycles and 3-wheeled buggies. Every day Larry checks the 6-wheels on the 25 vehicles for safety. How many of each type of vehicle does he have?

Reminder: Problems using formerly introduced strategies will be integrated throughout the problem-solving sections, so that students become familiar with using them in appropriate situations outside of the context of the lesson in which a particular strategy is introduced.

7. **Number Theory and Fractions** – Students explore prime and composite numbers, factoring and finding the greatest common factor. Students learn to express fractions in higher or lower terms, and to find the least common denominator of two fractions. Students learn about mixed numbers, how to convert to & from fractions, and how compare and order fractions and mixed numbers.

8. **Problem Solving Strategy: Organized List**– Students will review Sadlier’s 5-step problem-solving approach and learn an eighth strategy to try within the 5-step model: Make a Table/Find a Pattern. Students will work through a variety of problems that can be solved by making an organized list, for example:

Elliot Pet Shop Houses a pair of puppies in each dog cage. If there are 6 different puppies: a shepherd, a collie, a poodle, a retriever, a terrier and a Dalmatian, how many pairs can be made?

Reminder: Problems using formerly introduced strategies will be integrated throughout the problem-solving sections, so that students become familiar with using them in appropriate situations outside of the context of the lesson in which a particular strategy is introduced.

9. **Fractions: Addition and Subtraction** – Students learn to add & subtract fractions and mixed numbers with unlike denominators using renaming and the lowest common denominator, and to add more than two fractions.
10. **Problem Solving Strategy: Working Backwards** – Students will review Sadlier’s 5-step problem-solving approach and learn a ninth strategy to try within the 5-step model: working backwards. Students will work through a variety of problems that can be solved by working backwards, for example:
At a bake sale Ms. Talbot sold $6\frac{1}{3}$ dozen muffins before lunch. After lunch, Mr. Vaner donated 2 dozen muffins. Mrs. Talbot sold another $7\frac{1}{2}$ dozen. Then she had $1\frac{1}{2}$ dozen muffins left. How many muffins did she have at the beginning of the sale?
 Reminder: Problems using formerly introduced strategies will be integrated throughout the problem-solving sections, so that students become familiar with using them in appropriate situations outside of the context of the lesson in which a particular strategy is introduced.
11. **Fractions: Multiplication and Division** – Students learn to multiply fractions & mixed numbers using cancellation. Students learn to divide fractions and mixed numbers using reciprocals.
12. **Problem Solving Strategy: Using Simpler Numbers** – Students will review Sadlier’s 5-step problem-solving approach and learn a tenth strategy to try within the 5-step model: using simpler numbers. Students will work through a variety of problems that can be solved by using simpler numbers, for example:
How many days will it take Paula to walk $6\frac{2}{3}$ miles if she walks $\frac{5}{6}$ mile every day?
 Reminder: Problems using formerly introduced strategies will be integrated throughout the problem-solving sections, so that students become familiar with using them in appropriate situations outside of the context of the lesson in which a particular strategy is introduced.
13. **Probability & Statistics** – Students learn about tree diagrams and independent and dependent events. They learn how to find averages and to collect and organize data. They learn to report and analyze data using simple line plots, bar graphs, line graphs and circle graphs.
14. **Problem Solving Strategy: Use a Model/Diagram** – Students will review Sadlier’s 5-step problem-solving approach and learn an eleventh strategy to try within the 5-step model: use a model/diagram. Students will work through a variety of problems that can be solved by using a model or diagram, for example:
Half of a class of 24 students have no pets. Four students have only dogs as pets, and five have only cats. The rest of the students have both a cat and a dog. How many students have both a cat and a dog?
 Reminder: Problems using formerly introduced strategies will be integrated throughout the problem-solving sections, so that students become familiar with using them in appropriate situations outside of the context of the lesson in which a particular strategy is introduced.
15. **Geometry** – Students will learn to measure and draw angles with a protractor. They will learn to identify angles and classify them as right, acute, obtuse and straight. They will be introduced to polygons, including special classes of quadrilaterals and triangles and to congruent figures. They will learn to calculate the perimeter of a variety of polygons, including rectangles. They will learn about lines of symmetry and will practice transformations of geometric figures in a plane.
16. **Problem Solving Strategy: Use Formulas** – Students will review Sadlier’s 5-step problem-solving approach and learn a twelfth strategy to try within the 5-step model: use formulas. Students will work through a variety of problems that can be solved by using formulas, for example:

The perimeter of a gazebo floor shaped like a regular octagon is 96 ft. What is the length of one side of the floor?

Reminder: Problems using formerly introduced strategies will be integrated throughout the problem-solving sections, so that students become familiar with using them in appropriate situations outside of the context of the lesson in which a particular strategy is introduced.

17. Measurement – Students learn to measure with and relate customary units of length, capacity and weight and to read Celsius and Fahrenheit temperature scales. They learn about units of time and time zones.

18. Problem Solving Strategy: Multi-Step Problem – Students will review Sadlier’s 5-step problem-solving approach and learn an thirteenth strategy to try within the 5-step model: multi-step problem. Students will work through a variety of problems that can be solved with multiple steps, for example:

Marina Petro worked from 8:15 a.m. to 5:30 p.m. on Monday. She spent 45 minutes for lunch. She was told she had worked only 7 hours. Marina disagreed and asked her employer to check her time card. Who was correct?

Reminder: Problems using formerly introduced strategies will be integrated throughout the problem-solving sections, so that students become familiar with using them in appropriate situations outside of the context of the lesson in which a particular strategy is introduced.

19. Decimals: Addition and Subtraction – Students learn to add and subtract decimals with multiple digits and to estimate decimal sums and differences by rounding or front-end estimation.

20. Problem Solving Strategy: Extra Information – Students will review Sadlier’s 5-step problem-solving approach and learn an fourteenth strategy to try within the 5-step model: extra information. Students will work through a variety of problems whole solutions are easier to discover if extra information is eliminated, for example:

The Blackstones drove 145.2 miles the first day and 203.9 miles on the second day of their vacation. They spent \$15 for gas each day. How many miles did they travel?

Reminder: Problems using formerly introduced strategies will be integrated throughout the problem-solving sections, so that students become familiar with using them in appropriate situations outside of the context of the lesson in which a particular strategy is introduced.

21. Decimals: Multiplication and Division – Students learn to multiply and divide by powers of ten and to estimate decimal products and quotients. They learn to multiply and divide multi-digit decimals by whole numbers and other decimals. They learn special strategies to deal with zeros in the multiplication and division of decimals. They learn to estimate in multiplication and division problems involving money.

22. Problem Solving Strategy: Write a Number Sentence – Students will review Sadlier’s 5-step problem-solving approach and learn an fifteenth strategy to try within the 5-step model: write a number sentence. Students will work through a variety of problems that can be solved by writing a number sentence, for example:

Each bag of peanuts at Mighty-Mac Circus holds .9 kg. How much is needed to fill 15 bags?

Reminder: Problems using formerly introduced strategies will be integrated throughout the problem-solving sections, so that students become familiar with using them in appropriate situations outside of the context of the lesson in which a particular strategy is introduced.

23. Metric Measurement, Area & Volume - Students learn to measure with and relate metric units of length, capacity and mass. Students learn to measure area of rectangles, other

parallelograms and triangles. Students learn to classify three-dimensional figures and to calculate volume of cubes.

- 24. Problem Solving Strategy: Draw a Picture** – Students will review Sadlier’s 5-step problem-solving approach and learn an sixteenth strategy to try within the 5-step model: draw a picture. Students will work through a variety of problems that can be solved by drawing a picture, for example:

Daryl drew a right triangle on grid paper. The length of its base was double the length of its height. Its area was 16 square units. If both dimensions were whole numbers, find its height and base.

Reminder: Problems using formerly introduced strategies will be integrated throughout the problem-solving sections, so that students become familiar with using them in appropriate situations outside of the context of the lesson in which a particular strategy is introduced.

- 25. Ratio, Proportion & Percent** – Students will learn to relate ratios to fractions and to use proportion in scale drawings and maps. Students will then relate fractions and ratios to percents and learn how to find the percent of a number.

- 26. Problem Solving: Combine Strategies** – Students will review Sadlier’s 5-step problem-solving approach and learn an seventeenth idea to try within the 5-step model: combine strategies. Students will work through a variety of problems that can be solved by combining strategies, for example:

Tasha decides to save some money. The first day she puts a nickel in a bank. Each day she plans to double the amount she put in the day before. How much money will she have saved in a week?

Reminder: Problems using formerly introduced strategies will be integrated throughout the problem-solving sections, so that students become familiar with using them in appropriate situations outside of the context of the lesson in which a particular strategy is introduced.

- 27. Problem Solving Strategy: Write an Equation** – Students will review Sadlier’s 5-step problem-solving approach and learn the eighteenth strategy to try within the 5-step model: write an equation. Students will work through a variety of problems that can be solved by writing an equation, for example:

In math class there are 19 boys. This is 5 less than the number of girls. How many girls are there in the math class?

Reminder: Problems using formerly introduced strategies will be integrated throughout the problem-solving sections, so that students become familiar with using them in appropriate situations outside of the context of the lesson in which a particular strategy is introduced.

Grade 7 – Benchmarks

By the end of grade 7 students can:

Problem Solving

1. Solve more complex word problems using a 5-step model: imagine, name, think, compute and check.
2. Solve word problems by applying the following strategies alone or in combination, as appropriate:
 - a. reasoning logically
 - b. interpreting the remainder
 - c. assessing whether there is adequate information
 - d. determining whether there is more than one solution
 - e. Guessing and testing
 - f. Uncovering hidden information
 - g. Making a table
 - h. Finding a pattern
 - i. Organizing a list
 - j. Working backwards
 - k. Using simpler numbers
 - l. Using a model or diagram
 - m. Using a formula
 - n. Dividing the problem into steps
 - o. Identifying extra information
 - p. Writing a number sentence
 - q. Drawing a picture
 - r. Writing an equation

Number Systems

1. Understand place value and can read and write numbers to the trillions and decimals to the millionths.
2. Use expanded form to express whole numbers to the millions and decimals to the millionths.
3. Add, subtract, multiply and divide whole numbers and decimals with multiple digits.
4. Use shortcuts when multiplying and dividing whole numbers and decimals by powers of ten.
5. Use rounding strategies to estimate sums, differences, products and quotients for whole numbers and decimals.
6. Define integers and absolute value; compare and order integers using a number line.
7. Add, subtract, multiply & divide integers.
8. Add, subtract, multiply & divide signed rational numbers.
9. Define sets of numbers using words and symbols.
10. Use Venn diagrams and other visual and symbolic mechanisms to show union and intersections of sets.
11. Solve simple inequalities using set notation.
12. Define and use exponents and bases for powers of 10.
13. Use standard and expanded form to express decimal numerals in powers of 10; define and use scientific notation.
14. Simplify complex fractions.
15. Use multiplication to find a fractional part of a number.
16. Change fractions and mixed numbers to decimals and vice versa.

Data Collection, Presentation and Analysis

1. Create a modular matrix to present data.
2. Describe patterns and symmetry in modular matrices.
3. Measure length, capacity and mass in customary and metric units; express equivalent quantities in smaller or larger units.
4. Relate metric units of length, capacity and mass to one another.
5. Use the counting principle and other mechanisms to determine the probability of a compound event.
6. Analyze and construct double line graphs and double bar graphs.
7. Define and use three measures of central tendency: mean, median and mode.
8. Create a simple database to store and access data.
9. Use ratios, proportions and rate pairs to solve problems with similar figures.
10. Construct scale drawings; use a scale to calculate distance on a map.
11. Change fractions and decimals to percents and vice versa.
12. Calculate the original number if given a percent.
13. Use percents and proportions in consumer math to calculate discounts, sales tax, commissions, interest, unit prices, and to create a simple budget.

Algebra & Geometry

14. Use variables to represent numbers.
15. Evaluate a mathematical expression if given values of the variables to substitute.
16. Translate English expressions into numerical or algebraic expressions.
17. Classify and give examples of the following algebraic expressions: monomials, polynomials, binomials and trinomials.
18. Use the order of operations in translating and evaluating mathematical and algebraic expressions if given values to substitute.
19. Define & use the law of exponents for multiplication and division.
20. Simplify polynomials by combining like terms.
21. Add & subtract, multiply & divide polynomials.
22. Divide polynomials by monomials.
23. Define and identify equations and inequalities.
24. Use inverse operations to solve simple algebraic equations.
25. Use formulas to solve simple problems involving missing dimensions.
26. Define, draw, and use symbols to represent the following: *point, line, segment, ray, angle* and *plane*
27. Define and draw complementary, supplementary, straight and vertical angles.
28. Construct angles, segments, angle & segment bisections, parallel lines, and perpendicular lines using a protractor.
29. Calculate the area of parallelograms, triangles and trapezoids.
30. Calculate the circumference and area of a circle.
31. Graph ordered pairs and simple linear equations on a coordinate grid.

Grade 7 – Curriculum

The grade 7 mathematics curriculum will build directly on the grade 6 curriculum. At the beginning of the 7th grade teachers will assess all students comprehensively on the grade 6 benchmarks. If teachers discover that there are skills for which most students need a review, teachers will conduct a review of these selected topics in the classroom setting. They will progress as soon as possible to the formal 7th grade curriculum described below.

Teachers will also use the initial assessment to construct individualized math plans for their students. Students will have two periods in addition to the five regular math periods a week, during which they will spend extra time on the math topics that give them the most difficulty. Students will work on their individualized plans through a computer-based program, overseen by instructors and tutors at a student/teacher ratio of approximately 12:1. (More advanced students can use this time to work on the challenging topics for which their peers are not yet ready).

The formal 7th grade curriculum will be largely devoted to 1) continuing to build student numeracy with complex problems involving decimals, fractions, ratios and percents, 2) to introducing students to more complex concepts in geometry, and 3) to giving students additional tools for data analysis and presentation. The final unit is a formal introduction to algebra. Unlike the algebra unit at the end of the 6th grade curriculum, the algebra-readiness unit this year will be mandatory. We believe it is critical to get students to start “thinking algebraically” as early as they are ready. By the end of the 7th grade students will have had two or three years in which to catch up and prepare themselves with basic math skills. The introduction to algebra, which is generally associated with high school, will empower students and help them to define themselves as “advanced.” It will be a distinct reward for the time and commitment that they will have devoted to math over the extended days and extended years of their early time at the Bronx Preparatory Charter School.

The 7th grade curriculum will explicitly prepare students to achieve the benchmarks described above by exploring the sequence of topics described in the enclosed attachment. Rather than re-create the sequence we have attached the table of contents for the primary 7th grade math text. In addition to listing the topics to be taught, the attachment demonstrates how applications of technology are incorporated into the course of lessons and how the five-step problem-solving approach is continuously refreshed and used.

Grade 8 – Benchmarks

By the end of grade 8 students can:

Problem Solving

1. Solve complex word problems using a 5-step model: imagine, name, think, compute and check.
2. Solve word problems by applying the following strategies alone or in combination, as appropriate:
 - a. reasoning logically
 - b. interpreting the remainder
 - c. assessing whether there is adequate information
 - d. determining whether there is more than one solution
 - e. Guessing and testing
 - f. Uncovering hidden information
 - g. Making a table
 - h. Finding a pattern
 - i. Organizing a list
 - j. Working backwards
 - k. Using simpler numbers
 - l. Using a model or diagram
 - m. Using a formula
 - n. Dividing the problem into steps
 - o. Identifying extra information
 - p. Writing a number sentence
 - q. Drawing a picture
 - r. Writing an equation

Number Systems

1. Define rational numbers and show subsets of rational numbers on a number line.
2. Add, subtract, multiply & divide signed rational numbers.
3. Solve equations with fractions.
4. Multiply and divide in scientific notation.
5. Use repeating and terminating decimals and convert them to fractions.
6. Square numbers and find simple square roots with a calculator or table.
7. Define the real number system and explain the difference between rational and irrational numbers.
8. Find the square root of numbers using the square root algorithm.
9. Find real number solutions for inequalities.
10. Define and use the Pythagorean Theorem to determine if a triangle is a right triangle and to calculate the missing length of a side.

Data Collection, Presentation and Analysis

11. Use basic principles of logic including connectives and conditionals. Construct truth tables to evaluate connectives and conditionals.
12. Use factorials to determine the number of permutations and combinations among groups of items.
13. Use ratios and rates and direct & inverse proportions to solve a variety of problems.
14. Make estimates using percents.
15. Calculate percent increase or decrease.
16. Use percents and proportions in consumer math to calculate profit & loss, rate of discount, sales price and list price, sales tax, paycheck deductions, income tax, rate of commission & total sales, simple & compound interest, and the cost of buying on credit.
17. Recognize patterns and sequences in data.
18. Perform and analyze an experiment involving random sampling.

19. Construct and analyze a scattergram, and determine whether there are positive or negative correlations between two sets of data.
20. Use appropriate levels of precision when calculating and presenting data.
21. Compare, use and convert between Celsius and Fahrenheit scales to measure temperature
22. Use a box-and-whisker plot to analyze data by plotting the mean and the range.
23. Use binary & hexadecimal numbers and understand their role in computers.
24. Construct and use a flowchart.

Algebra & Geometry

1. Use the order of operations to solve equations with more than one operation.
2. Define and use a formula to represent the three trigonometric ratios of a right triangle: tangent of an angle, sine of an angle and cosine of an angle.
3. Find sines, cosines and tangents using trigonometric tables and a scientific calculator.
4. Define congruent triangles and use three common rules for proving congruence: side-side-side, side-angle-side, and angle-side-angle.
5. Define and draw three-dimensional figures including polyhedrons, prisms, pyramids, cones cylinders & spheres.
6. Calculate surface area and volume of prisms, pyramids, cylinders, cones and spheres.
7. Calculate the area of irregular figures by dividing the figure into more familiar parts.
8. Graph ordered pairs and simple linear equations on the coordinate plane: four quadrants.
9. Solve systems of 2 equations by graphing.
10. Solve simultaneous equations by substitution and by addition and subtraction.

Grade 8 – Curriculum

The grade 8 mathematics curriculum will build directly on the grade 7 curriculum. At the beginning of the 8th grade teachers will assess all students comprehensively on the grade 7 benchmarks. If teachers discover that there are skills for which most students need a review, teachers will conduct a review of these selected topics in the classroom setting. They will progress as soon as possible to the formal 8th grade curriculum described below.

Teachers will also use the initial assessment to construct individualized math plans for their students. Eighth grade will be the final year of extra “basic skills” work, the two periods in addition to the five regular math periods a week, during which they spend extra time on the math topics that give them the most difficulty. As in years past, students will work on their individualized plans through a computer-based program, overseen by instructors and tutors at a student/teacher ratio of approximately 12:1. (More advanced students can use this time to work on the challenging topics for which their peers are not yet ready).

The 8th grade curriculum will explicitly prepare students to achieve the benchmarks described above by exploring the sequence of topics described in the enclosed attachment. The course of study will integrate the principles of algebra introduced at the end of the 7th grade curriculum with the work that students have been doing in number systems, geometry, data presentation & analysis, and geometry. Rather than re-create the sequence we have attached the table of contents for the primary 8th grade math text. In addition to listing the topics to be taught, the attachment demonstrates how applications of technology are incorporated into the course of lessons and how the five-step problem-solving approach is continuously refreshed and used.

The benchmarks will require that all students master the material up through lesson 7 of Chapter 14: solving systems of equations by substitution and by addition and subtraction. As an incentive to students (and teachers), we will develop a special certificate program and a “math prize” for all 8th grade math classes that succeed in surpassing the eighth grade benchmarks. The program will be a group incentive – all students must progress through these topics and demonstrate an understanding and ability to work with them. The decision to award the “math prize” will be based on the class’ mean results on a test of the 8th grade benchmarks. The math prize will be something of true value to eighth graders – gift certificates to a popular store and a trip to Great Adventure Amusement Park are the kinds of things that might be awarded.

Senior Academy Mathematics Standards of Learning

Algebra I & Geometry (Track A – 3 semesters; Track B – 4 semesters)

The standards below outline the content for a course in Algebra I & Geometry. All students are expected to achieve the Algebra I & Geometry standards. While the algebra and geometry standards are listed separately for presentation here, the curriculum will integrate concepts of algebra and geometry throughout. Students should be helped to make connections and to build relationships between algebra and arithmetic, geometry, and probability and statistics. Connections also should be made to other subject areas through practical applications. This approach to teaching algebra & geometry should help students attach meaning to the abstract concepts of algebra.

Throughout the course, students will be encouraged to talk about mathematics, to use the language and symbols of mathematics to communicate, to discuss problems and problem solving, and to develop their confidence in mathematics.

The course, among other things, includes the deductive axiomatic method of proof to justify theorems and to tell whether conclusions are valid. Methods of justification will include paragraph proofs, flow charts, two-column proofs, indirect proofs, coordinate proofs, and verbal arguments. A gradual development of formal proof is encouraged. Inductive and intuitive approaches also will be used.

Calculators, computers, and graphing utilities (graphing calculators or computer graphing simulators) will be used by the student to assist in problem solving and where feasible. Graphing utilities enhance the understanding of functions; they provide a powerful tool for solving and verifying solutions to equations and inequalities. Any available technology that will enhance student learning will be used.

Algebra Standards

The algebra standards require students to use algebra as a tool for representing and solving a variety of practical problems. Tables and graphs will be used to interpret algebraic expressions, equations, and inequalities and to analyze functions. Matrices will be used to organize and manipulate data.

1. The student will solve linear equations and inequalities in one variable, solve literal equations (formulas) for a given variable and apply these skills to solve practical problems. Graphing calculators will be used to confirm algebraic solutions.
2. The student will represent verbal quantitative situations algebraically and evaluate these expressions for given replacement values of the variables. Students will choose an appropriate computational technique, such as mental mathematics, calculator, or paper and pencil.
3. The student will justify steps used in simplifying expressions and solving equations and inequalities. Justifications will include the use of concrete objects, pictorial representations, and the properties of real numbers.
4. The student will use matrices to organize and manipulate data, including matrix addition, subtraction, and scalar multiplication. Data will arise from business, industrial, and consumer situations.
5. The student will analyze a given set of data for the existence of a pattern, represent the pattern algebraically and graphically, if possible, and determine if the relation is a function.
6. The student will select, justify, and apply an appropriate technique to graph a linear function in two

- variables. Techniques will include slope-intercept, x- and y-intercepts, graphing by transformation, and the use of the graphing calculator.
7. The student will determine the slope of a line when given an equation of the line, the graph of the line, or two points on the line. Slope will be described as rate of change and will be positive, negative, zero, or undefined. The graphing calculator will be used to investigate the effect of changes in the slope on the graph of the line.
 8. The student will write an equation of a line when given the graph of the line, two points on the line, or the slope and a point on the line.
 9. The student will solve systems of two linear equations in two variables, both algebraically and graphically, and apply these techniques to solve practical problems. Graphing calculators will be used as both a primary tool of solution and to confirm an algebraic solution.
 10. The student will apply the laws of exponents to perform operations on expressions with integral exponents, using scientific notation when appropriate.
 11. The student will add, subtract, and multiply polynomials and divide polynomials with monomial divisors, using concrete objects, pictorial representations, and algebraic manipulations.
 12. The student will factor completely first- and second-degree binomials and trinomials in one or two variables. The graphing calculator will be used as both a primary tool for factoring and for confirming an algebraic factorization.
 13. The student will estimate square roots to the nearest tenth and use a calculator to compute decimal approximations of radicals.
 14. The student will solve quadratic equations in one variable both algebraically and graphically. Graphing calculators will be used both as a primary tool in solving problems and to verify algebraic solutions.
 15. The student will determine the domain and range of a relation given a graph or a set of ordered pairs and will identify the relations that are functions.
 16. The student will, given a rule, find the values of a function for elements in its domain and locate the zeros of the function both algebraically and with a graphing calculator. The value of $f(x)$ will be related to the ordinate on the graph.
 17. The student will, given a set of data points, write an equation for a line of best fit, using the median fit method, and use the equation to make predictions.
 18. The student will compare multiple one-variable data sets, using statistical techniques that include measures of central tendency, range, stem-and-leaf plots, and box-and-whisker graphs.
 19. The student will analyze a relation to determine whether a direct or inverse variation exists and represent it algebraically and graphically, if possible.

Geometry Standards

The geometry standards include emphasis on two- and three-dimensional reasoning skills, coordinate and transformational geometry, and the use of geometric models to solve problems. A variety of applications and some general problem-solving techniques should be used to implement these standards, including algebraic skills.

1. The student will construct and judge the validity of a logical argument consisting of a set of premises and a conclusion. This will include:
 - Identifying the converse, inverse, and contrapositive of a conditional statement;
 - Translating a short verbal argument into symbolic form; diagramming arguments involving quantifiers (all, no, none, some), using Venn diagrams; and
 - Using valid forms of deductive reasoning, including the law of syllogism.

2. The student will use pictorial representations, including computer software and coordinate methods to solve problems involving symmetry and transformation. This will include:
 - using formulas for finding distance, midpoint, and slope;
 - investigating and determining whether a figure is symmetric with respect to a line or a point; and
 - determining whether a figure has been translated, reflected, or rotated.

3. The student will solve practical problems involving complementary, supplementary, and congruent angles that include vertical angles, angles formed when parallel lines are cut by a transversal, and angles in polygons.

4. The student will use the relationships between angles formed by two lines cut by a transversal to determine if two lines are parallel and verify, using algebraic and coordinate methods as well as deductive proofs.

5. The student will:
 - Investigate and identify congruence and similarity relationships between triangles; and
 - Prove two triangles are congruent or similar given information in the form of a figure or statement, using algebraic and coordinate as well as deductive proofs.

6. The student, given information concerning the lengths of sides and/or measures of angles, will apply the triangle inequality properties to determine whether a triangle exists and to order sides and angles. These concepts will be considered in the context of practical situations.

7. The student will solve practical problems involving right triangles by using the Pythagorean Theorem and its converse, properties of special right triangles, and right triangle trigonometry. Calculators will be used to solve problems and find decimal approximations for the solutions.

8. The student will:
 - investigate and identify properties of quadrilaterals involving opposite sides and angles, consecutive sides and angles, and diagonals;

- prove these properties of quadrilaterals using algebraic and coordinate as well as deductive proofs; and
 - use properties of quadrilaterals to solve practical problems.
9. The student will use measures of interior and exterior angles of polygons to solve problems. Tessellations and tiling problems will be used to make connections to art, construction, and nature.
 10. The student will investigate and use the properties of angles, arcs, chords, tangents, and secants to solve problems involving circles. Problems will include finding the area of a sector and applications of architecture, art, and construction.
 11. The student will construct, using a compass and straightedge, a line segment congruent to a given line segment, the bisector of a line segment, a perpendicular to a given line from a point not on the line, a perpendicular to a given line at a point on the line, the bisector of a given angle, and an angle congruent to a given angle.
 12. The student will make a model of a three-dimensional figure from a two-dimensional drawing and make a two-dimensional representation of a three-dimensional object. Models and representations will include scale drawings, perspective drawings, blueprints, or computer simulations.
 13. The student will use formulas for surface area and volume of three-dimensional objects to solve practical problems. Calculators will be used to find decimal approximations for results.
 14. The student, given similar geometric objects, will use proportional reasoning to solve practical problems; investigate relationships between linear, square, and cubic measures; and describe how changes in one of the measures of the object affect the others.
 15. The student will:
 - draw a system of vectors and find the resultant graphically, write the components of a vector as a column matrix, and find the resultant by matrix addition; and
 - solve practical problems using a system of vectors.

Mathematics Standards of Learning

Algebra II, Trigonometry and Mathematical Reasoning (Track A – Grade 10, Semester II and Grade 11, Semesters I & II)

The standards for this combined course in Algebra II, Trigonometry and Mathematical Reasoning include all of the standards listed for Algebra II and Trigonometry. This is a three-semester sequence for students on more the accelerated path that will enable them to take the AP Calculus exam at the end of the twelfth grade.

The Mathematical Analysis concepts presented in the course are intended not only to extend students' knowledge of function characteristics but also to introduce them to another mode of mathematical reasoning.

Graphing utilities (graphing calculators or computer graphing simulators) will be used by students and teachers. Graphing utilities enhance the understanding of realistic applications through modeling and aid in the investigation of functions and their inverses. They also provide a powerful tool for solving and verifying equations and inequalities. Any other technology that will enhance student learning will be used if available.

The content of this course will serve as appropriate preparation for a calculus course.

Algebra II & Trigonometry Standards

1. The student will identify field properties, axioms of equality and inequality, and properties of order that are valid for the set of real numbers and its subsets, complex numbers, and matrices.
2. The student will add, subtract, multiply, divide, and simplify rational expressions, including complex fractions.
 1. The student will:
 - Add, subtract, multiply, divide, and simplify radical expressions containing positive rational numbers and variables and expressions containing rational exponents; and
 - Write radical expressions as expressions containing rational exponents and vice versa.
2. The student will solve absolute value equations and inequalities graphically and algebraically. Graphing calculators will be used both as a primary method of solution and to verify algebraic solutions.
3. The student will identify and factor completely polynomials representing the difference of squares, perfect square trinomials, the sum and difference of cubes, and general trinomials.
4. The student will select, justify, and apply a technique to solve a quadratic equation over the set of complex numbers. Graphing calculators will be used for solving and confirming algebraic solutions.
5. The student will solve equations containing rational expressions and equations containing radical expressions algebraically and graphically. Graphing calculators will be used both as a primary tool for solving and confirming algebraic solutions.
6. The student will recognize multiple representations of functions (linear, quadratic, absolute value,

step, and exponential functions) and convert between a graph, a table, and symbolic form. A transformational approach to graphing will be employed through the use of graphing calculators.

9. The student will find the domain, range, zeros, and inverse of a function; the value of a function for a given element in its domain; and the composition of multiple functions. Functions will include those that have domains and ranges that are limited and/or discontinuous. The graphing calculator will be used as a tool to assist in investigation of functions including exponential and logarithmic.
10. The student will investigate and describe the relationships between the solution of an equation, zero of a function, x-intercept of a graph, and factors of a polynomial expression through the use of graphs.
11. The student will use matrix multiplication to solve practical problems. Graphing calculators or computer programs with matrix capabilities will be used to find the product.
12. The student will represent problem situations with a system of linear equations and solve the system, using the inverse matrix method. Graphing calculators or computer programs with matrix capability will be used to perform computations.
13. The student will solve systems of linear inequalities and linear programming problems and describe the results both orally and in writing. A graphing calculator will be used to facilitate solutions to linear programming problems.
14. The student will solve nonlinear systems of equations, including linear-quadratic and quadratic-quadratic, algebraically and graphically. The graphing calculator will be used as a tool to visualize graphs and predict the number of solutions.
15. The student will recognize the general shape of polynomial functions, locate the zeros, sketch the graphs, and verify graphical solutions algebraically. The graphing calculator will be used as a tool to investigate the shape and behavior of polynomial functions.
16. The student will investigate and apply the properties of arithmetic and geometric sequences and series to solve problems, including writing the first n terms, finding the n th term, and evaluating summation formulas. Notation will include sigma and 'a sub n '.
17. The student will perform operations on complex numbers and express the results in simplest form. Simplifying results will involve using patterns of the powers of i .
18. The student will identify conic sections (circle, ellipse, parabola, and hyperbola) from his/her equations. Given the equations in (h, k) form, students will sketch graphs, using transformations.
19. The student will collect and analyze data to make predictions, write equations, and solve practical problems. Graphing calculators will be used to scatter plots to determine the equation for a curve of best fit.
20. The student will solve practical problems involving a combination of direct and inverse variations.
21. The student will use the definitions of the six trigonometric functions to find the sine, cosine, tangent, cotangent, secant, and cosecant of an angle in standard position, given a point, other than the origin, on the terminal side of the angle. Circular function definitions will be connected with trigonometric function definitions.

22. The student, given the value of one trigonometric function, will find the values of the other trigonometric functions. Properties of the unit circle and definitions of circular functions will be applied.
23. The student will find the values of the trigonometric functions of the special angles and their related angles as found in the unit circle without the aid of a calculating utility. This will include converting radians to degrees and vice versa.
24. The student will use a calculator to find the value of any trigonometric function and inverse trigonometric function.
25. The student will verify basic trigonometric identities and make substitutions using the basic identities.
26. The student, given one of the six trigonometric functions in standard form (e.g., $y = A \sin(Bx + C) + D$, where A , B , C , and D are real numbers), will:
 - state the domain and the range of the function;
 - determine the amplitude, period, phase shift, and vertical shift; and
 - sketch the graph of the function by using transformations for at least a one-period interval.

The graphing calculator will be used to investigate the effect of changing A , B , C , and D on the graph of a trigonometric function.

27. The student will identify the domain and range of the inverse trigonometric functions and recognize the graph of these functions. Restrictions on the domains of the inverse trigonometric functions will be included.
28. The student will solve trigonometric equations that include both infinite solutions as well as restricted domain solutions and solve basic trigonometric inequalities. Graphing utilities will be used to solve equations, to check for reasonableness of results, and to verify algebraic solutions.
28. The student will identify, create, and solve practical problems involving triangles and vectors. Techniques will include using the trigonometric functions, the Pythagorean Theorem, the Law of Sines, and the Law of Cosines.

Mathematical Analysis Standards

1. The student will investigate and identify the characteristics of polynomial and rational functions and use these to sketch the graphs of the functions. This will include determining zeros, upper and lower bounds, y-intercepts, symmetry, asymptotes, intervals for which the function is increasing or decreasing, and maximum or minimum points. Graphing utilities will be used to investigate and verify these characteristics.
2. The student will perform operations, including composition and inversion of functions, and determine the domain and range of results. Continuity of functions and special functions such as absolute value, step functions, and piece-wise, will be included. Curve sketching and transformations will be included. Graphing utilities will be used to investigate and verify the graphs.

3. The student will use graphs to investigate and describe the continuity of functions. The functions will include piece-wise-defined and step functions.
4. The student will expand binomials having positive integral exponents through the use of the Binomial Theorem, the formula for combinations, and Pascal's Triangle.
5. The student will solve problems involving arithmetic and geometric sequences and series. This will include finding sum (sigma notation included) of finite and infinite convergent series that will lead to an intuitive approach to a limit.
6. The student will apply the method of mathematical induction to prove formulas/statements.
7. The student will find the limit of an algebraic function, if it exists, as the variable approaches either a finite number or infinity. A graphing utility will be used to verify intuitive reasoning, algebraic methods, and numerical substitution.
8. The student will apply the techniques of translation and rotation of axes in the coordinate plane to graphing functions and conic sections. A graphing utility will be used to investigate and verify the graphs. Matrices will be used to represent transformations.
10. The student will investigate and identify the characteristics of exponential and logarithmic functions in order to graph these functions and to solve equations and practical problems. This will include the role of e , natural and common logarithms, laws of exponents and logarithms, and the solution of logarithmic and exponential equations. Graphing utilities will be used to investigate and verify the graphs and solutions.
11. The student will investigate and identify the characteristics of the graphs of polar equations using graphing utilities. This will include classification of polar equations, the effects of changes in the parameters in polar equations, conversion of complex numbers from rectangular form to polar form and vice versa, and the intersection of the graphs of polar equations.
12. The student will perform operations with vectors in the coordinate plane and solve practical problems using vectors. This will include the following topics: operations of addition, subtraction, scalar multiplication, and inner (dot) product; norm of a vector; unit vector; graphing; properties; simple proofs; complex numbers (as vectors); and perpendicular components.
13. The student will use parametric equations to model and solve application problems. Graphing utilities will be used to develop an understanding of the graph of parametric equations.
14. The student will identify, create, and solve practical problems involving triangles and vectors. Techniques will include using the trigonometric functions, the Pythagorean Theorem, the Law of Sines, and the Law of Cosines.

Senior Academy Mathematics Standards of Learning

Advanced Placement Calculus (Grade 12, Track A)

This course is intended for students who have a thorough knowledge of analytic geometry and elementary functions in addition to college preparatory algebra, geometry, and trigonometry. The purpose of the course is to prepare the student for advanced placement in college calculus. These standards incorporate the 1995-1996 College Board Advanced Placement Course Description Syllabus. Teachers will update course content to align with future College Board publications.

As mandated by The College Board, graphing calculators will be required for this course. Computers will be used where feasible by the student and by the teacher. Any technology that will enhance student learning will be used if available. Instructional activities that engage students in solving application problems of varying complexities will be widely used.

1. The student will define and apply the properties of elementary functions, including algebraic, trigonometric, exponential, and composite functions and their inverses, and graph these functions using a graphing calculator. Properties of functions will include domains, ranges, combinations, odd, even, periodicity, symmetry, asymptotes, zeros, upper and lower bounds, and intervals where the function is increasing or decreasing.
2. The student will define and apply the properties of limits of functions. This will include limits of a constant, sum, product, quotient, one-sided limits, limits at infinity, infinite limits, and nonexistent limits.
3. The student will state the definition of continuity and determine where a function is continuous or discontinuous. This will include:
 - continuity at a point;
 - continuity over a closed interval;
 - application of the Intermediate Value Theorem; and
 - graphical interpretation of continuity and discontinuity.
4. The student will find the derivative of an algebraic function by using the definition of a derivative. This will include investigating and describing the relationship between differentiability and continuity.
5. The student will apply formulas to find the derivative of algebraic, trigonometric, exponential, and logarithmic functions and their inverses.
6. The student will apply formulas to find the derivative of the sum, product, quotient, inverse, and composite (chain rule) of elementary functions.
7. The student will find the derivative of an implicitly defined function.
8. The student will find the higher order derivatives of algebraic, trigonometric, exponential, and logarithmic functions.
9. The student will use logarithmic differentiation as a technique to differentiate nonlogarithmic functions.

10. The student will state (without proof) the Mean Value Theorem for derivatives and apply it both algebraically and graphically.
11. The student will use l'Hopital's rule to find the limit of functions whose limits yield the indeterminate forms:
- $0/0$ and infinity/infinity
 - For AP Calculus BC, these functions will also include functions whose limits yield the indeterminate forms:
 - 0 to the 0th power
 - 1 to the infinity power
 - infinity to the infinity power
 - infinity minus infinity
12. The student will apply the derivative to solve problems, including tangent and normal lines to a curve, curve sketching, velocity, acceleration, related rates of change, Newton's method, differentials and linear approximations, and optimization problems.
13. The student will find the indefinite integral of algebraic, exponential, logarithmic, and trigonometric functions. The special integration techniques of substitution (change of variables) and integration by parts will be included.
14. *AP Calculus BC will also include integration by trigonometric substitution and integration by partial fractions (only linear factors in the denominator).
15. The student will identify the properties of the definite integral. This will include the Fundamental Theorem of Calculus and the definite integral as an area and as a limit of a sum as well as the fundamental theorem:

The integral from a to x of $f(t)dt/dx = f(x)$

*AP Calculus BC will include composite functions defined by integrals, e.g.,

$f(x) =$ the integral from 0 to x squared of
e to the -t squared power d(t)

16. The student will apply the definite integral to solve problems. These problems will include finding distance traveled on a line and velocity from acceleration with initial conditions, growth and decay problems, solutions of separable differential equations, the average value of a function, area between curves, volumes of solids of revolution about the axes or lines parallel to the axes using disc/washer and shell methods, and volumes of solids with known cross-sectional areas.

17. The student will compute an approximate value for a definite integral. This will include numerical calculations using Riemann Sums and the Trapezoidal Rule.
18. The student will find the derivatives of vector functions and parametrically defined functions and use them to solve problems. The problems will include tangent and normal lines to parametrically defined curves, velocity and acceleration, and velocity and acceleration vectors for motion on a plane curve.
19. The student will use integration to solve problems. This will include areas bounded by polar curves, length of a path (including parametric curves), work (Hooke's law), and improper integrals.
20. The student will define and test for convergence of a series of real numbers and of functions. This will include geometric series, comparison (including limit comparison), ratio, root, and integral tests, absolute and conditional convergence, alternating series and error approximation, and p-series.
21. The student will define, restate, and apply power series. This will include addition, substitution, term-by-term differentiation and integration, interval of convergence, Taylor's series, Maclaurin series expansions, and Taylor polynomials with remainder and Lagrange error approximation.

Senior Academy Mathematics Standards of Learning

Algebra II – (Grade 11, Track B)

The standards below outline the content for a one-year course in Algebra II. Students enrolled in Algebra II are assumed to have mastered those concepts outlined in the Algebra I & Geometry standards. A thorough treatment of advanced algebraic concepts is provided through the study of functions, polynomials, rational expressions, complex numbers, matrices, and sequences and series. Emphasis will be placed on practical applications and modeling throughout the course of study. Oral and written communication concerning the language of algebra, logic of procedures, and interpretation of results also should permeate the course.

These standards include a transformational approach to graphing functions. Transformational graphing uses translation, reflection, dilation, and rotation to generate a "family of graphs" from a given graph and builds a strong connection between algebraic and graphic representations of functions. Students will vary the coefficients and constants of an equation, observe the changes in the graph of the equation, and make generalizations that can be applied to many graphs.

Graphing utilities (graphing calculators or computer graphing simulators) and spreadsheets will be used by students and teachers. Graphing utilities enhance the understanding of realistic applications through mathematical modeling and aid in the investigation and study of functions and their inverses. They also provide an effective tool for solving/verifying equations and inequalities. Any other available technology that will enhance student learning will be used.

1. The student will identify field properties, axioms of equality and inequality, and properties of order that are valid for the set of real numbers and its subsets, complex numbers, and matrices.
2. The student will add, subtract, multiply, divide, and simplify rational expressions, including complex fractions.
3. The student will
 - Add, subtract, multiply, divide, and simplify radical expressions containing positive rational numbers and variables and expressions containing rational exponents; and
 - Write radical expressions as expressions containing rational exponents, and vice versa.
4. The student will solve absolute value equations and inequalities graphically and algebraically. Graphing calculators will be used both as a primary method of solution and to verify algebraic solutions.
5. The student will identify and factor completely polynomials representing the difference of squares, perfect square trinomials, the sum and difference of cubes, and general trinomials.
6. The student will select, justify, and apply a technique to solve a quadratic equation over the set of complex numbers. Graphing calculators will be used for solving and confirming algebraic solutions.
7. The student will solve equations containing rational expressions and equations containing radical expressions algebraically and graphically. Graphing calculators will be used for solving and confirming algebraic solutions.
8. The student will recognize multiple representations of functions (linear, quadratic, absolute value,

step, and exponential functions) and convert between a graph, a table, and symbolic form. A transformational approach to graphing will be employed through the use of graphing calculators.

9. The student will find the domain, range, zeros and inverse of a function, the value of a function for a given element in its domain, and the composition of multiple functions. Functions will include those that have domains and ranges that are limited and/or discontinuous. The graphing calculator will be used as a tool to assist in investigation of functions, including exponential and logarithmic.
10. The student will investigate and describe the relationships between the solution of an equation, zero of a function, x-intercept of a graph, and factors of a polynomial expression through the use of graphs.
11. The student will use matrix multiplication to solve practical problems. Graphing calculators or computer programs with matrix capabilities will be used to find the product.
12. The student will represent problem situations with a system of linear equations and solve the system using the inverse matrix method. Graphing calculators or computer programs with matrix capability will be used to perform computations.
13. The student will solve systems of linear inequalities and linear programming problems and describe the results both orally and in writing. A graphing calculator will be used to facilitate solutions to linear programming problems.
14. The student will solve nonlinear systems of equations, including linear-quadratic and quadratic-quadratic, algebraically and graphically. The graphing calculator will be used as a tool to visualize graphs and predict the number of solutions.
15. The student will recognize the general shape of polynomial functions, locate the zeros, sketch the graphs, and verify graphical solutions algebraically. The graphing calculator will be used as a tool to investigate the shape and behavior of polynomial functions.
16. The student will investigate and apply the properties of arithmetic and geometric sequences and series to solve problems, including writing the first n terms, finding the n th term, and evaluating summation formulas. Notation will include sigma and 'a sub n '.
17. The student will perform operations on complex numbers and express the results in simplest form. Simplifying results will involve using patterns of the powers of i .
18. The student will identify conic sections (circle, ellipse, parabola, and hyperbola) from his/her equations. Given the equations in (h, k) form, students will sketch graphs of conic sections, using transformations.
19. The student will collect and analyze data to make predictions, write equations, and solve practical problems. Graphing calculators will be used to investigate scatterplots to determine the equation for a curve of best fit.
20. The student will identify, create, and solve practical problems involving a combination of direct and inverse variations.

Senior Academy Mathematics Standards of Learning

Trigonometry (Track B, Grade 12, Semester I)

The standards below outline the content for a one-semester course in trigonometry. A thorough treatment of trigonometry is provided through the study of trigonometric definitions, applications, graphing, and solving trigonometric equations and inequalities. Emphasis will be placed on using connections between right triangle ratios, trigonometric functions, and circular functions.

In addition, applications and modeling will be included throughout the course of study. Emphasis will be placed on oral and written communication concerning the language of mathematics, logic of procedure, and interpretation of results. Students enrolled in trigonometry are assumed to have mastered those concepts outlined in the Algebra II standards.

Graphing utilities (graphing calculators or computer graphing simulators) will be used by students and teachers. Graphing utilities enhance the understanding of realistic applications through modeling and aid in the investigation of trigonometric functions and their inverses. They also provide a powerful tool for solving/verifying trigonometric equations and inequalities. Any other technology that will enhance student learning will be used if available.

1. The student will use the definitions of the six trigonometric functions to find the sine, cosine, tangent, cotangent, secant, and cosecant of an angle in standard position, given a point, other than the origin, on the terminal side of the angle. Circular function definitions will be connected with trigonometric function definitions.
2. The student, given the value of one trigonometric function, will find the values of other trigonometric functions. Properties of the unit circle and definitions of circular functions will be applied.
3. The student will find the values of the trigonometric functions of the special angles and their related angles as found in the unit circle without the aid of a calculating utility. This will include converting radians to degrees and vice versa.
4. The student will use a calculator to find the value of any trigonometric function and inverse trigonometric function.
5. The student will verify basic trigonometric identities and make substitutions using the basic identities.
6. The student, given one of the six trigonometric functions in standard form (e.g., $y = A \sin (Bx + C) + D$, where A , B , C , and D are real numbers), will:
 - state the domain and the range of the function;
 - determine the amplitude, period, phase shift, and vertical shift; and
 - sketch the graph of the function by using transformations for at least a one-period interval.
 - The graphing calculator will be used to investigate the effect of changing A , B , C , and D on the graph of a trigonometric function.
7. The student will identify the domain and range of the inverse trigonometric functions and recognize the graph of these functions. Restrictions on the domains of the inverse trigonometric functions will be included.

8. The student will solve trigonometric equations that include both infinite solutions and restricted domain solutions and solve basic trigonometric inequalities. Graphing utilities will be used to solve equations, to check for reasonableness of results, and to verify algebraic solutions.
9. The student will identify, create, and solve practical problems involving triangles and vectors. Techniques will include using the trigonometric functions, the Pythagorean Theorem, the Law of Sines, and the Law of Cosines.

Senior Academy Mathematics Standards of Learning

Computer Mathematics (Elective)

This Computer Mathematics course is an elective open to any student who has completed the mathematics standards for graduation, or who will complete them through coursework taken concurrently. This course is not an alternative to any described on the preceding pages, but will be offered as a complement to any mathematics sequence. It will provide students with experiences in using the computer to solve problems that can be set up as mathematical models. Teachers in other mathematics courses will be encouraged to teach these skills through regular mathematics coursework, as well.

Even though computer ideas will be introduced in the context of mathematical concepts, problem solving per se will be developed in the most general sense, making the techniques applicable by students in many other environments. Strategies include defining the problem; developing, refining, and implementing a plan; and testing and revising the solution. Programming, ranging from simple programs involving only a few lines to complex programs involving subprograms, will permeate the entire course.

These standards identify fundamental principles and concepts in the field of computer science. Students will develop and refine skills in logic, organization, and precise expression that will enhance learning in other disciplines.

The standards that follow are separated into two groups: those related to programming concepts—Standards 1 through 21—and those dealing with mathematical applications—Standards 22 - 24. This separation is not intended to suggest that they will be treated separately in the instructional program. Programming concepts, problem-solving strategies, and mathematical applications will be integrated throughout the course.

Programming Standards

1. The student will describe the program development cycle: defining the problem, planning a solution, carrying out the plan, debugging the program, and providing program documentation.
2. The student will write program specifications that define the constraints of a given problem. These specifications include descriptions of pre-conditions, post-conditions, the desired output, analysis of the available input, and an indication as to whether or not the program is solvable under the given conditions.
3. The student will design a step-by-step plan (algorithm) to solve a given problem. The plan will be in the form of a program flowchart, pseudo code, a hierarchy chart and/or data flow diagram.
4. The student will use operating system commands, which include creating a new file, opening an existing file, saving a file, making a printed copy (hard copy) of the file, and executing a program.
5. The student will divide a given problem into manageable sections (modules) by task and implement the solution. The modules will include an appropriate user-defined function, subroutines, and procedures. Enrichment topics can include user-defined libraries (units) and object-oriented programming.
6. The student will design and implement the input phase of a program, which will include designing screen layout and getting information into the program by way of user interaction, data statements (BASIC), and/or file input. The input phase also will include methods of filtering out invalid data (error trapping).

7. The student will design and implement the output phase of a computer program, which will include designing output layout, accessing a variety of output devices, using output statements, and labeling results.
8. The student will design and implement computer graphics, which will include topics appropriate for the available programming environment as well as student background. Students will use graphics as an end in itself, as an enhancement to other output, and as a vehicle for reinforcing programming techniques.
9. The student will define simple variable data types that include integer, real (fixed and scientific notation), character, string, and Boolean.
10. The student will use appropriate variable data types, including integer, real (fixed and scientific notation), character, string, and Boolean. This will also include variables representing structured data types.
11. The student will describe the way the computer stores, accesses, and processes variables, including the following topics: the use of variables versus constants, variables addresses, pointers, parameter passing, scope of variables, and local versus global variables. This will also include use of terminology, including memory, CPU, RAM, ROM, baud, byte, bits, floppy disc, and hard drive.
12. The student will translate a mathematical expression into a computer statement, which involves writing assignment statements and using the order of operations.
13. The student will select and implement built-in (library) functions in processing data, which include trigonometric functions, absolute value functions, random number functions, end of line, end of file, and string.
14. The student will implement conditional statements that include if/then, if/then/else, case statements, and Boolean logic.
15. The student will implement a loop, including iterative loops, pretest loops, and post-test loops. Other topics will include single entry point, single exit point, preconditions, post-conditions and loop invariance.
16. The student will select and implement appropriate data structures, including arrays (one-dimensional and/or multidimensional), files, and records. Implementation will include creating the data structure, putting information into the structure, and retrieving information from the structure.
17. The student will implement pre-existing algorithms, including sort routines, search routines, and animation routines.
18. The student will test a program using an appropriate set of data. The set of test data should be appropriate and complete for the type of program being tested.
19. The student will debug a program using appropriate techniques (e.g., appropriately placed controlled breaks, the printing of intermediate results, and other debugging tools available in the programming environment), and identify the difference between syntax errors and logic errors.

20. The student will properly document a program including the preconditions and post-conditions of program segments, input/output specifications, the step-by-step plan, the test data, a sample run, and the program listing with appropriately placed comments.
21. The student will design, write, test, debug, and document a complete structured program which requires the synthesis of many of the concepts contained in previous standards.

Mathematical Applications

22. The student will solve practical consumer problems that involve analyzing and interpreting graphs, charts, and/or tables.
23. The student will solve mathematical problems using formulas, equations, and functions. Problems will include those related to geometry, business, and leisure (e.g., sports and recreational activities).
24. The student will solve probability, data analysis, and statistical problems.

New York State Mathematics, Science & Technology Standards (*review*)

- Standard 1: Students will use mathematical analysis, scientific inquiry, and engineering design, as appropriate, to pose questions, seek answers, and develop solutions.
- Standard 2: Students will access, generate, process, and transfer information using appropriate technologies.
- Standard 3: Students will understand mathematics and become mathematically confident by communicating and reasoning mathematically, by applying mathematics in real-world settings, and by solving problems through the integrated study of number systems, geometry, algebra, data analysis, probability & trigonometry.
- Standard 4: Students will understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science.
- Standard 5: Students will apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs.
- Standard 6: Students will understand relationships and common themes that connect mathematics, science, and technology and apply the themes to these and other areas of learning.
- Standard 7: Students will apply the knowledge and thinking skills of mathematics, science & technology to address real-life problems and make informed decisions.

Additional Science Standards at Bronx Preparatory Charter School

These standards are drawn largely from those developed by the Modern Red Schoolhouse.

Middle Academy Level

1. *Scientific Method and Scientific Exploration*: Students can design an investigation to test a hypothesis, control variables, and collect relevant data; use statistics, mathematical models, and available technology to present data; evaluate the validity of a hypothesis; and communicate the results of an investigation. Students can identify the central claims of a scientific argument and evaluate their validity, implications and consequences. Students can gather scientific information about a significant issue, evaluate each proposed solution, and make recommendations for a solution.
2. *Earth & Space Science*: Students can apply concepts of the structures and features of the earth, its crust and interior processes, its surface processes, and of the earth in space.
3. *Life Science (Biology)*: Students can apply the concepts of evolution; ecology; reproduction and genetic continuity; human growth, development and differentiation; energy, matter and organization, and dynamic equilibrium.
4. *Physical Science (Chemistry and Physics)*: Students can apply the concepts of matter, energy, the nature of physical and chemical change, motion and force, wave and light, and electricity and magnetism.

5. *Science and Technology*: Students can give examples of science linked to technological design and give examples of scientific investigation producing a technological solution to a social problem.

Senior Academy Level (Additional standards beyond those for the Middle Academy)

1. *Scientific Method and Exploration*: Students can develop questions to be explored experimentally; select a suitable test of a hypothesis; collect, record, manipulate and discuss data; evaluate the validity of a hypothesis; and communicate the results of an investigation. Students can identify the central claims of an argument and evaluate its validity, implications, and consequences. They can take into account possible bias of an author, credibility of sources, and the relevance, validity and sufficiency of evidence. Students can show that scientific knowledge is public, replicable, and subject to revision.
2. *Earth Science*: Students can analyze and apply concepts of geologic time, rock cycle, plate tectonics, hydraulic and atmospheric processes, and the evolution of the universe.
3. *Life Science (Biology)*: Students can analyze and apply concepts including the mechanisms of evolution and biodiversity, ecological interactions, matter cycles and energy flow, genetics and DNA, and cells and cell theory.
4. *Physical Science (Chemistry and Physics)*: Students can analyze and apply concepts including atomic models and bonds; energy transformations and conservation; chemical change such as acid-based reactions; equilibrium and momentum; and the characteristics of mechanical waves, sound and light.
5. *Science and Technology*: Students can illustrate the usefulness of scientific knowledge, explain the uses of and limits of technology, and evaluate the technological solutions to current problems.

Curriculum Overview - Science

The eight-year science requirement is designed to give students a solid grounding in scientific concepts and facts, and to give them numerous opportunities to practice the methods of scientific inquiry that expand human understanding of ourselves and the world & universe in which we live. The curriculum will consistently reinforce connections among the scientific fields. It will also challenge students to explore the ethical issues raised by real-world applications of the scientific principles about which they are learning. At the end of the sequence students will be prepared for college level work in the sciences.

The sequence will begin with a two-year course called *Scientific Investigation, Reasoning, and Logic*, which will introduce them to scientific thinking and methodology, as well as to a diverse array of topics in science. The remaining courses are yearlong investigations of a scientific field: Life Science (Grade 7), Physical Science (Grade 8), Earth Science (Grade 9), Biology (Grade 10), Chemistry (Grade 11) and Physics (Grade 12). All courses will be required for all students.

Curriculum content will be framed by a high-quality textbook, which will provide a launch point for a wealth of laboratory and other “real-world” experiences and experiments. Teachers and students will reach well beyond our walls, out into our community and the natural environment around us, to explore issues of science. Science teachers will structure their own scientific explorations in classroom laboratories, nearby parks, on the outdoor (but safely enclosed) rooftop space that we are considering turning into a greenhouse, and any other appropriate place. Plans for the senior academy building include a laboratory with a hood, running water and other permanent equipment, which will expand the possibilities for indoor lab work. Both middle academy and senior academy students will use that laboratory when it is complete.

The school will provide science teachers with resources to use to construct their lab and other science activities. An example of one of the best such resources is a web database called BiobioBase, which contains more than 50 laboratory experiments designed to accompany texts for general, organic, and biological chemistry courses. Each experiment contains an introduction, experiment information (time, equipment, notes), experimental procedures, study questions, report sheets, and problems. The authors, Robert Brenstein and Conrad Hinckley, both of Southern Illinois University at Carbondale, took several years to develop, class-test, and fine-tune each experiment offered in BiobioBase in order to ensure safety and quality. Their comprehensive instructional approach combines a number of techniques and methodologies, the most notable being modularization of experiments and the incorporation of teamwork, which has been met with much student success over the years.

We will also take advantage of offerings from outside organizations, in order to provide our students and teachers with unique experiences in the sciences. One example is a set of programs offered by the National Park Service and the Gateway Environmental Study Center. Their most comprehensive option is one called *Operation Explore*, which takes place periodically over a full year. This course for students in grades 4-6 introduces them to the interrelationships and interdependency of their home community, the seashore, farm and forest ecosystems. It includes a visit to the working farm at the Stony Kill Environmental Education Center and a three-day residential camping program at the Taconic Outdoor Education Center in Putnam County. A more modest endeavor that they offer is a two-hour ranger-led tour of the Jamaica Bay Wildlife Refuge that explores issues of interdependence and adaptation in nature using the tremendous diversity of life present there in the bay: salt marshes, woodlands and freshwater ponds. They offer these and all of their programs for very low fees or free of charge to schools that serve low-income children.

Scientific Investigation, Reasoning, and Logic (Grades 5 & 6) - Course Overview and Benchmarks for Learning

The fifth and sixth grade standards emphasize the importance of selecting appropriate instruments for measuring and recording observations. The organization, analysis, and application of data continue to be an important focus of classroom inquiry. Science skills from preceding grades, including questioning, using and validating evidence, and systematic experimentation, are reviewed or re-introduced at this level. Students are introduced to more detailed concepts of sound and light and the tools used for studying them. Key concepts of matter include atoms, molecules, elements, and compounds, and the properties of matter are defined in greater detail. The cellular makeup of organisms and the distinguishing characteristics of groups of organisms are stressed. Students will learn about the characteristics of the oceans and the Earth's changing surface.

The science learning benchmarks for the middle academy and for grade 9 Earth Science borrow heavily from those developed by the state of Virginia.

Scientific Investigation, Reasoning and Logic

1. The student will plan and conduct investigations in which

- appropriate instruments are selected and used for making quantitative observations of length, mass, volume, and elapsed time;
- rocks, minerals, and organisms are identified using a classification key;
- data are collected, recorded, and reported using the appropriate graphical representation (graphs, charts & diagrams);
- accurate measurements are made using basic tools (thermometer, meter stick, balance, graduated cylinder);
- predictions are made using patterns, and simple graphical data are extrapolated; and
- estimations of length, mass, and volume are made;
- hypotheses are stated in ways that identify the independent (manipulated) and dependent (responding) variables; and
- A method is devised to test the validity of predictions and inferences.

2. The student will demonstrate scientific reasoning and logic. Key concepts include

- ideas are investigated by asking for and actively seeking information;
- multiple tests of ideas are performed before accepting or rejecting them;
- alternative scientific explanations are analyzed; and
- conclusions are based on scientific evidence obtained from a variety of sources.

Force, Motion, and Energy

3. The student will investigate and understand how sound is transmitted and is used as a means of communication. Key concepts include

- frequency, waves, wavelength, resonance, vibration;
- the ability of different media (solids, liquids, gases) to transmit sound; and
- communication tools (voice, Morse code, sonar, animal sounds, musical instruments).

4. The student will investigate and understand basic characteristics of white light. Key concepts include

- the visible spectrum, light waves, reflection, refraction, diffraction, opaque, transparent, translucent;

- optical tools (eyeglasses, lenses, flashlight, camera, kaleidoscope, binoculars, microscope, light boxes, telescope, prism, spectroscope, mirrors); and
- historical contributions in understanding light.

Matter

5. The student will investigate and understand that matter is anything that has mass; takes up space; and occurs as a solid, liquid, or gas. Key concepts include
- atoms, molecules, elements, and compounds;
 - mixtures and solutions; and
 - effect of temperature on the states of matter.
6. The student will investigate and understand sources of energy and their transformations. Key concepts include
- potential and kinetic energy;
 - energy sources (fossil fuels, wood, wind, water, solar, and nuclear power); and
 - energy transformations (mechanical to electrical, electrical to heat/light, chemical to light, and chemical to electrical/light).
7. The student will investigate and understand that all matter is made up of atoms. Key concepts include
- atoms are made up of electrons, protons, and neutrons;
 - atoms of any element are alike but are different from atoms of other elements; and
 - historical development and significance of discoveries related to the atom.
8. The student will investigate and understand how to classify materials as elements, compounds, or mixtures. Key concepts include
- mixtures can be separated by physical processes;
 - compounds can only be separated by chemical processes; and
 - elements cannot be separated by physical or chemical means.
9. The student will investigate and understand that matter has physical and chemical properties and can undergo change. Key concepts include
- physical changes; and
 - changes in chemical composition, including oxidation reactions (rusting and burning), photosynthesis, and acid-base neutralization reactions.

Living Systems

10. The student will investigate and understand that organisms are made of cells and have distinguishing characteristics. Key concepts include
- parts of a cell;
 - five kingdoms of living things;
 - vascular and nonvascular plants; and
 - vertebrates and invertebrates.

Interrelationships in Earth/Space Systems

11. The student will investigate and understand characteristics of the ocean environment. Key concepts include

- geological characteristics (continental shelf, slope, rise);
- physical characteristics (depth, salinity, major currents);
- biological characteristics (ecosystems); and
- public policy decisions related to the ocean environment (assessment of marine organism populations, pollution prevention).

12. The student will investigate and understand the organization of the solar system and the relationships among the various bodies that comprise it. Key concepts include

- the sun, moon, Earth, other planets and their moons;
- relative size of and distance between planets;
- the role of gravity;
- revolution and rotation;
- the mechanics of day and night and phases of the moon;
- the relationship of the Earth's tilt and seasons;
- the cause of tides; and
- the history and technology of space exploration.

Earth Patterns, Cycles, and Change

13. The student will investigate and understand how the Earth's surface is constantly changing. Key concepts include

- the rock cycle including the identification of rock types;
- Earth history and fossil evidence;
- the basic structure of the Earth's interior;
- plate tectonics (earthquakes and volcanoes);
- weathering and erosion; and
- human impact.

Resources

14. The student will investigate and understand public policy decisions relating to the environment. Key concepts include

- management of renewable resources (water, air, plant life, animal life);
- management of nonrenewable resources (coal, oil, natural gas, nuclear power); and
- cost/benefit tradeoffs in conservation policies.

Life Science (Grade 7) - Course Overview and Benchmarks for Learning

The Life Science standards emphasize a more complex understanding of change, cycles, patterns, and relationships in the living world. Students build on basic principles related to these concepts by exploring the cellular organization and the classification of organisms; the dynamic relationships among organisms, populations, communities and ecosystems; and change as a result of the transmission of genetic information from generation to generation. Inquiry skills at this level include organization and mathematical analysis of data, manipulating variables in experimentation, and identifying sources of experimental error.

The science learning benchmarks for the middle academy and for grade 9 Earth Science borrow heavily from those developed by the state of Virginia.

1. The student will plan and conduct investigations in which
 - data are organized into tables showing repeated trials and means;
 - variables are defined;
 - SI (metric) units are used;
 - criteria are established for evaluating a prediction;
 - models are constructed to illustrate and explain phenomena;
 - sources of experimental error are identified;
 - dependent variables, independent variables, and constants are identified;
 - variables are controlled to test hypotheses and trials are repeated;
 - continuous line graphs are constructed, interpreted, and used to make predictions; and
 - interpretations from the same set of data are evaluated and defended.

2. The student will investigate and understand that all living things are composed of cells. Key concepts include
 - cell structure and organelles (cell membrane, cell wall, cytoplasm, vacuole, mitochondrion, endoplasmic reticulum, nucleus and chloroplast);
 - similarities and differences between plant and animal cells;
 - development of cell theory; and
 - cell division (mitosis and meiosis).

3. The student will investigate and understand that living things show patterns of cellular organization. Key concepts include
 - cells, tissues, organs, and systems; and
 - functions and processes of cells, tissues, organs, and systems (respiration, removal of wastes, growth, reproduction, digestion, and cellular transport).

4. The student will investigate and understand that the basic needs of organisms must be met in order to carry out life processes. Key concepts include
 - plant needs (light and energy sources, water, gases, nutrients);
 - animal needs (food, water, gases, shelter, space); and
 - factors that influence life processes.

5. The student will investigate and understand classification of organisms. Key concepts include
 - differences in number, color, size, shape, and texture of external and internal structures; and
 - variation in method of locomotion, obtaining nourishment, and reproduction.

6. The student will investigate and understand the basic physical and chemical processes of photosynthesis and its importance to plant and animal life. Key concepts include
- energy transfer between sunlight and chlorophyll;
 - transformation of water and carbon dioxide into sugar, water, and oxygen; and
 - photosynthesis as the foundation of food webs.
7. The student will investigate and understand that organisms within an ecosystem are dependent on one another and on nonliving components of the environment. Key concepts include
- interactions resulting in a flow of energy and matter throughout the system;
 - complex relationships in terrestrial, freshwater, and marine ecosystems; and
 - energy flow in food chains, food webs, and food pyramids.
8. The student will investigate and understand that interactions exist among members of a population. Key concepts include
- competition, cooperation, social hierarchy, territorial imperative; and
 - influence of behavior on population interactions.
9. The student will investigate and understand interactions among populations in a biological community. Key concepts include
- the relationship among producers, consumers, and decomposers in food chains and food webs;
 - the relationship of predators and prey;
 - competition and cooperation;
 - symbiotic relationships and niches; and
 - the role of parasites and their hosts.
10. The student will investigate and understand how organisms adapt to biotic and abiotic factors in a biome. Key concepts include
- differences between ecosystems and biomes;
 - characteristics of land, marine, and freshwater biomes; and
 - adaptations that enable organisms to survive within a specific biome.
11. The student will investigate and understand that ecosystems, communities, populations, and organisms are dynamic and change over time (daily, seasonal, and long term). Key concepts include
- phototropism, hibernation, and dormancy;
 - factors that increase or decrease population size; and
 - eutrophication, climate change, and catastrophic disturbances.
12. The student will investigate and understand the relationships between ecosystem dynamics and human activity. Key concepts include
- food production and harvest;
 - change in habitat size, quality, and structure;
 - change in species competition;
 - population disturbances and factors that threaten and enhance species survival; and
 - environmental issues (water supply, air quality, energy production, and waste management).
13. The student will investigate and understand that organisms reproduce and transmit genetic information to new generations. Key concepts include
- the role of DNA;
 - characteristics that can and cannot be inherited;

- genetic engineering and its applications; and
- historical contributions and significance of discoveries related to genetics.

14. The student will investigate and understand that organisms change over time. Key concepts include

- the relationships of mutation, adaptation, natural selection, and extinction;
- evidence of evolution of different species in the fossil record; and
- how environmental influences, as well as genetic variation, can lead to diversity of organisms.

Physical Science (Grade 8) – Course Overview and Benchmarks for Learning

The Physical Science standards continue to build on skills of systematic investigation with a clear focus on variables and repeated trials. Validating conclusions using evidence and data becomes increasingly important at this level. Students will plan and conduct research involving both classroom experimentation and literature reviews from written and electronic resources. Research methods and skills highlight practical problems and questions. Students will share their work using written reports and other presentations.

The Physical Science standards stress a more in-depth understanding of the nature and structure of matter and the characteristics of energy. The standards place considerable emphasis on the technological application of physical science principles. Major areas covered by the standards include the periodic table; physical and chemical changes; nuclear reactions; temperature and heat; sound; light; electricity and magnetism; and work, force, and motion.

The science learning benchmarks for the middle academy and for grade 9 Earth Science borrow heavily from those developed by the state of Virginia.

1. The student will plan and conduct investigations in which
 - length, mass, volume, density, temperature, weight, and force are accurately measured and reported using the International System of Units (SI - metric);
 - thermometers, metric rulers, graduated cylinders, and spring scales are used to gather data;
 - data from experiments are recorded and interpreted from bar, line, and circle graphs;
 - research skills are utilized using a variety of resources;
 - independent and dependent variables, constants, controls, and repeated trials are identified;
 - valid conclusions are made after analyzing data;
 - research methods are used to investigate practical problems and questions; and
 - experimental results are presented in appropriate written form.

2. The student will investigate and understand the basic nature of matter. Key concepts include
 - the particle theory of matter;
 - elements, compounds, mixtures, acids, bases, salts, organic, inorganic, solids, liquids, and gases;
 - characteristics of types of matter based on physical and chemical properties;
 - physical properties (shape, density, solubility, odor, melting point, boiling point, color); and
 - chemical properties (acidity, basicity, combustibility, reactivity).

3. The student will investigate and understand various models of atomic structure.

4. The student will investigate and understand how to use the periodic table of elements to obtain information. Key concepts include
 - symbols, atomic numbers, atomic mass, chemical families, periods, valence numbers, metals,
 - metalloids, and nonmetals; and
 - binary compounds (chemical activity, physical properties, formulas, and nature of bonding).

5. The student will investigate and understand changes in matter and the relationship of these changes to the Law of Conservation of Matter and Energy. Key concepts include
 - physical changes (effect of temperature on state, particle size on solubility, and temperature on solubility);

- nuclear reactions (products of fusion and fission and their effects on human beings and the environment); and
 - chemical changes (types of reactions, reactants and products, and balanced equations).
6. The student will investigate and understand states and forms of energy and how energy is transferred and transformed. Key concepts include
- potential and kinetic energy;
 - mechanical, chemical, and electrical energy; and
 - heat, light, and sound.
7. The student will investigate and understand temperature scales, heat, and heat transfer. Key concepts include
- absolute zero, phase change, freezing point, melting point, boiling point, conduction, convection, radiation, vaporization, and condensation; and
 - applications of heat transfer (heat engines, thermostats, and refrigeration).
8. The student will investigate and understand characteristics of sound and technological applications of sound waves. Key concepts include
- wave length, frequency, amplitude, interference; and
 - technological applications of sound.
9. The student will investigate and understand the nature and technological applications of light. Key concepts include
- reflection, refraction, particle theory, wave theory; and
 - electromagnetic spectrum.
10. The student will investigate and understand scientific principles and technological applications of work, force, and motion. Key concepts include
- work, force, mechanical advantage, efficiency, power, horsepower, gravitational force, speed/velocity, mass/weight, Newton's three laws of motion, acceleration; and
 - applications (simple machines, compound machines, powered vehicles, rockets, restraining devices, projectiles).
11. The student will investigate and understand basic principles of electricity and magnetism. Key concepts include
- static, current, circuits; and
 - magnetic fields and electromagnets.

Earth Science (Grade 9) - Course Overview and Benchmarks for Learning

The Earth Science standards connect the study of the Earth's composition, structure, processes, and history; its atmosphere, fresh water, and oceans; and its environment in space. The standards emphasize historical contributions in the development of scientific thought about the Earth and space. The standards stress the interpretation of maps, charts, tables, and profiles; the use of technology to collect, analyze, and report data; and science skills in systematic investigation. Problem solving and decision making are an integral part of the standards, especially as they relate to the costs and benefits of utilizing the Earth's resources. Major topics of study include plate tectonics, the rock cycle, Earth history, the oceans, the atmosphere, weather and climate, and the solar system and universe.

The science learning benchmarks for the middle academy and for grade 9 Earth Science borrow heavily from those developed by the state of Virginia.

1. The student will plan and conduct investigations in which
 - volume, area, mass, elapsed time, direction, temperature, pressure, distance, density, and changes in elevation/depth are calculated utilizing the most appropriate tools;
 - technologies, including computers, are used to collect, analyze, and report data and to demonstrate concepts and simulate experimental conditions;
 - scales, diagrams, maps, charts, graphs, tables, and profiles are constructed and interpreted;
 - variables are manipulated with repeated trials; and
 - a scientific viewpoint is constructed and defended.

2. The student will demonstrate scientific reasoning and logic by
 - analyzing how science explains and predicts the interactions and dynamics of complex Earth systems;
 - recognizing that evidence is required to evaluate hypotheses and explanations;
 - comparing different scientific explanations for the same observations about the Earth;
 - explaining that observation and logic are essential for reaching a conclusion;
 - evaluating evidence for scientific theories related to plate tectonics, the structure of the Earth, and its ancient age and origin; and
 - making informed judgments related to resource use and its effects on Earth systems.

3. The student will investigate and understand how to read and interpret maps, globes, models, charts, and imagery. Key concepts include
 - maps (bathymetric, geologic, topographic, and weather) and star charts;
 - imagery (aerial photography and satellite images);
 - direction and distance measurements on any map or globe; and
 - location by latitude and longitude and topographic profiles.

4. The student will investigate and understand the characteristics of the Earth including
 - plate tectonics;
 - water in all three states;
 - position of the Earth in the solar system; and
 - effects of density differences and energy transfer on the activities of the atmosphere, oceans, and Earth's interior.

5. The student will investigate and understand how to identify major rock-forming and ore minerals based on physical and chemical properties. Key concepts include
- properties including hardness, color and streak, luster, cleavage, fracture, and unique properties; and
 - uses of minerals.
6. The student will investigate and understand how to identify common rock types based on mineral composition and textures and the rock cycle as it relates to the transformation of rock types. Key concepts include
- igneous (intrusive and extrusive);
 - sedimentary (clastic and chemical); and
 - metamorphic (foliated and unfoliated) rocks.
7. The student will investigate and understand the differences between renewable and nonrenewable resources. Key concepts include
- fossil fuels, minerals, rocks, water, and vegetation;
 - advantages and disadvantages of various energy sources;
 - resources found in New York;
 - use of resources and their effects on standards of living; and
 - environmental costs and benefits.
8. The student will investigate and understand geologic processes including plate tectonics. Key concepts include
- processes (faulting, folding, volcanism, metamorphism, weathering, erosion, deposition, and sedimentation) and their resulting features; and
 - tectonic processes (subduction, rifting and sea floor spreading, and continental collision).
9. The student will investigate and understand how freshwater resources are influenced by geologic processes and the activities of humans. Key concepts include
- processes of soil development;
 - development of karst topography;
 - identification of groundwater zones including water table, zone of saturation, and zone of aeration;
 - identification of other sources of fresh water including aquifers with reference to the hydrologic cycle; and
 - dependence on freshwater resources and the affects of human usage on water quality.
10. The student will investigate and understand that many aspects of the history and evolution of the Earth and life can be inferred by studying rocks and fossils. Key concepts include
- traces or remains of ancient, often extinct, life are preserved by various means in many sedimentary rocks;
 - superposition, cross-cutting relationships, and radioactive decay are methods of dating bodies of rock;
 - absolute and relative dating have different applications but can be used together to determine the age of rocks and structures; and
 - rocks and fossils from many different geologic periods and epochs are found in New York.

11. The student will investigate and understand that oceans are complex, interactive physical, chemical, and biological systems and are subject to long- and short-term variations. Key concepts include
- physical and chemical changes (tides, waves, currents, sea level and ice cap variations, upwelling, and salinity concentrations);
 - importance of environmental, geologic, and economic implications;
 - systems interactions (energy transfer, weather, and climate);
 - features of the sea floor (continental margins, trenches, mid-ocean ridges, and abyssal plains) reflect tectonic processes; and
 - public policy issues concerning the oceans.
12. The student will investigate and understand the origin and evolution of the atmosphere and the interrelationship of geologic processes, biologic processes, and human activities on its composition and dynamics. Key concepts include
- scientific evidence for atmospheric changes over geologic time;
 - current theories related to the effects of early life on the chemical makeup of the atmosphere;
 - comparison of the Earth's atmosphere to that of other planets;
 - atmospheric regulation mechanisms; and
 - potential atmospheric compositional changes due to human, biologic, and geologic activity.
13. The student will investigate and understand that energy transfer between the sun, Earth, and the Earth's atmosphere drives weather and climate on Earth. Key concepts include
- observation and collection of weather data;
 - prediction of weather patterns; and
 - weather phenomena and the factors that affect climate.
14. The student will investigate and understand the planets and other members of the solar system; the history and contributions of the space program; and concepts related to the origin and evolution of the solar system, galaxy, and universe. Key concepts include
- characteristics of the sun, planets, their moons, comets, meteors, and asteroids; and
 - cosmology and the origin of stars and stellar systems (the Big Bang, the solar nebular theory, stellar evolution, star systems, nebulae, constellations, and galaxies).

Biology (Grade 10) - Course Overview and Benchmarks for Learning

The standards for Biology are designed to provide students with a detailed understanding of living systems. Emphasis continues to be placed on the skills necessary to examine alternative scientific explanations, actively conduct controlled experiments, analyze and communicate information, and acquire and use scientific literature. The history of biological thought and the evidence that supports it are explored and provide the foundation for investigating biochemical life processes, cellular organization, mechanisms of inheritance, dynamic relationships among organisms, and the change in organisms through time. The importance of scientific research that validates or challenges ideas is emphasized at this level.

In constructing the following benchmarks, we were very attentive to performance expectations for success on the Regents biology exam. The grade 10 biology course will give students the tools necessary for success on that measurement, and will prepare them for college-level coursework in biology.

Biology Benchmarks by Unit of Study

By the end of grade 10 students can

Similarity and Diversity in Living Things

1. Define life as a function of the life processes carried on by living organisms.
2. Describe the basis of the five-kingdom system of biological classification and describe the major characteristics of each of these kingdoms.
3. Describe the characteristics of the cell that enable it to operate as the basic structural and functional unit of living things.
4. Recognize the major types of chemical elements and compounds common to living things, and describe some of the chemical reactions in which they operate.
5. Describe some of the major tools and techniques used by biologists to study cells.
6. Recognize that within the diversity of living things there is an underlying pattern of unity based on the cell and its functions.

Life Functions of Living Things

7. List the major life functions carried on by living things, and describe how each life function contributes to the maintenance of steady state in the organism.
8. Identify the diverse adaptations present in living things for carrying out the basic life functions, and compare these adaptations among selected organisms.
9. Describe the way in which certain biochemical reactions correspond with physiological activities in living things.
10. Describe the ways in which the adaptations of living things complement their functions, allowing organisms to exist successfully in their environments.

The Functions of Human Beings

11. Describe the similarities between human beings and other animal groups in terms of their structure and function.
12. Determine the relationship between physiological function and proper nutrition.
13. List the major organs and organ systems of the human body, and describe their roles in the maintenance of homeostatic balance.
14. Describe the interdependence of the body's organ systems in the maintenance of life.
15. Define some of the malfunctions that they affect and their impact on the maintenance of homeostasis.

Reproduction and Growth of Living Things

16. Compare and contrast the processes of mitosis and meiosis, and describe their respective roles in the reproductive process.
17. Describe the process of fertilization and its role in maintaining the species chromosome number during sexual reproduction.
18. Compare and contrast the processes of sexual and asexual reproduction in terms of mechanism and result.
19. Describe the adaptations for sexual reproduction in both plants and animals and the ways in which they aid the reproductive process.

Understanding Genes and Heredity

20. Trace the history of genetic research from the work of Gregor Mendel to that of T.H. Morgan.
21. Describe the mechanisms governing the transmission of traits in terms of the gene-chromosome theory.
22. Describe the most common patterns of inheritance found in living things, and predict outcomes of genetic crosses in each pattern.
23. List and describe the principal forms of mutation as they relate to the production of variations and genetic disorders.
24. List some significant techniques of genetic research, and describe how they are used to aid genetic counseling.
25. Describe practical applications of theoretical genetics in the areas of plant and animal breeding.
26. Relate how the environment may influence the expression of genetic traits in human beings and other organisms.
27. Describe a few genetically related disorders that affect human beings.
28. Recognize the structure of the DNA molecule, and describe its role in the processes of replication and protein synthesis.
29. Describe the factors of inheritance studied in population genetics and the role of the Hardy-Weinberg principle in predicting gene frequencies.

Species and Evolution

30. Define evolution as a process by which living things change over long periods of time.
31. Understand the interrelationships among many branches of science that have provided observations and other evidence supporting evolutionary theory.
32. List and describe the principal evidences supporting modern scientific theories of evolution.
33. Describe the significant aspects of organic evolution presented in the major scientific theories of evolution.
34. Describe how modern science has theorized the events surrounding the early history of the earth and the early evolution of life.

Living Things and Their Environment

35. Explain the importance of interdependence of living things with each other and with their environments on the survival of all life on earth.
36. List and describe the various levels of ecological organization devised by ecologists in their study of the environment.
37. Describe the environmental factors responsible for the maintenance of the world environment, or ecosystem.
38. Describe the changes that normally occur over time to the characteristics of ecological communities in response to environmental pressures.
39. Describe how human beings, as part of the ecological community, affect and are affected by the balance of nature.

Laboratory Skills

40. Formulate a question or define a problem, and develop a hypothesis to be tested in an investigation.
41. Given a laboratory problem, select suitable lab materials, safety equipment and appropriate observation methods.
42. Distinguish between controls and variables in an experiment.
43. Identify parts of a light microscope and their functions, and focus in low and high power.
44. Determine the size of microscopic specimens in micrometers (microns).
45. Prepare wet mounts of plant and animal cells, and apply staining techniques using iodine and methylene blue.
46. Identify cell parts under the compound microscope, such as the nucleus cytoplasm, chloroplast, and cell wall.
47. Use and read measurement instruments, such as metric rules, centigrade thermometers, and graduate cylinders.
48. Dissect plant and animal specimens for the purpose of exposing major structures for suitable examination. Suggestions of specimens include seeds, flowers, earthworms, and grasshoppers.
49. Demonstrate safety skills involved in heating materials in test tubes or beakers, using chemicals, and handling dissection instruments.
50. Collect, organize, and graph data.
51. Make inferences and predictions based on data collected and observed.
52. Formulate generalizations or conclusions based on the investigation.
53. Assess the limitations and assumptions of the experiment.
54. Determine the accuracy and repeatability of the experimental data and observations.

Chemistry (Grade 11) - Course Overview and Benchmarks for Learning

The Chemistry standards are designed to provide students with a detailed understanding of the interaction of matter and energy. This interaction is investigated through the use of laboratory techniques, manipulation of chemical quantities, and problem-solving applications. Scientific methodology will be employed in experimental and analytical investigations, and concepts will be illustrated with practical applications.

Technology including graphing calculators and computers will be employed where feasible. Students will understand and use safety precautions with chemicals and equipment. The standards emphasize qualitative and quantitative study of substances and the changes that occur in them. In meeting the chemistry standards, students will be encouraged to share their ideas, use the language of chemistry, discuss problem-solving techniques, and communicate effectively.

In constructing the following benchmarks, we were very attentive to performance expectations for success on the Regents chemistry exam. The grade 11 chemistry course will give students the tools necessary for success on that measurement, and will prepare them for college-level coursework in chemistry.

Chemistry Benchmarks by Unit of Study

By the end of grade 11 students can:

Introduction to Chemistry

1. Define the terms *chemistry*, *matter*, *substance*, and *mixture*.
2. Distinguish among elements, compounds, and mixtures.
3. List the common metric units used in chemistry.
4. Name the most commonly used metric prefixes and their numerical equivalents.
5. Express numbers in scientific notation.
6. Perform simple operations on numbers expressed in scientific notation.
7. Define the terms *volume* and *density* as they apply to chemistry.
8. Understand the factor-label method (FLM) and use it to solve problems.
9. Use equations and graphs to solve problems.
10. List various forms of energy and name the units used by chemists to measure energy.
11. Solve problems involving the absorption, release, and transfer of energy.

The Language of Chemistry

12. Write the formulas for binary compounds and for compounds containing polyatomic ions.
13. Name binary compounds and compounds containing polyatomic ions using the Stock system.
14. Write word and formula equations for chemical reactions.
15. Balance simple formula equations.

The Phases of Matter

16. Distinguish among the solid, liquid, and gaseous phases of matter.
17. Define the term *standard temperature and pressure* (STP).
18. Describe and apply the various gas laws to numerical problems.
19. Convert between the Celsius and Kelvin temperature scales.
20. State the hypotheses of the kinetic-molecular theory (KMT) of gas behavior.
21. Define the term *ideal gas*, and the terms *volume*, *pressure*, and *absolute temperature* in relation to the KMT.
22. List the conditions under which real gases exhibit most nearly ideal and least ideal behavior.

23. Relate vapor pressure to the boiling point of a liquid.
24. Solve problems involving gases collected over water.
25. Define the terms associated with phase changes.
26. Interpret phase diagrams.
27. Define the terms *triple point*, *critical point*, *critical temperature*, and *critical pressure*.

Atomic Structure I: Models of the Atom

28. List the important subatomic particles and the principal nucleons.
29. Define and apply the terms *nucleon*, *atomic number*, *isotope*, *mass number*, and *atomic structure*.
30. Compare and contrast the Dalton, Thompson, and Rutherford models of atomic structure.
31. Describe the Bohr model and its relationship to atomic spectra.
32. Describe the modern quantum-mechanical model and its relationship to electron configuration.
33. Use the diagonal rule to predict the filling patterns of atoms.
34. Define and apply the terms *principal energy level*, *orbital*, *quantum number*, *sublevel*, *electron configuration*, *spin state*, *valance electron*, and *Lewis Structure (electron-dot diagram)*.

Atomic Structure II: The Nucleus and Nuclear Reactions

35. List the common nuclear particles and write their symbols.
36. Balance nuclear equations.
37. Define the terms *nuclide*, *natural radioactivity*, and *radioactive decay*.
38. Describe the various types of radioactive decay.
39. Explain how radioactive uranium-238 decays to the stable nuclide lead-206.
40. Indicate how radioactive emanations can be separated and detected.
41. Define the term *half-time* and solve simple half-time problems.
42. Describe the uses of radioactive isotopes.
43. Describe how nuclear reactions can be induced and indicate the role of accelerators in this process.
44. Define the term *nuclear fission* and describe how energy can be obtained from fission.
45. List the parts of a fission reactor and describe their functions.
46. Indicate the safety procedures used in the disposal of radioactive wastes.
47. Define the term *nuclear fusion* and explain the role of this process in energy production.

Chemical Periodicity

48. State the periodic law of Moseley.
49. Describe the general arrangement of the elements in the modern Periodic Table with regard to electron configuration.
50. Define the terms *covalent radius*, *van der Waals radius*, and *metallic atomic radius*.
51. Define the term *ionic radius* and indicate how the size of an ion compares with the size of its parent atom.
52. Describe how properties of metallic elements differ from those of nonmetallic elements.
53. Define the term *metalloid* and indicate which elements are metalloids.
54. Indicate how the following general properties of elements vary within the Periodic Table: metallic character, atomic size, ionization energy, electron affinity, ionic size, and electronegativity.
55. Compare and contrast the properties of the elements in the various representative groups of the Periodic Table.
56. Compare some of the properties of the transition elements with those of the representative elements.
57. Describe how the properties of the elements vary across a period.

The Chemical Bond

58. Explain how energy and stability are related to chemical bond formation.
59. Distinguish between ionic and covalent bonds.

60. Predict whether an interatomic bond is ionic or covalent.
61. Distinguish between polar and nonpolar bonds.
62. Describe coordinate covalent bonding.
63. Describe network and metallic bonding.
64. Define the terms *dipole*, *polar*, and *nonpolar* as they apply to molecules.
65. Describe how the polarity of a molecule is related to its symmetry.
66. Define the term *intermolecular force*.
67. Define and use the following terms as they apply to intermolecular attractions: *van der Waals forces*, *dipole-dipole attraction*, *hydrogen bonding*, and *London dispersion forces*.
68. Describe how molecule-ion attractions occur.
69. Relate chemical bond types to the properties of substances.

Organic Chemistry

70. Define the term *organic chemistry* and list the sources of organic materials
71. Compare various properties of organic compounds with those of inorganic compounds.
72. Describe the bonding of carbon in simple organic compounds and write structural formulas for such compounds.
73. Define Describe the bonding of carbon in simple organic compounds and write structural formulas for such compounds.
74. Define the term *hydrocarbon* and describe how hydrocarbons are obtained from petroleum.
75. Define the term homologous series.
76. Describe the alkane, alkene, alkyne, and benzene series of hydrocarbons in terms of their general formulas, structural formulas, isomers, and IUPAC names.
77. Describe, in terms of their structures and IUPAC names, the following organic oxygen compounds:
alcohol, aldehydes, ketones, ethers, and organic acids.
78. Describe the following organic nitrogen compounds: amines and amino acids.
79. Define the term *polymer*.
80. Describe the following organic reactions: substitutions, addition, fermentation, esterification, saponification, oxidation, condensation polymerization, and addition polymerization, and provide examples of these reactions.

The Mathematics of Chemistry

81. Calculate the formula mass of a substance.
82. Define the term *mole* in relation to number of particles, mass of a substance, and volume of an ideal gas at STP.
83. Calculate the molar mass of a substance.
84. Solve mole problems using the factor-label method.
85. Solve percent composition problems.
86. Calculate the empirical formula of a substance from its percent composition by mass.
87. Calculate the density of an ideal gas at STP.
88. Determine the molar mass of a substance from its gas density at STP.
89. Solve problems involving Graham's law.
90. Solve mole, mass, and volume, problems involving chemical equations.

Solutions

91. Define the terms *solution*, *solute*, and *solvent*.
91. Distinguish among solutions, suspensions, and colloidal dispersions, and provide examples of various types of solutions.
92. Define the terms *miscible*, *saturated*, *unsaturated*, *solubility*, and *supersaturation*.

93. Describe the factors that effect the solubility of a substance.
94. Interpret a solubility curve and solve problems involving solubility curves.
95. Describe how the concentration of a solution can be measured.
96. Define the terms *molarity* and *molality* and solve problems involving these expressions of concentration.
97. Describe how the solute affects the boiling point and the freezing point of a solution.
98. Solve problems involving freezing point depression and boiling point elevation.
99. Define the term *electrolyte* and indicate why solutions of electrolytes exhibit abnormal behavior.

Thermodynamics and Chemical Kinetics

100. Define the term *activation energy*.
100. Distinguish between exothermic and endothermic reactions.
101. Define the term *heat of reaction* and use the appropriate reference table.
102. Define the terms *heat of formation* and *formation reaction* and use the appropriate reference table.
103. Interpret a potential energy diagram.
104. Define the term *chemical kinetics*.
105. List and describe the factors that affect the rate of a reaction.
106. Define the term *spontaneous reaction* and list and describe the factors that drive spontaneous reactions.
107. Use the Gibbs free-energy change to predict whether a reaction is spontaneous.

Chemical Equilibrium

108. Define the term *dynamic equilibrium*.
109. Provide examples of phase and solution equilibrium.
110. Define the term *chemical equilibrium*.
State Le Chatelier's.
111. Use Le Chatelier's principle to determine the effects of concentration, a common ion, pressure, temperature, and the presence of a catalyst on systems in equilibrium.
112. Write equilibrium-constant expressions for chemical reactions.
113. Describe the effect of temperature on equilibrium constant.
114. Apply the principles of equilibrium to real-world processes.

Acids and Bases

115. Define acids and bases operationally.
116. State and apply the Arrhenius definitions of acids and bases.
117. State and apply the Bronsted-Lowry definitions of acids and bases.
118. Define the term *amphiprotic (amphoteric)* and apply the concept.
119. Solve acid-base titration problems.
120. Define the term *conjugate acid-base pairs and recognize these pairs*.
121. Relate ionization constant (K_a and K_b) to acid-base strength.
122. Solve K_w problems.
123. Define the term *pH* and apply the concept.
124. Indicate which salts are likely to produce acidic, basic, or neutral solutions when dissolved in water.

Redox and Electrochemistry

125. Define the term *oxidation number* and assign oxidation numbers to elements in compounds and polyatomic ions.
126. Formally define the terms *oxidation* and *reduction*.
127. Define the term *redox reaction and identify these reactions*.
128. Write oxidation and reduction half-reaction and ion-electron methods.
129. Draw and label a simple electrochemical cell with a salt bridge.

130. Describe electron and ion movements in a simple electrochemical cell.
131. Define the terms *standard reduction potential* and *standard oxidation potential*.
132. Use standard potentials to calculate the potential difference of an electrochemical cell operating under standard conditions.
133. Draw and label a simple electrolytic cell.
134. Describe the electrolysis of fused salts, water, and brine.
135. Describe the principles of electroplating.
136. Apply redox and electrochemistry to real-world applications.

Laboratory Activities

137. Which safety procedures are basic in the laboratory.
138. Which measuring devices are commonly used in the laboratory.
139. How measurement readings are taken and estimated.
140. What the terms *accuracy*, *precision*, and *significant digits (figures)* mean.
141. How measurements are added (or subtracted), multiplied (or divided), and rounded.
142. What the term *percent error* means, and how the percent error of a measurement is determined.
143. Which basic laboratory skills you should be familiar with.
144. Which equipment is common to most laboratories.
145. Which basic laboratory activities are the most common.
146. What general guidelines should be observed in constructing a laboratory report.

Physics (Grade 12) - Course Overview and Benchmarks for Learning

The Physics standards emphasize a more complex understanding of experimentation, the analysis of data, and the use of reasoning and logic to evaluate evidence. The use of mathematics, including algebra, inferential statistics, and trigonometry, is important, but conceptual understanding of physical systems remains a primary concern. Students build on basic physical science principles by exploring in depth the nature and characteristics of energy and its dynamic interaction with matter. Key areas covered by the standards include force and motion, kinetic molecular theory, energy transformations, wave phenomena and the electromagnetic spectrum, light, electricity, fields, and non-Newtonian physics. The standards stress the practical application of physics in other areas of science and technology and how physics affects our world.

In constructing the following benchmarks, we were very attentive to performance expectations for success on the Regents physics exam. The grade 12 physics course will give students the tools necessary for success on that measurement, and will prepare them for college-level coursework in physics.

Physics Benchmarks by Unit of Study

By the end of grade 12 students can

Introduction to Physics

1. State the fundamental quantities of measurement in the Systeme International (SI) and the metric units associated with them.
2. Perform calculations using scientific notation.
3. Determine the number of significant digits in a measurement.
4. Incorporate significant digits within calculations.
5. Determine the order of magnitude of a measurement.
6. Plot a graph from a series of data points.
7. Determine Proportional relationships within data.
8. Calculate the slope of a straight-line graph.
9. State the common mathematical relationship in a right triangle.

Motion in One Dimension

10. Define the terms *motion*, *distance*, *displacement*, *average velocity*, *speed*, *instantaneous velocity*, and *acceleration*, and state their SI units.
11. Solve problems involving average velocity and constant velocity.
12. Distinguish between average velocity and instantaneous velocity, and relate these terms to a position-time graph.
13. Solve problems involving the equations of uniformly accelerated motion.
14. Solve problems involving freely falling objects.
15. Interpret the data provided by motion graphs and solve problems related to them.

Forces and Newton's Laws

16. Define the term *force* and state its SI unit.
17. State Hooke's law, and use relevant data to measure a force.
18. State Newton's first law of motion.
19. Define the term *weight*, and relate it to Newton's second law of motion.
20. Define the term *normal force*.
21. Define the term *frictional force*, and solve simple problems involving kinetic friction.
22. Define the term *coefficient of kinetic friction*, and use it in the solution of problems.

23. State Newton's third law of motion, and apply it to common situations.

Vector Quantities and Their Applications

24. Define the terms *scalar* and *vector* and list scalar and vector quantities.
 25. Represent a vector quantity by an arrow drawn to scale.
 26. Relate the direction of a vector to compass directions.
 27. Define the term *resultant vector*.
 28. Add vector quantities (1) graphically and (2) algebraically.
 29. Relate vector subtraction to vector addition.
 30. Define the term *vector resolution*, and resolve a vector into its x - and y -components.
 31. Define the term *static equilibrium*.
 32. Solve static equilibrium problems.
 33. Identify and calculate the parallel and perpendicular components of an object's weight when the object is on an inclined plane.
 34. Solve problems involving motion on an inclined plane.
 35. Solve problems involving the motion of an object in two dimensions.

Circular Motion and Gravitation

36. Identify the direction of an object's velocity when it is undergoing uniform circular motion.
 37. Define the terms *centripetal acceleration* and *centripetal force*, and identify the directions of these quantities when an object undergoes uniform circular motion.
 38. State the equations for calculating centripetal force and centripetal acceleration.
 39. Solve problems involving uniform circular motion.
 40. Define the term *period of revolution* and relate it to the equations of uniform circular motion.
 41. State Kepler's three laws of planetary motion.
 42. State Newton's law of universal gravitation and solve problems related to it.
 43. Solve simple problems involving satellites in (a circular) orbit.
 44. Define the term *geosynchronous orbit*.
 45. Relate the weight to gravitational force.
 46. Describe the field concept of gravitation.
 47. Relate the strength of a gravitational field with the acceleration due to gravity.

Momentum and Its Conservation

48. Define the term *momentum*, and state its SI unit.
 49. Solve problems involving mass, velocity, and momentum.
 50. Define the term *impulse*, and state its SI unit.
 51. Relate impulse to change in momentum.
 52. Solve the impulse-momentum problems.
 53. Relate the law of conservation of momentum to Newton's third law of motion.

Work and Energy

49. Define the following terms: *kinetic energy*; *gravitational potential energy*; *elastic potential energy*; *partially inelastic collision*; *totally inelastic collision*; *elastic collision*; *simple machine*; *ideal mechanical advantage*, *actual mechanical advantage*; and *efficiency*.
 50. Define the term *work*, and state its SI unit.
 51. Solve problems involving power and work.
 52. State the equation for calculating kinetic energy, and solve problems using this equation.
 53. State the equation for calculating gravitational potential energy, and solve problems using this equation.
 54. Solve problems that relate changes in kinetic energy to changes in gravitational potential energy.

Internal Energy and the Properties of Matter

55. Define the following terms: *internal energy* and *temporary absolute zero*, *heat energy* and *specific heat*, and *pressure*.
56. State the fixed points on the Celsius temperature scale and the fixed point on the Kelvin temperature scale.
57. Relate Kelvin and Celsius temperatures, and solve problems involving this relationship.
58. State the equation that relates heat energy, specific heat, and temperature changes, and solve problems using this equation.
59. Define the term *thermal equilibrium*, and solve thermal equilibrium problems.
60. State the equation for Boyle's and Charles's laws, and solve problems using them.
61. Interpret graphs that illustrate Boyle's and Charles's laws.
62. State the equation for the combined gas laws, and solve problems using it.
63. Define the term *ideal gas*, and list the properties of an ideal gas according to the kinetic-molecular theory (KMT) of gas behavior.
64. Define pressure, volume, and temperature as they are explained by the KMT.
65. State the conditions under which real gases exhibit ideal behavior.
66. Define the terms *melting (fusion)*, *freezing*, *boiling (vaporization)*, *condensation*, *sublimation*, and *deposition* as they relate to phase changes.
67. Define the terms *heat of fusion* and *heat of vaporization*, and solve problems involving these quantities.
68. State the factors that affect the boiling and freezing points of a liquid.
69. Define the term *thermodynamics*, and state the three laws of their modynamics.

Static Electricity

70. Define the term *electric charge*, and state the SI unit for charge.
71. Relate neutral and charged objects to protons and electrons.
72. Explain how neutral objects may become charged by contact.
73. Solve problems involving elementary charges.
74. Define the terms *conductor*, *insulator*, and *grounding*.
75. Describe the difference between charging by induction and charging by conduction
76. Explain how an electroscope operates.
77. State the equation for Coulomb's law, and solve problems using the equation.
78. Define the term electric field, and describe how an electric field is represented by field lines.
79. Draw simple field configurations.
80. State the equation for measuring these quantities.
81. Define the term *electron-volt* and *electric potential*, and state the SI units for measuring these quantities.
82. Relate the electric field strength between oppositely charged parallel plates to the potential difference across them, and use this relationship to solve problems.
83. Describe Millikan's oil drop experiment and its contribution to the understanding of electric charge.
84. Define the term *capacitance*, and state its SI unit.
85. Solve simple capacitance problems.

Electric Current and Circuits

86. Define the term *electric current*, and state the SI unit for it.
87. Solve problems involving current, charge, and time.
88. Distinguish between conventional current and electron flow.
89. Define the term *resistance*, and state the SI unit for it.
90. Solve problems that relate current, potential difference, and resistance.
91. Relate the resistance of a material to its length, cross section, resistivity, and temperature.
92. Solve problems that relate resistivity, cross section, and length.

93. Define the terms *superconductor*, *series circuit*, and *parallel circuit*.
94. Draw the circuit symbols for a resistor and a source of potential difference.
95. State the equations for determining power and energy output in electric circuits, and solve problems using these equations.
96. State the relationships in a series circuit, and solve problems using these relationships.
97. State the relationships in a parallel circuit, and solve problems using these relationships.
98. Compare and contrast series and parallel circuits.
99. State Kirchhoff's rules as they apply to electric circuits.

Magnetism; Electromagnetism and its Applications

100. Define the term *magnet*, *north pole*, *south pole*, *temporary magnet*, *permanent magnet*.
101. Define the term *domain*, and describe how domains, contribute to the magnetic properties of a metal such as iron.
102. State the conventions for drawing magnetic field lines, and draw simple magnetic field configurations.
103. Define the term *magnetic induction*, and state the SI unit for magnetic induction (field strength).
104. Use an appropriate hand rule to describe the magnetic polarity of a current-carrying coil (solenoid).
105. State the factors that influence the magnetic induction in a straight wire and in a solenoid.
106. Use an appropriate hand rule to determine the force on a current carrying wire in an external magnetic field.
107. State the equation that determines the magnitude of the force on a current-carrying wire in an external magnetic field.
108. Describe the mutual effect of two parallel current-carrying wires.
109. Define the term *torque*, and describe how a torque arises as a result of a current-carrying loop in a magnetic field.
110. Describe the principle upon which a galvanometer operates.
111. Describe how a galvanometer may be converted into an ammeter or a voltmeter.
112. Describe how a direct-current motor is constructed.
113. Use an appropriate hand rule to determine the force on a charged particle moving in an external magnetic field.
114. State the equation that determines the magnitude of the force on a charged particle moving in an external magnetic field, and use this equation to solve related problems.
115. Describe the principal upon which mass spectrometry operates.
116. Describe how a potential difference may be induced across a conductor moving in a magnetic field.
117. Describe the construction and operation of a simple alternating-current generator.
118. State Lenz's law, and demonstrate how it applies to electromagnetic induction.
119. Define the term *electromotive force*, state Lenz's law, and define the term *back emf*.
120. Define the term *transformer*, and describe the principle upon which a transformer operates.
121. State the equations relevant to transformer operation, and apply them to the solution of problems.
122. Describe how electromagnetic waves may be produced from accelerating charges.

Waves and Sound

123. Define the terms *periodic wave*, *wave motion*, *transverse wave*, *longitudinal wave*, and *surface wave*, and provide examples of each.
124. Compare and contrast mechanical waves with electromagnetic waves.
125. Define the terms *period*, *frequency*, *amplitude*, and *wavelength*, and solve problems that relate these quantities to wave speed.
126. Use a diagram of a periodic wave to identify the following: crest, trough, amplitude, phase, and wavelength.

127. Define the term *reflection*, and apply the law of reflection.
128. Define the term *ray*, and apply it to various types of periodic waves.
129. Define the term *refraction*, and apply Snell's law.
130. Define the terms *constructive interference*, *destructive interference*, *resonance*, and diffraction.
131. Explain how interference can produce standing waves and beats.
132. Define the term Doppler effect, and explain this phenomenon.

Light and Geometric Optics

133. Define the term *polarization*, and explain why polarization distinguishes between transverse and longitudinal waves.
134. Explain how reflection of light produces an image in a plane mirror, and describe the characteristics of such an image.
135. Describe how images are produced by spherical mirrors, and use the mirror equations to solve problems relating to these images.
136. Draw ray diagrams that illustrate image formation by plane and curved mirrors.
137. Explain how light refracts as it passes from one medium to another.
138. Define the term *absolute index of refraction*, and solve problems using this concept.
139. State Snell's law in terms of absolute indices of refraction, and solve problems using this concept.
140. State Snell's law in terms of absolute indices of refraction, and solve problems using this equation.
141. Define the terms *critical angle* and *total internal reflection*, and relate them to Snell's law.
142. Define the term *dispersion*.
143. Explain how curved surfaces refract light.
144. Describe how images are produced by spherical lenses, and use the lens equations to solve problems relating to these images.
145. Define the terms *chromatic aberration* and *spherical aberration*, and describe these defects.
146. Describe the patterns produced when monochromatic light passes through a double-slit arrangement, and explain how these patterns are formed.
147. Apply the double-slit equation to the solution of problems.
148. Explain the difference between the pattern produced by a double-slit arrangement and that produced by a single-slit arrangement.
149. Define the term *thin-film interference*, and explain why soap bubbles and oil slicks produce colored patterns when illuminated by white light.
150. Define the term *laser*, and explain how laser light differs from ordinary light.

Solid-State Physics

151. Define the term *conductivity*, and classify solids by their abilities to conduct electricity.
152. Describe how the electron band theory of conduction distinguishes among conductors, insulators, and semiconductors.
153. Define the term *intrinsic semiconductor*, and explain how temperature affects the conductivities of semiconductors.
154. Define the term *extrinsic semiconductor*, and explain how the process of doping enhances the conductivity of materials such as silicon and germanium.
155. Define the terms *donor element*, *N-type semiconductor*, *acceptor element*, *positive hole*, and *P-type semiconductor*.
156. Describe the operation of a junction diode when it is forward biased and reversed biased.
157. Define the terms *P-N junction*, *electric field barrier*, *biasing*, and *avalanche*.
158. Describe how a diode can be used to rectify alternating current.
159. Describe the construction of *N-P-N* and *P-N-P* bipolar transistors and their uses in semiconductor circuits.
160. Define the term *integrated circuit* or *chip*.

Modern Physics

161. Define the term *quantum of energy*, and relate this term to Planck's constant.
162. Describe the photoelectric effect and Einstein's explanation of it.
163. Solve problems using Einstein's photoelectric equation.
164. Solve problems using Einstein's photoelectric equation.
165. Explain how the Compton effect supports the photon theory of light.
166. Calculate the momentum of photon, given its frequency or wavelength.
167. Define the term *matter wave*, and calculate the wavelength of a particle of matter when it is in motion.
168. Describe Rutherford's experiments involving the scattering of alpha particles by metallic foils and the model of the atom he proposed as a result of those experiments.
169. Explain why the Rutherford model did *not* provide a complete picture of the atom.
170. State the hypotheses that Bohr used in developing his model of the hydrogen atom.
171. Define the terms *ground state*, *excited state*, and *stationary state* as they apply to the Bohr model.
172. Describe how Bohr was able to explain the existence of line spectra.
173. Define the term *ionization*, and use the energy level diagrams for hydrogen and mercury to calculate the energies involved in various electron transitions.
174. Define the term *electron cloud*, and state why the cloud model was needed to provide a more nearly complete picture of the atom.
175. State the postulates of Einstein's special theory of relativity.
176. Define the terms *simultaneity*, *time dilation*, *twin paradox*, and *length contraction*, and apply the corresponding equations to solve problems in special relativity.

Nuclear Energy

177. Define the term *nucleon* and *distinguish between the two nucleons*.
178. Interpret the parts of nuclear symbol, and define the terms *atomic number*, *mass number*, and *isotope*.
179. Define the terms *mass defect* and *binding energy*, and explain how they contribute to the stability of the nucleus.
180. Explain how nuclear forces differ from gravitational and electromagnetic forces.
181. Describe how particle detectors are used in the study of nuclear physics.
182. Balance a nuclear equation.
183. List examples of nuclear reactions that occur naturally.
184. Interpret the uranium-238 decay series graph.
185. Define the term *half-life*, and solve problems involving half-lives.
186. Explain how particle accelerators are used to induce nuclear reactions.
187. Describe various types of induced nuclear reactions.
188. Describe the process of nuclear fission and the reactions by which it produces vast quantities of energy.
189. Describe the components of a fission reactor and the purposes for which each component is used.
190. Describe the process of nuclear fusion, and compare it with nuclear fission.
191. Describe how quarks are involved in nuclear structure.

New York State Social Studies Standards

- Standard 1:** *History of the United States and New York*
Students will use a variety of intellectual skills to demonstrate their understanding of major ideas, eras, themes, developments, and turning points in the history of the United States and New York.
- Standard 2:** *World History*
Students will use a variety of intellectual skills to demonstrate their understanding of major ideas, eras, themes, developments, and turning points in the world history and examine the broad sweep of history from a variety of perspectives.
- Standard 3:** *Geography*
Students will use a variety of intellectual skills to demonstrate their understanding of the interdependent world in which we live – local, national and global – including the distribution of people, places and environments over the earth’s surface.
- Standard 4:** *Economics*
Students will use a variety of intellectual skills to demonstrate their understanding of how the United States and other societies develop economic systems and associated institutions to allocate scarce resources, how major decision-making units function in the United States and other national economies, and how an economy solves the scarcity problem through market and non-market mechanisms.
- Standard 5:** *Civics, Citizenship and Government*
Students will use a variety of intellectual skills to demonstrate their understanding of the necessity for establishing governments; the governmental system of the United States and other nations; the United States Constitution; the basic civic values of American constitutional democracy; and the roles, rights, and responsibilities of citizenship, including avenues of participation.

Additional Social Studies Standards at Bronx Preparatory Charter School

Middle Academy Level

History of the United States and New York

Students can trace the historical, political and social development of the United States, with an emphasis on the American Revolution, slavery and the Civil War, westward expansion, immigration and industrial growth and the 20th Century. Students can identify the ideals, traditions and beliefs that unify the civic culture of the U.S. and identify contributions of various cultural traditions to American life. They can explain how these viewpoints are expressed in art and literature.

World History

Students can discuss the contributions of ancient civilizations like the Greeks, Romans, Egyptians, Mayans and Chinese to world history. They can discuss the role of religion in world history and cite specific examples from various periods and parts of the world. Students can reflect thoughtfully on what

it means to live in a free society and give examples from revolutions in different parts of the world when discussing different peoples' quest for freedom.

Geography

Students can use maps and globes to locate and describe natural and human regions using geographic references. They can give examples of how the physical and human characteristics of regions have affected their history. Students can identify and describe characteristics of the earth's major ecosystems and their relationships to each other. They can discuss the impact of human development and technological change on natural environments.

Economics

Students can identify different economic systems and evaluate how each addresses basic economic questions. They can give specific examples of how technology affects the economy.

Civics, Citizenship and Government

Students can summarize the powers of the federal, state and local governments in the US and the essential historical debates regarding their proper jurisdiction. They understand the roles of the three branches of the federal government and can give examples of important historical actions of each branch that continue to affect life today.

Historical Analysis

Students can collect, interpret, organize and evaluate information about a specific issue or problem, and explain the complex causes and consequences of an important event. They can make appropriate generalizations based upon historical themes or patterns in world and U.S. history. Students can consider American pluralism and identity by examining our nation's founding documents and later texts, grounding their interpretations and arguments in evidence from original texts.

Senior Academy Level

History of the United States and New York

Students can summarize the major themes and events of American history from the pre-colonial period to the present day. They can discuss the content and significance of major historical documents, including: *The Declaration of Independence, the United States Constitution, Madison's Federalist #10, Lincoln's Second Inaugural Address, and Martin Luther King's Letter From a Birmingham Jail*. They can summarize the content and effects of major Supreme Court decisions.

World History

Students can analyze and apply a broad base of knowledge of humans' history on the earth, including the ancestors of modern humans, the classical civilizations, the Middle Ages & Renaissance and the modern age up to the present day. Students can explain the origins, central ideas and global influences of the world's major religious traditions, including Buddhism, Islam, Hinduism, Judaism and Christianity. They can analyze works of art, music, architecture and literature using the contexts of the cultural and religious traditions of the cultures in which they were created.

Geography

Students can compare and contrast the physical and human characteristics of places using maps, globes and other data. They can develop and give evidence for hypotheses to explain physical and human change in the earth over time. Students can identify ways in which humans have adapted to the geography and cataclysmic upheavals of their region, and can discuss how the distribution of natural resources has affected humans' cultural, economic and political development.

Economics

Students can understand and use basic economic principles. They can use these concepts to evaluate and compare economies of the world in both present-day and historical contexts.

Civics, Citizenship and Government

Students can identify significant features of the American political process and compare it to the political processes of other countries.

Historical Analysis

Students can evaluate ideas about social organization and political and economic systems and can analyze the frequent causes of conflict within and among nations. Students can generate historical questions, gather information from primary and secondary sources, make appropriate generalizations backed up by historical evidence, and write and present an historical paper.

Social Studies Benchmarks – Grades 5 & 6

The following are the expectations for student learning in the 5th & 6th grade social studies course, an introduction to world civilizations and to three organizing themes that help scholars to understand them: government, religion & freedom. The course will be our own in-house creation, and we have taken special care here to construct very clear and specific benchmarks as a framework around which to design specific lesson plans and the materials that support them. Some of these benchmarks are modified versions of the history learning standards of the State of Virginia.

We have also integrated many of the school's technology benchmarks into the social studies section, as social studies research and writing provide a wonderful opportunity to use of these technology skills. The technology benchmarks, however, are not the unique responsibility of the social studies department. Students will practice technology skills in all subject areas.

By the end of grade 6 students can:

Content

1. Describe and analyze the history of ancient Egypt from the time of Menes (3000 BC) through the last Egyptian dynasty in about 350 AD, with emphasis on:
 - The influence of geography on Egyptian economic, social and political development, especially the role of the Nile River;
 - The role of the Pharaohs and their armies;
 - Egyptian religious beliefs and practices and the powers of the priests;
 - The construction of the Pyramids and the Great Sphinx;
 - Cultural and scientific contributions, including hieroglyphic writing;
 - The way in which historians learned about ancient Egypt through studying the interiors of the Pyramids.

2. Describe, analyze and evaluate the history of ancient Greece from about 2000 to 300 BC, with emphasis on:
 - The influence of geography on Greek economic, social and political development;
 - The social structure, significance of citizenship, and development of democracy in the city-state of Athens;
 - Greek mythology and religion;
 - The contributions of Greek philosophers (including Socrates, Plato, and Aristotle), playwrights, poets, historians, sculptors, architects, scientists and mathematicians.

3. Describe and analyze the history of the Chinese from the beginning of the Chou Dynasty in 1028 BC through the decline and conquering of China at the end of the T'ang Dynasty in 907 AD, with emphasis on:
 - The influence of geography on Chinese economic, social and political development;
 - The social structure and role of tradition in Chinese culture;
 - The roles of the Emperors and governmental structures;
 - The origins, traditions, customs and beliefs of Confucianism and Taoism;
 - The significance of Buddhism;
 - The construction of the Great Wall;
 - Contributions in art and architecture, technology, literature and written language; and

4. Describe, analyze, and evaluate the history of ancient Rome from about 700 BC to 500 AD, with emphasis on:
 - The influence of geography on Roman economic, social and political development;
 - The social structure, significance of citizenship, and development of democratic features in government of the Roman republic;
 - Roman mythology and religion;
 - The collapse of the Republic and the rise of imperial monarchs;
 - The origin, traditions, customs, beliefs and spread of Judaism and Christianity;
 - Contributions in art and architecture, technology and science, literature and history, language, religious institutions and the law.

5. Describe and analyze the history of the Mayas from 100 to 800 AD, with special emphasis on:
 - The influence of geography on Mayan economic, social and political development;
 - The practice of agriculture;
 - Culture and intellectual life of the cities;
 - Religious practices and the construction of the pyramids;
 - Contributions in mathematics, language, calendars, astronomy, art & architecture; and

6. Trace and analyze the development of major religious traditions, including Buddhism, Islam, Hinduism, Judaism and Christianity. Reflect thoughtfully on the cultural and theological differences among believers in various faiths. Describe and analyze selected historical periods where religious expansion and religious conflict have been important, including:
 - The early periods of Confucianism, Taoism and Buddhism;
 - The period preceding and following the origins of Christianity;
 - The birth of Islam and expansion of and conflict between the Muslim and Christian worlds from the 7th to the 11th century AD;
 - The Middle Ages; and
 - The exploration and colonization of the Americas.

7. Describe and analyze the 15th century “encounter” between the peoples of Europe, Africa and the Americas, with special emphasis on:
 - The roles of the explorers and conquistadors;
 - The encounter’s effects on people in Africa, the Americas and Europe;
 - The beginnings of the slave trade;
 - The introduction of new diseases; and
 - Social class systems in the colonized areas.

8. Discuss the concept of freedom from a variety of perspectives and define “revolution”. Describe and analyze the way in which people have defined and fought for freedom in the following places:
 - The Caribbean, especially the Dominican Republic & Puerto Rico
 - India
 - Kenya
 - Brazil
 - South Africa

Historical and Geographical Research and Analysis

1. Identify and interpret primary and secondary sources to make generalizations about events and life in selected periods in world history.
2. Identify, analyze and interpret global population distribution in the Middle Ages.
3. Compare on a map the contemporary political boundaries with the locations of past civilizations.
4. Identify and trace on a map the origin and spread of Judaism, Christianity, Islam and Buddhism up to 1000 AD.

Computers & Technology (responsibility of all departments)

1. Use basic technology skills, including keyboarding, choosing appropriate technology for their tasks, and using technological vocabulary like “cursor,” “software,” “memory,” “hard drive,” “disk drive,” and “CD-ROM.”
2. Process, store, retrieve and transmit electronic information by
 - Using appropriate search strategies with databases, CD-ROMs, videodisks and telecommunications;
 - Using electronic encyclopedias, almanacs, indexes and catalogs;
 - Using the internet to access information;
 - Describing advantages and disadvantages of various computer processing, storage, retrieval and transmission techniques.
1. Communicate through application software, as evidenced by his or her
 - Creating a 1-2 page document using word processing skills;
 - Using simple computer graphics and incorporating them into word-processed documents;
 - Using databases and spreadsheets to manage information and produce reports.

Social Studies Curriculum – Grades 5 & 6

The grades 5-6 social studies sequence is designed to give students an introduction to world civilizations and to some principles that help scholars to understand them. The curriculum uses three organizing themes, government, religion, and freedom, to organize study of selected historical periods and civilizations. Students will use knowledge of the abstract principles to help them understand some events, people and cultures that have shaped world history. Students who enter the school in grade 6 will complete a one-year version of the sequence, addressing the same themes but examining fewer examples.

The curriculum aims for thematic understanding and for depth. It will explore selected themes and selected historical contexts in the very big subject of world history. While the sequence does not ignore chronology, it does not aim to give students a complete overview of world history. This thematic introduction, however, will be preparation for the world history sequence in grades 9 & 10, which uses more purely chronological approach, covers considerably more historical material, and explores a larger number of issues.

The sequence will use a standard textbook to provide students with an introduction to the themes of world history and geography, an overall chronology, and a handy reference. No textbook, however, can presume to present students with a rich curriculum that brings to life historical events & cultures. Social studies teachers will flesh out the below-described themes with field trips to museums and other cultural institutions, projects that require students to behave like historians by researching and writing about a topic, simulations, films, myths and contemporary stories, mapping projects, technology projects and more. This introduction to social studies is designed to engage students in the process of learning about history, geography and culture. The content itself is important, but not as important as the content of the 7th – 12th grade social studies program. The teachers we hire will be skilled, experienced professionals, whom we will charge with creating exciting lessons that enable students to meet and exceed the above-described standards and benchmarks.

1a. Introduction to Society and Government

1b. Early Civilizations

- The Egyptians from 3000 BC to 350 BC
- The Greeks from 2000 to 300 BC
- The Chinese from 1000 BC to 900 AD
- The Romans from 700 BC to 500 AD
- The Mayans from 100 to 800 AD

2a. Introduction to World Religions

2b. Toward a More Connected Globe

- Jews, Christians & Muslims and a common Holy Land
- The Expansion of Islam
- The Middle Ages & the Crusades

3a. What does it Mean to be Free?

3b. Struggles for Freedom

- Colonization and Revolution in Asia, Africa & Latin America – Selected Examples (India, Kenya, the Dominican Republic, Puerto Rico)
- The History of Slavery in Brazil
- Apartheid in South Africa and its Defeat

Social Studies Benchmarks – Grades 7 & 8

The curriculum document that follows these benchmarks charts the American History curriculum sequence for the 7th & 8th grades recommended by the New York State Education Department. We will follow quite closely the content sequence and have enclosed it as Tab XV with this application submission as “our” curriculum. The document contains learning “objectives,” which we find helpful, but not compete as benchmarks. Many of the “objectives” aim for student investigation and understanding. Our goals are not only that students investigate and understand, but also that they can describe and *analyze* the events and issues presented in the curriculum. This set of benchmarks is, therefore, our effort to upgrade the learning objectives of the following curriculum sequence. We have often adapted history learning standards of the State of Virginia to do so.

We have also integrated many of the school’s technology benchmarks into the social studies section, as social studies research and writing provide a wonderful opportunity to use of these technology skills. The technology benchmarks, however, are not the unique responsibility of the social studies department. Student will practice technology skills in all subject areas.

By the end of grade 8 students can:

Content

Unit 1 – Global Heritage of the American People Prior to 1500

1. Describe and analyze life in pre-Columbian America, especially that of the Iroquois and Algonquian peoples of the northeast, with specific reference to:
 - The influence of geography and climate on their way of life; and
 - Their social and economic characteristics, such as language, child rearing practices, gender roles, government, foods, arts, religious and spiritual beliefs, settlement patterns, and conceptions of land ownership.

Unit 2 – European Exploration and Colonization of the Americas

2. The student will trace the routes of and evaluate early explorations of the Americas, in terms of
 - The motivations, obstacles and accomplishments of the sponsors and leaders of key explorations from Spain, France, Portugal and England;
 - The political, social and economic impact of explorers’ arrival on Native Americans;
 - The economic, ideological, religious and nationalist forces that led to competition among European powers for control of North America.
3. The student will describe and analyze colonial America, with emphasis on
 - The factors that led to the founding of the colonies, including escape from religious persecution, economic opportunity, release from prison, and military adventure;
 - Geographic, political, economic and social contrasts among the three regions of New England, the mid-Atlantic and South;
 - Life in the colonies in the 18th century from the perspectives of farmers, slaves, free blacks, large landowners, women, artisans, and members of different religious groups;
 - The principal economic and political systems that were being developed and their connections with England.

Unit 3 – A Nation is Created

4. The student will describe and analyze the causes of, events of, and effects of the American Revolution, with emphasis on
 - The sources of colonists’ dissatisfaction;

- Key events and individuals in the American revolution, including John Adams, Samuel Adams, Paul Revere, Benjamin Franklin, George Washington, Thomas Jefferson, Patrick Henry, Thomas Paine, King George, Lord North and Lord Cornwallis;
- Major military campaigns of the Revolutionary War and reasons why the colonies were able to defeat the British.

Unit 4 – Experiments in Government

5. Describe and analyze the structures of government created by the Articles of Confederation, with particular emphasis on weaknesses that led to the demand for a stronger federal structure.
6. Analyze the United States Constitution and the Bill of Rights, in terms of
 - The British and American heritage, including the Magna Carta, the English Bill of Rights, the Mayflower Compact and the Articles of Federation;
 - The philosophy of government expressed in the Declaration of Independence;
 - The powers granted to the Congress, the President, the Supreme Court, and those reserved to the states;
 - The irony of the compromise on slavery; and
 - The significance of the document and the process of its writing and adoption beyond its time and place.
7. Describe and analyze the New York State Constitution; compare and contrast its development and structure with that of the US Constitution.
8. Describe and analyze challenges faced by the new United States government in the ratification of a new constitution and the addition of a Bill of Rights.

Unit 5 - Life in the New Nation

9. Describe and analyze challenges faced by the United States government in its first years, with emphasis on
 - Major issues facing Congress and the first four presidents;
 - Conflicts between Thomas Jefferson and Alexander Hamilton that led to the emergence of two political parties; and
 - The relative importance of domestic and international policies at different points in time, and the role that the United States played in international politics of the period.
10. The student will describe and analyze growth and change in America from 1801 to 1861, with emphasis on
 - Territorial exploration, expansion and settlement, including the Louisiana Purchase, the Lewis & Clark expedition, and the acquisition of Florida, Texas, Oregon & California;
 - How the effects of geography, climate, canals and river systems, economic incentives and frontier spirit influenced the distribution and movement of people, goods and services;
 - The principal relationships between the United States and its neighbors (current Mexico and Canada) and the European powers (including the Monroe Doctrine), and the way in which those relationships influenced expansion westward;
 - The impact of inventions, including the cotton gin, McCormick reaper, steamboat, and steam locomotive on life in America; and
 - The nature and effects of movement toward an industrial economy;
 - The development of an “American Consciousness” during Andrew Jackson’s administration;
 - Evolving views on family roles, education, the institution of slavery;
 - The development of money, saving and credit.

Unit 6 - Division and Reunion

11. Identify and analyze key causes, key events, and effects of the Civil War and Reconstruction, with emphasis on

- Economic, philosophical and moral differences between the North and South, as exemplified by such people as Daniel Webster & John C. Calhoun;
- Events and social forces leading to secession and war, including emotional impact of slavery, the Mexican War, territorial expansion and failure of political compromise;
- The actions of leaders on both sides of the war, including Abraham Lincoln, Ulysses S. Grant, Jefferson Davis, Robert E. Lee, Frederick Douglass and William Lloyd Garrison;
- Military advantages and disadvantages of each side;
- Critical developments in the war, including major battles, the Emancipation Proclamation, and Lee's surrender at Appomattox;
- The enormous human suffering and loss of life in the war;
- Life on the battlefield and on the homefront;
- Basic provisions and postwar impact of the 13th, 14th, and 15th Amendments to the United States Constitution;
- The impact of Reconstruction policies on the South;
- The role of New York State in the war.

Unit 7 - An Industrial Society

12. Explain and analyze how, following the Civil War, tremendous immigration and migration, combined with the rise of big business, heavy industry and mechanized farming transformed American life, with emphasis on

- Western settlement and changing federal policy toward Native Americans;
- The "Great Migration" African Americans from the rural south to the Northern cities;
- Why various immigrant groups came to America, the challenges they faced, and the importance of their contributions; and
- The growth of American cities, including the impact of racial and ethnic conflict and the role of political machines.

13. Explain and analyze Americans' responses to industrialization and urbanization, with emphasis on

- Muckraking literature and the rise of the Progressive Movement;
- Women's suffrage and the temperance movements and their impacts on society;
- Child labor, working conditions, and the rise of organized labor;
- Political changes at the local, state and national levels;
- The response of the farmer to industrialization and the closing of the frontier;
- Improvements in standards of living and life expectancy, and the emergence of the modern family and a greater variety of leisure experiences.

Unit 8 - The United States as an Independent Nation in an Increasingly Interdependent World

14. Describe and analyze the changing role of the United States in world affairs between 1898 and 1930, with emphasis on

- The growth of imperialist sentiment and belief in "Manifest Destiny,"
- The Spanish-American War;
- The Panama Canal and Theodore Roosevelt's "Big Stick Diplomacy;"
- The United States' role in WWI
- The Versailles Treaty and League of Nations; and
- Tariff barriers to world trade.

Unit 9 – The United States between the Wars

15. Describe and analyze the events and ideas of the 1920s and 1930s, with emphasis on

- Literature, music, dance and entertainment;
- The Harlem Renaissance;
- The rise of a “consumer culture,” and impact of the automobile;
- Prohibition, speakeasies and bootlegging;
- The impact of women’s suffrage;
- The rise of hate groups and response of new organizations to fight discrimination (NAACP)
- Racial tensions and labor strife;
- Urban and rural electrification.

16. Explain and analyze the Great Depression and its effects, with emphasis on

- Weaknesses in the economy, the collapse of financial markets in the late 1920s, and other events that triggered the great crash;
- The extent and depth of business failures, unemployment and poverty;
- The New Deal and its impact on the Depression and the future role of government in the economy; and
- Personalities and leaders of the period, Will Rogers, Father Coughlin, Eleanor and Franklin Roosevelt and Charles Lindbergh.

Unit 10 – The US Assumes Worldwide Responsibilities

17. Explain and analyze the major causes, events, personalities and effects of World War II, with emphasis on

- The rise of Fascism, Nazism and Communism in the 1930s and 1940s and the response of Europe and the United States;
- Aggression in Europe and the Pacific;
- Failure of the policy of appeasement;
- The horror of the Holocaust;
- New technology of war including the Atom Bomb;
- Major battles of World War II and the reasons for Allied victory;
- Human, physical and economic effects of the war; and
- Major changes in Eastern Europe, the Middle East, China, Southeast Asia and Africa following the war.

Unit 11 – The Changing Nature of the American People from World War II to the Present

18. Describe and analyze the economic, social and political transformation of the United States since World War II, with emphasis on

- Segregation, desegregation and the Civil Rights Movement;
- The changing role of women in America and the feminist movement;
- The technology revolution and its impact on communication, transportation and new industries;
- Growth of suburbs and a more youth-centered culture;
- The consumer economy and increasing global markets;
- Immigration;
- The impact of governmental social and economic programs and the Cold War on the role of the federal government, and the role of the Federal Reserve System;
- Effects of organized religious activism;

- Political leaders of the period, trends in national elections, and differences between the two major parties.

19. Describe and analyze United States foreign policy since World War II, with emphasis on

- The Cold War and the policy of communist containment;
- Confrontations with the Soviet Union in Berlin and Cuba;
- Nuclear weapons and the arms race;
- McCarthyism and the fear of communist influences in the United States;
- NATO and other alliances, and the US role in the United Nations;
- Military conflicts in Korea, Vietnam and the Middle East,; and
- The collapse of communism in Europe and the rise of new challenges.

Unit 12 – Citizenship in Today's World

20. Describe and analyze the rights and responsibilities of citizens in government at the federal, state and local levels.
21. Compare the meaning of citizenship and participation in the US with other countries.
22. Define for themselves and discuss thoughtfully the meanings of civility, citizenship, peace, justice, equality, human rights and democracy.

Historical and Geographical Research and Analysis

1. Identify and interpret primary sources (artifacts, diaries, letters, photographs, art, documents, and newspapers) and contemporary media (computer information systems), assess their reliability, and make appropriate generalizations about events and life in United States history.
2. Recognize and explain how different points of view have been influenced by nationalism, race, religion, and ethnicity.
3. Distinguish fact from fiction by examining documentary sources.
4. Complete a well-documented and historically accurate case study about an individual or group at a particular time and location.
5. Understand and describe the roles of the historian, the anthropologist, the economist, the political scientist, the psychologist and the sociologist in the systematic study of human cultures.
6. Construct various time lines of United States history including landmark dates, technological & economic changes, social movements, military conflicts, and presidential elections.
7. Understand and describe reasons for periodizing history in different ways.
8. Locate on a map the 13 original states, the 50 current states and the states that entered the Confederacy.
9. Interpret maps, tables, diagrams, charts, political cartoons, and basic indicators of economic performance for understanding of economic and political issues.

Discussion, Debate and Persuasive Writing

1. Analyze different historical perspectives on situations and events, like those of Native Americans and settlers, Patriots and Tories, Federalists and Anti-Federalists, and Union Loyalists and Confederates.
2. Evaluate different assessments of the causes, costs and benefits of major events in American history such as the American Revolution, the Constitutional Convention, the Civil War, Reconstruction, World War I, the New Deal, World War II, the Korean War, the Civil Rights Movement, and the Vietnam War.

Computers & Technology (responsibility of all departments)

1. Communicate through application software, as evidenced by his or her

- Composing and editing a multi-page document at the keyboard, using writing process steps and word processing skills;
 - Using spreadsheets to enter data, set up formulas, analyze data and create graphs or charts to visually represent data;
 - Constructing simple databases and communicate with others' databases by defining fields and entering data, sorting, and producing reports in various forms;
2. Process, store, retrieve and transmit electronic information by
- Using appropriate search strategies with databases, CD-ROMs, videodisks and telecommunications;
 - Using electronic encyclopedias, almanacs, indexes and catalogs;
 - Using the internet to access information;
 - Use databases to perform research
 - Describing advantages and disadvantages of various computer processing, storage, retrieval and transmission techniques.

Social Studies Curriculum – Grades 7 & 8

Grade 7-8 American History Sequence

The grade 7-8 sequence is a chronically organized study of the United States. The curriculum will give a solid content foundation for the grade 11 history of the United States, and will include hemispheric links to Canada & Mexico, to prepare students to take a more global perspective in the grades 9 & 10 social studies curriculum.

In these two years students learn about change and continuity in our history, study documents and speeches that lay the foundation of American ideals and institutions, and examine the everyday life of people at different times in our history through the use of primary and secondary sources and a good basic textbook. Teachers will use simulations, class debates, projects, excursions to historic New York City sites and museums, and other innovative techniques to make learning experiences lively and memorable. Students will also be given ample instruction and practice in map and globe skills, skills of using and interpreting information and historical thinking skills.

To give students a framework and an overview of the issues, we will use a high-quality textbook designed particularly for a 7th & 8th grade American History sequence. Textbook options under consideration include one Pauline Maier and a set of books by Joy Hakim called “A History of US.” On top of the textbook, the curriculum will be rich with the study of primary documents, facilitated sometimes through a Great Books Foundation resource that contains the *Declaration of Independence*, the *United States Constitution*, Madison’s *Federalist #10*, Lincoln’s *Second Inaugural Address*, Martin Luther King’s *Letter From a Birmingham Jail*, and more, along with interpretive questions and activities to enable students to understand them. Hundreds of other primary documents will be available to teachers from a website adored by history teachers all over the country: www.bibliobase.com. Each document contains a headnote with a brief synopsis of its content and historical importance as well as a list of questions to stimulate classroom discussion. Michael Bellesiles, associate professor of history at Emory University, wrote the headnotes, questions and glossary terms, selected and edited each document to preserve its essence and, in the case of documents too long for classroom use, reduced them to best suit teachers’ and students’ needs. Teachers can search this database by historical period, region, approach, theme, document type, author, or document title and build a customized primary source coursepack.

In addition to very regular writing and research assignment, students will engage in variety of unique, historically based projects. For example, all students will complete at least one well-documented and historically accurate case study about an individual or group at a particular time and location, and interpret that person or group in light of their historical context. Students will also be expected to memorize, interpret and perform two important speeches (or excerpts) in front of the class. Speeches by Patrick Henry, Thomas Jefferson, Abraham Lincoln, Frederick Douglass, Franklin Delano Roosevelt, Martin Luther King Jr. and John F. Kennedy are expected to be popular choices.

The content of the school’s 7th & 8th grade social studies curriculum will align closely with the sequence recommended by the New York State Education Department, which divides the course into the following twelve units.

- Unit 1: The Global Heritage of the American People Prior to 1500
- Unit 2: European Exploration and Colonization of the Americas
- Unit 3: A Nation is Created
- Unit 4: Experiments in Government
- Unit 5: Life in the New Nation
- Unit 6: Division and Reunion

Unit 7: An Industrial Society

Unit 8: The United States as an Independent Nation in an Increasingly Interdependent World

Unit 9: The United States Between the Wars

Unit 10: The United States Assumes Worldwide Responsibilities

Unit 11: The Changing Nature of the American People from World War II to the Present

Unit 12: Citizenship in Today's World

The attached summary in Tab XV from the New York State Department of Education's website provides a content framework for the course.

High School Notes

Social Studies: Grade 11 American History Sequence – The benchmarks here could be upgraded with some social and cultural history

Social Studies: Grade 12 Semester 1: Participation in Government

Social Studies: Grade 12 Semester 2: Economics and Economic Decision Making

Grades Nine and Ten Benchmarks of Student Learning World History

To achieve the benchmarks for ninth and tenth grade social studies, students learn about, analyze and evaluate the historical development of people, places, and patterns of life from ancient times to the present. These standards strike a balance between the broad themes of history and geography and the probing of specific historic events, ideas, issues, people, and documents.

As for other social studies courses, we have relied heavily on the standards developed by the State of Virginia to construct these benchmarks. The first set of benchmarks, those for historical content and analysis, are arranged chronologically, like the course itself. They are followed by historical research and geography standards that can usually be applied to more than one historical period. While the historical and geographical benchmarks are separated for presentation here, the curriculum will fully integrate the study of them.

Historical Content and Analysis

1. The student will describe early physical and cultural development of mankind from the Paleolithic Era to the revolution of agriculture, with emphasis on
 - the impact of geography on hunter-gatherer societies;
 - characteristics of hunter-gatherer societies;
 - toolmaking and use of fire;
 - technological and social advancements that gave rise to stable communities; and
 - how archeological discoveries are changing our knowledge of early peoples.

2. The student will analyze and compare selected ancient river civilizations, including Egypt, Mesopotamia, the Indus Valley, and Shang China, and other ancient civilizations (such as the Hebrew and Phoenician kingdoms and the Persian Empire), in terms of
 - location in time and place;
 - the development of social, political, and economic patterns;
 - the development of religious traditions; and
 - the development of language and writing.

3. The student will describe, analyze, and evaluate the history of ancient Greece from about 2000 to 300 B.C., in terms of its impact on Western civilization, with emphasis on
 - the influence of geography on Greek economic, social, and political development;
 - Greek mythology and religion;
 - the impact of Greek commerce and colonies on the Mediterranean region;
 - the social structure, significance of citizenship, and development of democracy in the city-state of Athens;
 - the significance of the Persian Wars and the Peloponnesian Wars;

- life in Athens during the Golden Age of Pericles;
 - the contributions of Greek philosophers (including Socrates, Plato, and Aristotle), playwrights, poets, historians, sculptors, architects, scientists, and mathematicians; and
 - the conquest of Greece by Macedonia, and the spread of Hellenistic culture by Alexander the Great.
4. The student will describe, analyze, and evaluate the history of ancient Rome from about 700 B.C. to 500 A.D., in terms of its impact on Western civilization, with emphasis on
- the influence of geography on Roman economic, social, and political development;
 - Roman mythology and religion;
 - the social structure, significance of citizenship, and the development of democratic features in the government of the Roman Republic;
 - Roman military domination of the Mediterranean basin and Western Europe and the spread of Roman culture in these areas;
 - the roles of Julius and Augustus Caesar and the impact of military conquests on the army, economy, and social structure of Rome;
 - the collapse of the Republic and the rise of imperial monarchs;
 - the economic, social, and political impact of the Pax Romana;
 - the origin, traditions, customs, beliefs, and spread of Christianity;
 - the origin, traditions, customs, beliefs, and spread of Judaism;
 - the development and significance of the Catholic Church in the late Roman Empire;
 - contributions in art and architecture, technology and science, literature and history, language, religious institutions, and law; and
 - the reasons for the decline and fall of the Roman Empire.
5. The student will analyze the conflict between the Muslim world and Christendom from the 7th to the 11th century A.D., with emphasis on
- the origin, traditions, customs, beliefs, and spread of Islam;
 - theological differences between Islam and Christianity;
 - cultural differences between Muslims and Christians;
 - religious, political, and economic competition in the Mediterranean region; and
 - historical turning points that affected the spread and influence of both religious cultures.
6. The student will describe, analyze, and evaluate the history of the Byzantine Empire and Russia from about 300 to 1000 A.D., with emphasis on
- the establishment of Constantinople as the capital of the Roman Empire;
 - the expansion of the Byzantine Empire and economy;
 - codification of Roman law and preservation of Greek and Roman traditions;
 - conflicts that led to a split between the Roman Catholic and Greek Orthodox churches;
 - Byzantine art and architecture; and
 - Byzantine influence on Russia and Eastern Europe.
7. The student will describe, analyze, and evaluate the history of Europe during the Middle Ages from about 500 to 1000 A.D., in terms of its impact on Western civilization, with emphasis on
- the structure of feudal society and its economic, social, and political effects;
 - the Age of Charlemagne and the revival of the idea of the Roman Empire;
 - the invasions and settlements of the Magyars and the Vikings, including Angles and Saxons in Britain; and
 - the spread and influence of Christianity throughout Europe.

8. The student will describe and compare selected civilizations in Asia, Africa, and the Americas, in terms of chronology, location, geography, social structures, form of government, economy, religion, and contribution to later civilizations, including
- India, with emphasis on the caste system; the traditions, customs, beliefs, and significance of Hinduism; and the conquest by Moslem Turks;
 - China, with emphasis on the Tang dynasty; the traditions, customs, beliefs, and significance of Buddhism; the impact of Confucianism and Taoism; and the construction of the Great Wall;
 - Japan, with emphasis on the development and significance of Shinto and Buddhist religious traditions, and the influence of Chinese culture;
 - the kingdoms of Kush in eastern Africa and Ghana in western Africa; and
 - the Mayan and Aztec civilizations.
9. The student will give examples of the practice of slavery from the earliest civilizations and analyze and evaluate the effects of the practice on the enslaved peoples as well as other members of the societies.
10. The student will demonstrate an understanding of the state of the world about 1000 A.D. by summarizing and analyzing
- the institution of feudalism in Europe and the rise of towns and commerce;
 - the location and leadership of major Western European kingdoms;
 - the location and culture of the Byzantine and Muslim empires;
 - the location and culture of empires in India, China, Japan, sub-Saharan Africa, and Central America;
 - the role of the Roman Catholic Church in Europe; and
 - the conflict between Christian and Muslim cultures.
11. The student will analyze the patterns of social, economic, and political change and cultural achievement in the late Medieval period, including
- the emergence of nation-states (Spain, France, England, Russia) and distinctive political developments in each;
 - conflicts among Eurasian powers including the Crusades, the Mongol conquests, and the expansion of the Ottoman Turks;
 - patterns of crisis and recovery including the Black Death; and
 - the preservation of Greek and Roman philosophy, medicine, and science.
12. The student will analyze the historical developments of the Renaissance, including
- economic foundations of the Renaissance, including European interaction with Muslims, increased trade, role of the Medicis, and new economic practices;
 - the rise of Italian city-states;
 - artistic, literary, and intellectual creativity, including Leonardo DaVinci, Michelangelo, and Shakespeare, as contrasted with the Medieval period;
 - Machiavelli's theory of government as described in *The Prince*; and
 - differences between the Italian and the Northern Renaissance.
13. The student will analyze the historical developments of the Reformation, including
- the effects of the theological, political, and economic differences that emerged during the Reformation, including the views and actions of Martin Luther, John Calvin, Henry VIII and the divorce issue;

- the influence of religious conflicts on government actions, including the Edict of Nantes in France; and
 - the evolution of laws that reflect religious beliefs, cultural values, traditions, and philosophies, including the beginnings of religious toleration and the spread of democracy.
14. The student will analyze the impact of European expansion into the Americas, Africa, and Asia (16th through 19th centuries), in terms of
- the roles of explorers/conquistadors;
 - migration, settlement patterns, and cultural diffusion;
 - the practice of the slave trade;
 - the trade in, tobacco, rum, furs, and gold;
 - the introduction of new diseases;
 - the exchange of technology, ideas, and agricultural practices;
 - the influence of Christianity;
 - economic and cultural transformations (e.g., plants like tobacco and corn became available in new places, arrival of the horse in the Americas, etc.);
 - competition for resources and the rise of mercantilism;
 - the commercial and maritime growth of European nations, including the emergence of money and banking, global economies, and market systems; and
 - social classes in the colonized areas.
15. The student will compare Judaism, Christianity, Islam, Buddhism, and Hinduism, in terms of
- major leaders and events;
 - sacred writings;
 - traditions, customs, and beliefs;
 - monotheistic versus polytheistic views;
 - geographic distribution at different times;
 - political, social, and economic influences of each; and
 - long-standing religious conflicts and recent manifestations (e.g., Ireland, Middle East conflict, Bosnia, etc.).
16. The student will analyze the scientific, political, and economic changes of the 16th, 17th, and 18th centuries (Age of Absolutism, the Enlightenment, and the Age of Reason), in terms of
- the establishment of absolute monarchies by Louis XIV, Frederick the Great, and Peter the Great;
 - the Glorious Revolution in England and the French Revolution;
 - the ideas of influential people, including Hobbes, Locke, Montesquieu, Rousseau, and Jefferson;
 - how the political ideas of the Enlightenment and the ideas of religion affected the founders of the United States;
 - new scientific theories, including those of Newton, Kepler, Copernicus, Galileo, and others (e.g., Harvey, Franklin);
 - how technological changes brought about social, political, and cultural changes in Europe, Asia, and the Americas;
 - the flowering of the arts, philosophy, and literature (e.g., Voltaire, Diderot, Delacroix, Bach, and Mozart); and
 - the influence of religious beliefs on art, politics, science, and commerce.
18. The student will describe political developments in Europe in the 19th century, including
- the Congress of Vienna;

- expansion of democracy in Europe, including the effects of urbanization, revolutions of 1848, and British reform laws;
 - unification of Germany and the role of Bismarck; and
 - unification of Italy and the role of Garibaldi.
18. The student will analyze and explain the effects of the Industrial Revolution, in terms of
- the rise of industrial economies and their link to imperialism and colonialism;
 - how scientific and technological changes, including the inventions of Watt, Bessemer, and Whitney, brought about massive social and cultural change;
 - the emergence of capitalism and free enterprise as a dominant economic pattern;
 - responses to capitalism including utopianism, socialism, and communism;
 - how the status of women and children reflected changes in society;
 - the evolution of work and labor, including the slave trade, mining and manufacturing, and the union movement;
 - applying economic reasoning and cost-benefit analysis to societal issues; and
 - the transformation of Asia and Africa by expanding European commercial power.
19. The student will analyze major historical events of the 20th century, in terms of
- causes and effects of World War I and World War II;
 - the Russian Revolution;
 - the rise, aggression, and human costs of totalitarian regimes in the Soviet Union, Germany, Italy, and Japan;
 - the political, social, and economic impact of worldwide depression in the 1930's;
 - the Nazi Holocaust and other examples of genocide;
 - new technologies, including atomic power, and their influence on the patterns of conflict;
 - economic and military power shifts since 1945, including the rise of Germany and Japan as economic powers;
 - revolutionary movements in Asia and their leaders, including
 - Mao Zedong and Ho Chi Minh;
 - how African and Asian countries achieved independence from European colonial rule, including India under Gandhi and Kenya under Kenyatta and the transition to self-rule;
 - regional and political conflicts including Korea and Vietnam; and
 - the beginning and end of the Cold War and the collapse of the Soviet Union.

Historical Research

1. The student will demonstrate skills in historical research by
- identifying, analyzing, and interpreting primary and secondary sources and artifacts; and
 - validating sources as to their authenticity, authority, credibility, and possible bias.

Geographical Skills, Content and Analysis

1. The student will use maps, globes, photographs, and pictures to analyze the physical and human landscapes of the world in order to
- recognize the different map projections and explain the concept of distortion;
 - show how maps reflect particular historical and political perspectives;
 - apply the concepts of scale, orientation, latitude and longitude;
 - create and compare political, physical, and thematic maps of countries and regions; and

- identify regional climatic patterns and weather phenomena and relate them to events in the contemporary world.
2. The student will analyze how selected physical and ecological processes shape the Earth's surface, in terms of
 - how humans influence and are influenced by the environment; and
 - how people's ideas and relationship to the environment change over time, particularly in response to new technologies.
 3. The student will explain how
 - geographic regions change over time;
 - characteristics of regions have led to regional labels;
 - regional landscapes reflect the cultural characteristics of their inhabitants as well as historical events; and
 - technological advances have led to increasing interaction among regions.
 4. The student will analyze how certain cultural characteristics can link or divide regions, in terms of language, ethnic heritage, religion, political philosophy, social and economic systems, and shared history.
 5. The student will compare and contrast the distribution, growth rates, and characteristics of human population, in terms of settlement patterns and the location of natural and capital resources.
 6. The student will analyze past and present trends in human migration and cultural interaction as they are influenced by social, economic, political, and environmental factors.
 7. The student will locate and identify by name the major countries in each region and the world's major rivers, mountain ranges, and surrounding bodies of water.
 8. The student will identify natural hazards, describe their characteristics, explain their impact on human and physical systems, and assess efforts to manage their consequences in developed and less developed regions.
 9. The student will identify natural, human, and capital resources, describe their distribution, and explain their significance, in terms of location of contemporary and selected historical economic and land-use regions.
 10. The student will analyze the patterns of urban development, in terms of site and situation, the function of towns and cities, and problems related to human mobility, social structure, and the environment.
 11. The student will analyze the regional development of Asia, Africa, the Middle East, Latin America, and the Caribbean, in terms of physical, economic, and cultural characteristics and historical evolution.
 12. The student will analyze the patterns and networks of economic interdependence, with emphasis on formation of multi national economic unions, international trade, and the theory of competitive advantage, in terms of job specialization, competition for resources, and access to labor, technology, transportation, and communications.
 13. The student will distinguish between developed and developing countries and relate the level of economic development to the quality of life.

14. The student will analyze the forces of conflict and cooperation as they influence
- the way in which the world is divided among independent countries and dependencies;
 - disputes over borders, resources, and settlement areas;
 - the historic and future ability of nations to survive and prosper; and
 - the role of multinational organizations.

Grades Nine & Ten World History Curriculum

The two-year world history and geography course for grades 9 & 10 is a chronologically organized survey of major issues, movements, people, events, places, environments and political and economic systems beginning with the earliest humans and continuing through modern times. It will put historical and geographical emphasis on Europe, Asia, Latin America, Africa, and the Middle East. An in-depth study of the United States will follow in grade 11.

The course will enable students to achieve the above described benchmarks by helping them develop an understanding of the world's population and cultural characteristics, countries and regions, religious practices, land forms and climates, political and economic systems, natural resources and natural hazards, arts and technology and migration and settlement patterns. Spatial concepts of geography will be linked to chronological concepts of history to set a framework for studying human interactions and systems. Using texts, maps, pictures, stories, diagrams, charts, and a variety of chronological, inquiry/research, and technological skills, students will develop competence in chronological thinking, and historical and geographical comprehension and analysis.

Considerable emphasis in the first year of the course will be given to the role played by the natural environment and cultural and religious practices. As students progress through the Middle Ages in the second year, that emphasis will give way somewhat to an increasing focus on the political boundaries that developed with the evolution of nation-states. Significant attention in the second year of the course will be also be given to the ways in which scientific and technological revolutions created new economic conditions that in turn produced social and political changes. The people and events of the nineteenth and twentieth centuries will be emphasized for their strong connections to contemporary issues.

The faculty and administration will work together to select a high quality world history textbook to give students an introduction to the issues and an overview of the chronology. But per our philosophy of treating teachers as professionals, each year history teachers will be responsible for constructing their own version of the two-year course, in consultation with the principal and other teachers. They will present their course to the school administration along with a demonstration of how the course will move students toward the overall history standards and meet the benchmarks for grades 9 & 10.

Secondary sources will be a required component of the teaching materials and will be of teachers' individual selection. For primary sources teachers will rely on the internet-based database of documents called Bibliobase, which will also be used for the American history courses. Their Western Civilization document database contains approximately 600 primary source documents from 2800 B.C. to the present. Each document contains a headnote with a brief synopsis of its content and historical importance. An attached list of questions stimulates classroom discussion. Mark Angelos, assistant professor of history at Manchester College, and Charles Crouch, assistant professor of history at Georgia Southern University, wrote the headnotes, questions and glossary terms, selected and edited each document to preserve its essence and, in the case of documents too long for classroom use, reduced them to best suit teachers' and students' needs. Teachers can search this database by historical period, region, approach, theme, document type, author, or document title and build a customized primary source coursepack. Literature that students are reading at the same time in the language arts curriculum will bring additional valuable perspectives on the cultures and periods of study.

In addition to work with written texts, teachers will use simulations, class debates, group and individual projects, museum trips, and other innovative techniques to make learning experiences lively and memorable. Students will also be given intense instruction and practice in map and globe skills, skills of using and interpreting information and historical thinking skills.

Grade Eleven Benchmarks of Student Learning

United States History

The standards for eleventh-grade history cover the historical development of American ideas and institutions from the Age of Exploration to the present. The course enabling students to achieve these standards will be a survey of major issues, movements, people, and events in United States and New York history. While there is considerable focus on political and economic history, students will also be expected to develop a knowledge and understanding of social and cultural issues and trends. As throughout the social studies sequence, we have relied heavily on standards developed by the State of Virginia to construct these benchmarks. The content-based standards, like the course itself, are arranged chronologically. Skills-based standards appear at the end.

1. The student will analyze and explain the contacts between Native Americans and European settlers during the Age of Discovery, in terms of
 - Economic and cultural characteristics of the groups;
 - Motives and strategies of the explorers and settlers;
 - Impact of European settlement on the Native Americans; and
 - Legacies of contact, cooperation, and conflict from that period.

2. The student will compare the colonization of New York with that of other American colonies, in terms of
 - Motivations of ethnic, religious, and other immigrants and their influences on the settlement of colonies;
 - Economic activity;
 - Political developments; and
 - Social customs, the arts, and religious beliefs.

3. The student will analyze and explain events and ideas of the Revolutionary Period, with emphasis on
 - Changes in British policies that provoked the American colonists;
 - The debate within America concerning separation from Britain;
 - The Declaration of Independence and "Common Sense;"
 - Individuals, including New Yorkers, who provided leadership in the Revolution; and
 - Key battles, military turning points, and key strategic decisions.

4. The student will analyze the events and ideas of the Constitutional Era, with emphasis on
 - New constitutions in New York and other states and the Articles of Confederation;
 - Issues and policies affecting relations among existing and future states, including the Northwest Ordinance;
 - The Constitutional Convention, including the leadership of John Jay;
 - The struggle for ratification of the Constitution, including the Federalist Papers and the arguments of the Anti-Federalists; and
 - The addition of the Bill of Rights to the Constitution.

5. The student will analyze and explain events of the Early National Period, with emphasis on
 - Organization of the national government under the new
 - Constitution;
 - Major domestic and foreign affairs issues facing the first presidents and Congress;
 - The development of political parties;

- The impact of Supreme Court decisions affecting interpretation of the Constitution, including *Marbury v. Madison* and *McCulloch v. Maryland*;
 - Foreign relations and conflicts, including the War of 1812 and the Monroe Doctrine;
 - The Louisiana Purchase and the acquisition of Florida; and
 - Economic development, trade, tariffs, taxation, and trends in the national debt.
6. The student will analyze the causes and effects of major events of the Civil War and Reconstruction, including
- Slavery;
 - States' Rights Doctrine;
 - Tariffs and trade;
 - Settlement of the West;
 - Secession;
 - Military advantages of the Union and the Confederacy;
 - Threat of foreign intervention;
 - Economic and political impact of the war;
 - Roles played by individual leaders; and
 - Impact of Reconstruction policies on the South.
7. The student will analyze the impact of immigration on American life, in terms of
- Contributions of immigrant groups and individuals; and
 - Ethnic conflict and discrimination.
8. The student will summarize causes and effects of the Industrial Revolution, with emphasis on
- New inventions and industrial production methods;
 - New technologies in transportation and communication;
 - Incentives for capitalism and free enterprise;
 - The impact of immigration on the labor supply and the movement to organize workers;
 - Government policies affecting trade, monopolies, taxation, and money supply;
 - Expansion of international markets; and
 - The impact of industrialization, urbanization, and immigration on American society.
9. The student will analyze and explain the importance of World War I, in terms of
- The end of the Ottoman Empire and the creation of new states in the Middle East;
 - The declining role of Great Britain and the expanding role of the United States in world affairs;
 - Political, social, and economic change in Europe and the United States; and
 - Causes of World War II.
10. The student will analyze and explain the Great Depression, with emphasis on
- Causes and effects of changes in business cycles;
 - Weaknesses in key sectors of the economy in the late 1920's;
 - United States government economic policies in the late 1920's;
 - Causes and effects of the Stock Market Crash;
 - The impact of the Depression on the American people;
 - The impact of New Deal economic policies; and
 - The impact of the expanded role of government in the economy since the 1930's.

11. The student will demonstrate an understanding of the origins and effects of World War II, with emphasis on

- The rise and aggression of totalitarian regimes in Germany, Italy, and Japan;
- The role of the Soviet Union;
- Appeasement, isolationism, and the war debates in Europe and
- The United States prior to the outbreak of war;
- The impact of mobilization for war, at home and abroad;
- Major battles, military turning points, and key strategic decisions;
- The Holocaust and its impact; and
- The reshaping of the United States' role in world affairs after the war.

12. The student will analyze and explain United States foreign policy since World War II, with emphasis on

- The origins and both foreign and domestic consequences of the Cold War;
- Communist containment policies in Europe, Latin America, and Asia;
- The strategic and economic factors in Middle East policy;
- Relations with South Africa and other African nations;
- The collapse of communism and the end of the Cold War; and
- Post Cold War challenges and America's role in the world.

13. The student will evaluate federal civil rights and voting rights developments since the 1950's, in terms of

- The *Brown v. Board of Education* decision and its impact on education;
- Civil rights demonstrations and related activity leading to desegregation of public accommodations, transportation, housing, and employment;
- Reapportionment cases and voting rights legislation and their impact on political participation and representation; and
- Affirmative action.

14. The student will demonstrate an understanding of domestic policy issues in contemporary American society by

- Comparing conservative and liberal economic strategies;
- Explaining current patterns of Supreme Court decisions and evaluating their impact; and
- Comparing the positions of the political parties and interest groups on major issues.

15. The student will explain relationships between geography and the historical development of the United States by using maps, pictures, and computer databases to

- Locate and explain the location and expansion of the original colonies;
- Trace the advance of the frontier and the territorial expansion of the United States and explain how the physical environment influenced it;
- Locate new states as they were added to the Union;
- Understand the settlement patterns, migration routes, and cultural influence of various racial, ethnic, and religious groups;
- Compare patterns of agricultural and industrial development in different regions as they relate to natural resources, markets, and trade; and
- Analyze the political, social, and economic implications of demographic changes in the nation over time.

Historical and Geographical Research and Analysis

Students can

1. Analyze documents, records, and data (such as artifacts, diaries, letters, photographs, journals, newspapers, historical accounts, etc.);
2. Evaluate the authenticity, authority, and credibility of sources;
3. Formulate historical questions and defend findings based on inquiry and interpretation;
4. Develop perspectives of time and place, including the construction of various time lines of events, periods, and personalities in American history; and
5. Communicate findings orally, in brief analytical essays, and in a comprehensive paper.

Discussion, Debate and Persuasive Writing

The student will develop skills in discussion, debate, and persuasive writing with respect to enduring issues and determine how divergent viewpoints have been addressed and reconciled. Such issues include

- Civil disobedience vs. the rule of law;
- Slavery and its impact;
- The relationship of government to the individual in economic planning and social programs;
- Freedom of the press vs. the right to a fair trial;
- The tension between majority rule and minority rights;
- Problems of intolerance toward racial, ethnic, and religious groups in American society; and
- The evolution of rights, freedoms, and protections through political and social movements.

Computers & Technology Beyond Middle School Standards (responsibility of all departments)

Students can:

- Integrate databases, graphics and spreadsheets into word-processed documents.
- Use publishing software, graphics program and scanners to produce page layouts.
- Use local and worldwide network communication systems.
- Develop hypermedia – homepage – documents that can be accessed by worldwide networks.

Grade Eleven United States History Curriculum

The eleventh grade American History sequence will review the chronology introduced in grades 7 & 8, and explore the issues of American history in much greater depth. Students will pay as much attention to perspectives of contemporaries and historians on events and trends as they will on the events and trends themselves. Students will practice developing a thoughtful, critical perspective on history. They will also practice framing questions and analyzing historical events from the perspectives of other social sciences, including economics, sociology, anthropology, political science and psychology.

While the curriculum will be largely built around primary and non-textbook secondary source materials, as well as around students' independent research and writing projects, we will rely on a textbook to provide a framework and overview of the historical sequence. We will use a brilliant, concise textbook by Columbia Professor Alan Brinkley, *The Unfinished Nation*, for this purpose. It is a single-volume history of the United States that explores America's rich complexity and diversity, as well as the forces that have drawn it together to create a stable political system. Brinkley's earlier *Voices of Protest* was a winner of the American Book Award in History. Amazon.com gives the following description of *The Unfinished Nation's* content:

Beginning with the "discovery" by Europeans of a "New World" that was already the home of millions of people and highly developed civilizations, *The Unfinished Nation* chronicles the growth of new societies in America and the survival and transformation of old ones. It traces the development of political ideas and political institutions in the American colonies and, later, in the American nation. It examines the emergence of a society divided into distinct regional cultures, each with a highly developed system of class relations, gender roles, and racial norms. It explores the great crisis of American nationalism in the mid-nineteenth century and the emergence of a more consolidated nation out of the Civil War and Reconstruction. And it describes the dazzling changes that industrialization and the rise to world power have brought in the twentieth century -- and the host of social and cultural transformations that have come with them.

For primary sources teachers will rely on an internet-based database of documents called Bibliobase. Their U.S. History document database contains more than 600 primary source documents affecting U.S. history from A.D. 1200 to the present. Each document contains a headnote with a brief synopsis of its content and historical importance. An attached list of questions stimulates classroom discussion. Michael Bellesiles, associate professor of history at Emory University, wrote the headnotes, questions and glossary terms, selected and edited each document to preserve its essence and, in the case of documents too long for classroom use, reduced them to best suit teachers' and students' needs. Teachers can search this database by historical period, region, approach, theme, document type, author, or document title and build a customized primary source coursepack.

Following are a few examples of secondary sources we will recommend to teachers, which are based on the recommendations of teachers at Phillips Exeter Academy and New York City schools that work effectively with at-risk students.

- Edmund Morgan's two pieces on the Revolutionary period, *The Puritan Dilemma* and *The Birth of the Republic*.
- Harry Watson's *Liberty and Power: The Politics of Jacksonian America*,
- James McPhearson's *Battle Cry of Freedom* (selections), an excellent history of the Civil War, and
- Richard Hofstadter's *The Age of Reform*, a concise overview of reform movements from the Populists to the Progressives.

American literature that students are reading at the same time in the language arts curriculum will bring additional valuable perspectives on the periods of study. Many of our advisors at Phillips Exeter are now

teaching the Progressive period through a novel called *Ragtime*, and we will encourage the history teachers, as well as the language arts teachers, to consider the value of historical fiction as a teaching device.

Per our philosophy of treating teachers as professionals, each year history teachers will be responsible for constructing their own version of the American History course, in consultation with the principal and other teachers. They will present their course to the school administration along with a demonstration of how the course will move students toward the overall history standards and meet the benchmarks for grade 11.

GRADE 12 - PRINCIPLES OF ECONOMICS (SEMESTER 1)*(Benchmarks drawn from the California Grade 12 Economics Standards)*

1. Students understand common economic terms and concepts and economic reasoning, in terms of:

- The causal relationship between scarcity and the need for choices.
- Opportunity cost and marginal benefit and marginal cost.
- The difference between monetary and non-monetary incentives and how changes in incentives cause changes in behavior.
- The role of private property as an incentive in conserving and improving scarce resources, including.
- Renewable and non-renewable natural resource.
- The role of a market economy in establishing and preserving political and personal liberty.

2. Students analyze the elements of the United States market economy in a global setting, in terms of:

- The relationship of the concept of incentives to the law of supply and the relationship of the concept of incentives and substitutes to the law of demand.
- The effect of changes in supply and/or demand on the relative scarcity, price and quantity of particular products.
- The role of property rights, competition, and profit in a market economy.
- How prices reflect the relative scarcity of goods and services and perform the allocative function in a market economy.
- The process by which competition among buyers and sellers determines a market clearing price.
- The effect of price controls on buyers and sellers.
- The role of domestic and international competition in a market economy in terms of goods and services produced, and the quality, quantity, and price of those products.
- The role of profit as the incentive to the entrepreneurs in a market economy.
- The functions of the financial markets.
- The economic principles that guide the location of agricultural production and industry and the spatial distribution of transportation and retailing facilities.

3. Students analyze the influence of the U.S. government on the American economy, in terms of:

- How the role of government in a market economy often includes providing for national defense, addressing environmental concerns, defining and enforcing property rights, attempting to make markets more competitive, and protecting consumer rights.
- The factors that may cause the costs of government actions to outweigh the benefits
- The aims of government fiscal policies (taxation, borrowing, and spending) and their influence on production, employment, and price levels
- The aims and tools of monetary policy and their influence on economic activity (e.g., the Federal Reserve)

4. Students analyze the elements of the United States labor market in a global setting, in terms of:

- The operations of the labor market, including the circumstances surrounding the establishment of principal American labor unions, procedures used to gain benefits for its members, the effect of unionization, the minimum wage, and unemployment insurance

- The current economy and labor market including the types of goods and services produced, type of skills necessary, the effect of rapid technological change, and the impact of international competition
 - Wage differences among jobs and professions using the laws of demand and supply and the concept of productivity
 - The effects of international mobility of capital and labor on the U.S. economy
5. Students analyze the aggregate economic behavior of the United States economy by
- Distinguishing between nominal and real data
 - Defining, calculating and explaining the significance of an unemployment rate, the number of new jobs created monthly, an inflation or deflation rate, and a rate of economic growth
 - Distinguishing between short-term and long-term interest rates and explaining their relative significance.
6. Students analyze issues of international trade, and explain how the U.S. economy affects, and is affected by, economic forces beyond its borders, in terms of:
- The gains in consumption and production efficiency from trade with emphasis on the main products and changing geographic patterns of twentieth century trade among countries in the Western Hemisphere.
 - The reasons for and the effect of trade restrictions in the Great Depression compared with the present day arguments among labor, business, and political leaders over the effects of free trade on the economic and social interests of various groups of Americans.
 - The changing role of international political borders and territorial sovereignty in a global economy.
 - Explain foreign exchange, how exchange rates are determined, and the effects of the dollar gaining (or losing) value relative to other currencies a strong.

GRADE 12 – POLITICS OF THE LEGAL SYSTEM (SEMESTER 2)

The Supreme Court of the United States has played an extraordinary role in the development of the “American Experiment.” An institution designed to be a check on the power of government, it has played an extraordinary role in the political and social history of the United States. This course will examine how the Court has played its awesome constitutional role over the course of time, and how its decisions have both affected and been affected by the politics of the times and evolving moral and social norms. Bernard Schwartz, a constitutional scholar, argued in his *History of the Supreme Court* that if, as Orson Wells said, “human history is in essence a history of ideas,” then one can not study the United States without examining Americans’ effort to check governmental power. The institution best representative of that potent American tradition is the Supreme Court.

The semester-long course will be a chronological study of the Court’s most important decisions and its most influential justices. Students will examine not only the legal reasoning behind the decisions, but also their impacts on American political, economic & social practices. To do so they will read the decisions in their original form and analysis by legal scholars and historians.

Following is an outline of the standards for student performance. Students will focus on these themes through their chronological study of the role of the Court.

1. *Judicial Review vs. Judicial Self Restraint*

Students will understand and analyze the Supreme Court’s practice of *judicial review*, with emphasis on

- The first example of judicial review, *Marbury vs. Madison* (1803)
- The Court’s first use of its power to hold a state law unconstitutional, *Fletcher vs. Peck* (1810)
- The Courts refusal to become involved in the legal issues arising from the Dorr Rebellion in Rhode Island in *Luther vs. Borden* (1841)

2. *State vs. Federal Powers*

Students will discuss the court’s role in establishing the supremacy of the federal government over the states and the powers necessary to govern, with emphasis on

- *McCulloch vs. Maryland* (1819) and the doctrine of implied powers
- *Gibbons vs. Ogden* (1824) and inconsistent state and federal laws
- Commerce clause cases from *New York vs. Miln* (1837) to
- *Gibbons vs. Ogden* (1847) and the commerce clause

3. *Tension Between Private Property Rights and Community Needs*

Students will analyze the court’s role in balancing the protection of private property with the prerogative of government to serve community needs and interests, with emphasis on

- The legal rights of corporations, beginning with the *Dartmouth College* case (1819)
- The legal status of contracts, beginning with *Coolidge vs. Payson* (1817)
- The subordination of the rights of private property to the needs of the community in the *Charles River Bridge* case (1837)

4. *The Independence of the Court and the Court Packing Plan of 1937*

Students will analyze the degree of independence the Court has had from the other two branches, evaluating evidence from Franklin Roosevelt’s Depression-era attempt to influence the Court as well as from other historical contexts.

5. *Reconciling Liberty and Security:*

Students will analyze the court’s role in reconciling the antinomy between liberty and security, with special emphasis on

- The application of Holmes' "clear and present danger" test
- *Korematsu vs. the United States* (1944) and the internment of Japanese Americans during World War II
- The upholding of anti-Communist prosecutions in *Dennis vs. the United States* (1951)

6. *The Court and Civil Liberties*

- Students will discuss and analyze the Court's treatment of personal rights and liberties over time, with emphasis on the "preferred-position" theory as articulated in *United States vs. Caroline Products* (1938) and its extension during the Warren Court.
- Students will evaluate the evolution of the court's activity to protect civil rights, especially in the arenas of voting and public education. Students can analyze the impact of the 1954 *Brown vs. Board of Education* decision both vis-à-vis the Court's history and vis-à-vis the politics and social situation of the country at large.

7. *Watershed Cases*

Students will discuss and analyze the long-term effects of some of the Courts "watershed cases," including

- *Dred Scott vs. Stanford* (1857) – its effect on the institution of slavery and on the conflict that ultimately resulted in the Civil War
- *Lochner vs. New York and its famous Holmes Dissent* (1905) -- its effect on the right of the government to regulate labor and business practices
- *Brown vs. Board of Education* (1954) and its impact on segregation, civil rights and equal opportunity
- *Roe vs. Wade* (1973) and its effect on women's rights and the realm of privacy

8. *The Role of the Individual Justice*

Students will analyze the role of individual leadership of Supreme Court justices on the politics and government of the nation, with particular emphasis on Justices Marshall, Taney, Holmes, Taft, Hughes, Stone, Brandeis, Black, Frankfurter, and Warren.

New York State Foreign Language Standards

Standard 1: Students will be able to use a language other than English for communication.

Standard 2: Students will develop cross-cultural skills and understandings.

Additional Foreign Language Arts Standards at Bronx Preparatory Charter School

Levels 1, 2 & 3 (Generally Middle Academy Level)

Language for Human Interaction

Students can engage in formal and informal conversations in as active listeners and speakers. They can ask questions, clarify meanings and seek and give information.

Language for Cultural Understanding

Students can identify linguistic and cultural characteristics common to countries where Spanish is spoken, as well as linguistic and cultural differences among them. They can demonstrate the appropriate use of language and customs for effective communication in those countries. They can compare and contrast Latin American customs with those of the United States.

Language for Literary/Media Response, Analysis and Evaluation

Students can understand the point of view and main ideas of basic short stories, excerpts of novels, written and oral reports, TV/radio broadcasts and poems. They can clearly and accurately write paraphrases and brief summaries of what they read or hear and express an opinion about the subject.

Language for Creative Expression

Students can write letters and brief, creative narratives.

Grammar and Language Usage

Students can understand and use basic Spanish grammar forms in the present, past and future tenses. They can evaluate language usage with reference to the parts of speech and rules of grammar. Students correctly use a growing vocabulary.

Level 4 & Advanced Spanish (Senior Academy Level)

Language for Human Interaction

Students can function comfortably in a Spanish-only environment, participating in high-level conversations, analyzing and evaluating information and offering opinions. They can discuss topics at abstract levels.

Language for Cultural Understanding

Students can discuss important historical events and trends of selected countries where Spanish is spoken. Students can identify current world political and economic issues and discuss their effect on Latin America. They can analyze the relationship between the United States and selected Latin American countries. They can analyze and write about a topic from two cultural perspectives.

Language for Literary/Media Response, Analysis and Evaluation

Students can read conceptually abstract and linguistically complex works of literature and poetry, and analyze, discuss and interpret them using correct literary terms. They can read and interpret Spanish

language materials across the curriculum. They can gather information from a variety of media forms and analyze their perspectives and possible biases.

Language for Creative Expression

Students can write creative short stories, poems, or plays using correct and natural language.

Language for Research

Students can conduct research in Spanish and write a paper with appropriate citations.

Grammar and Language Usage

Students show facility with language and a breadth of vocabulary. They can use the most effective linguistic style for a given situation. They can apply the rules of Spanish effectively and draw inferences from language use.

Curriculum Overview – Foreign Language (Spanish)

The Bronx Preparatory Charter School Spanish language program has two primary purposes: 1) to enhance students' cross-cultural understandings, flexible thinking and global perspective, and 2) to give graduates the economic advantage in the job market that fluency in more than one language brings.

The neighborhood in which we propose to open the Bronx Preparatory Charter School has a truly bilingual community. Because the South Bronx has been a place of first settlement for Puerto Rican families, and more recently for people from the Dominican Republic and Central America, Spanish is heard as often as is English in stores, community organizations and apartment buildings around Webster Avenue and 171st Street. While we have not opted to make Bronx Prep a bilingual school, we have a strong commitment to creating a high quality Spanish program for all students – both those who are native speakers and those who have never spoken a word of Spanish. Students will have ample opportunity to make use of Spanish skills around their homes in the Bronx, and when they graduate they will surely find use for this language, which is becoming increasingly important both across the United States and globally.

Students will be required to take at least four years of Spanish during their eight years at the school, and will be required to meet the benchmarks for Spanish Level 4 in order to graduate. (Students entering in the sixth grade must also meet the standards for Spanish Level 4, but will have just a three-year requirement should they be able to meet the standards in three years). Classes will move at varied paces, so that some students can complete a level in one year, while others who require more time can cover the topics with more repetition before moving to the next level. Courses at the Senior Academy level will move more quickly through the Spanish levels than those at the Middle Academy.

Students will have the option of taking Spanish all eight years, as the Spanish class after Level 4, Advanced Spanish-Language Literature, can be taken as many times as a student desires. Teachers will vary the course's literature from year to year, and will raise standards of performance with each year that an individual student takes the course. Taking the course more than once will be no more redundant than taking multiple literature courses in English. Students who elect to take fewer than eight years of Spanish will use the course period normally reserved for Spanish for an elective (see electives section toward the end of this attachment).

Grammar

As in English, the school will adopt a classical approach to teaching grammar, vocabulary, spelling, language use and composition. Using techniques like sentence diagramming and grammar drill, the school will work intensely with students to teach them the basic framework of the language. Spanish instructors will take the same two-day sentence-diagramming course taken by the English teachers at the beginning of the school year. As in English, students need to understand relationships among words and clauses in order to write clearly and effectively, and this traditional technique is a wonderful way to make those relationships visual and clear. All students – native Spanish speakers or not – will engage in these grammar exercises. Many students who speak fluent Spanish but have gone to school in the US have had little or no introduction to the grammar and written form of Spanish. We look forward to helping the native speakers become truly bilingual by helping them develop writing skills to match their verbal abilities. While it will take longer, we hope to enable many of the non-native speakers to become bilingual writers and speakers, as well.

Literature

From the very beginning of Level 1, students will learn Spanish by reading and engaging in a diverse selection of high-quality literature selections. They will start by translating words and coming to a basic understanding of texts. As they acquire basic language skills, students will move to analysis,

interpretation and evaluation – the same skills they are practicing with English-language texts in other classes. Students will practice these skills in both written and oral forms.

We believe that given the level of professionalism we expect of our teachers, it is critical that we empower the Spanish language staff with the discretion over the literary selections they use to bring students to the school's foreign language standards. Teachers teach best the literature that they themselves find powerful, and with which they have experience.

One literature requirement that we will have is that students read selections by authors from the Caribbean and South and Central America, as Spanish class will be a wonderful opportunity for our students to explore their own ethnic heritage and/or the cultural ancestry of their classmates. Octavio Paz, Gabriel García Márquez, Isabel Allende and Julia Alvarez will likely be popular choices among 20th century writers. Teachers will also be encouraged to introduce themes in Latin American history through exploration of contemporary literature. For example, Juan del Valle Caviedes' ironic poem *Privilegios del Pobre* (Privileges of the Poor) is a wonderful launching point for a conversation about colonialism and poverty. José Martí's *Versos Sencillos* (Simple Verses) grounds a conversation about liberty and revolution. Teachers will be encouraged to introduce students to some of Christopher Columbus' letters that report his first impressions of his encounter with what he believed was India. That moment set in motion so much in the history of the Americas, and knowledge of Spanish will enable students to look first hand at the perspective of a critical actor. Native Spanish speakers will be able to access these literary and historical works before students learning Spanish for the first time, but by Spanish level three all students will be working through original texts.

For advanced Spanish classes we will likely use a literary anthology called *Voces de Hispanoamerica*. The book divides a wonderful set of short works and excerpts into five sections that correspond to different stages of historical and cultural development of Latin America. Students are introduced to each section and to each work with Spanish-language discussions of how historical events, political situations, native influences and foreign literary movements contributed to the development of individual selections, as well as to a distinct continental literature.

The culture, language and history of Spain are of course relevant and important in any study of Spanish, and at Bronx Prep students will be introduced to Spain, just as they are introduced to the culture, language and history of Britain in their studies of the United States. The traditions of the "mother country" must be understood both in its European context and in the colonial and post-colonial context of the Americas.

Conversation

While many of the conversations that take place in Spanish class will be discussions of texts, students who are not fluent speakers will also need practice engaging in day-to-day social and business conversations. Students will engage in role-plays and genuine situations in which they order a meal in a restaurant, ask directions from a stranger on the street, relate an experience to a friend, describe a physical problem to a doctor, participate in a job interview, debate a political issue, share a cultural tradition, and so many more. These conversations will only sometimes take place in class; opportunities for formal and informal Spanish-language conversation abound in the South Bronx.

Student Placement

Students will arrive at the Bronx Preparatory Charter School with Spanish language abilities ranging from written and verbal fluency, to verbal ability only, to no exposure to Spanish whatsoever. As such, Spanish will not be organized by grade level, but rather by students' ability. The Spanish language benchmarks are divided into four levels: Basic, Intermediate, Advanced Intermediate and Advanced. All students must meet the benchmarks of Advanced Spanish in order to graduate. The classes will not be actively divided into classes for "native" and "non-native" speakers, though it is expected that native

speakers will advance more quickly through the sequence than will students who do not speak Spanish at home. Some native speakers will need to spend some time in basic or intermediate classes in order to develop reading and writing skills. Their presence will elevate the level of conversation in those classes and significantly benefit the non-native speakers. For native Spanish speakers the relatively tedious grammar and vocabulary will give way quite quickly to a survey of literature and history. Spanish teachers will have the wonderful opportunity to introduce their students to the marvelous variety of literature from Latin America and Spain and to the growing body of literature by Latino writers in the United States.

Teachers

The language teachers themselves will be as important to student learning as the pedagogy. Clearly native speakers will have the best oral skills, but it will also be vital that the teachers know how to teach Spanish as a foreign language. Like all Bronx Prep teachers, they will also need to have enthusiasm for their subject, energy, a sense of humor and genuine caring for adolescents.

Basic Spanish (Level 1)

This level, which may require coursework for up to two years, introduces students to spoken and written Spanish. The skills of reading, writing and speaking Spanish will be viewed as equally important. Considerable oral practice and written exercises lead students to understanding of basic grammar. Grammar will be taught with a classical textbook, but we also strongly believe that grammar, vocabulary and oral/aural skills are effectively taught through literature. Students will, therefore, begin to read very simple short stories beginning in the second month. These same short stories will serve as a basis for conversation and writing summaries in Spanish. Spanish will be used in class from the very first day. While some teachers will prefer to teach grammatical points in English, the discussion of reading and writing assignments will be conducted entirely in Spanish.

Benchmarks for Student Achievement – Basic Spanish (Level 1)

By the end of Spanish Level 1 students can

Verbs

1. Conjugate in the present tense and use correctly regular verbs with the three common endings: -ar, -er and -ir.
2. Conjugate and correctly use the two Spanish verbs that express “to be:” *ser & estar*.
3. Conjugate in the present tense and use correctly regular stem-changing verbs and verbs with other common spelling changes.
4. Conjugate and use correctly a variety of common irregular verbs in the present tense, including *hacer* (to make or do), *poner* (to put), *saber* (to know), *salir* (to go out), *ver* (to see) *caer* (to fall), *traer* (to bring), *oír* (to hear), *decir* (to say), *tener* (to have), *venir* (to come), *dar* (to give), *ir* (to go)
5. Conjugate in the preterite (simple past) tense regular verbs with the three common endings: -ar, -er and -ir.
6. Conjugate verbs in the imperfect tense.
7. Correctly use the preterite and imperfect tenses as appropriate to describe activity in the past.
8. Use the expression *ir a + infinitive* to express activity in the future.
9. Use reflexive verbs with simple structures.
10. Use negation correctly.
11. Correctly construct interrogative sentences.

Noun and Pronoun Structures

1. Use nouns with the appropriate articles to reflect whether nouns are masculine or feminine, singular or plural.
2. Correctly use the following kinds of pronouns in simple structures: subject, prepositional, direct object and indirect object.
3. Use *a*, *de* and other prepositions correctly in common phrases.

Adjectives/Adverbs & Related Structures

1. Use adjectives so that they 1) agree with the noun modified and 2) appear in the correct sentence position.
2. Use adverbs and simple adverbial expressions in phrases of mode, time and place.
3. Use cardinal numbers.
4. Express the time and date.
5. Express possession with the preposition *de* and with possessive adjectives.

Vocabulary & Day-to-Day Conversation

Use Spanish vocabulary to have simple conversations on following kinds of topics:

- Personal identification

- House & home
- Family life
- Community/neighborhood life
- Physical environment and the weather
- Meals, food & beverages
- Health & well being
- Education
- Earning a living
- Leisure
- Shopping
- Entertainment

Culture & Literature

1. Read and translate basic texts of the level demonstrated in the attachment for Level 1.
2. Write short summaries of simple Spanish-language texts.
3. Talk and write about some customs common to Latin American countries and Spain. Talk and write about some of the differences between Spain and Latin America.

20 La carta de María

atentamente, etc. sincerely
 yours
 azules blue
 comercio industry, business
 diciembre December
 diecisiete seventeen
 espero que me escriba I hope
 that you write me
 estoy I am
 estudiamos we study
 estudio I study
 fotografía photograph

hablamos. we speak
 hizo made
 mande you may send
 me to me
 mi ...

Sample of Reading Competency Expected at Spanish Level 1

from *Easy Spanish Reader* by William T. Hardy (National Textbook Company of Lincolnwood, IL)

Señor Fernando Castillo
 de diciembre de

Palmería, España

Querido Fernando,

Mi amigo Enrique Pereda me dice que usted quiere correspondencia con una muchacha norteamericana.

Tengo diecisiete años. Tengo pelo rubio y ojos azules. En esta carta está mi fotografía.

Estoy en el cuarto año del colegio y en el cuarto año del curso de español también. Estudio dos idiomas: el inglés y el español, pero estoy más interesada en el estudio de español. Las otras asignaturas son la historia de las Américas, la química y el álgebra.

Mi colegio es grande. En mi escuela hay dos profesores de español y dos salas de clase de español. Mi profesora de español se llama la señorita Scott. Ésta es mi primera carta en español y ella hizo las correcciones.

En mi clase de español estudiamos *Don Quijote*, un libro de ensayos, una novela de la Argentina que se llama *Amalia* y

varios dramas españoles. La profesora y los alumnos siempre hablamos español en la clase.

Nuestro club español se llama *Los aventureros*. Es para los alumnos adelantados en el estudio de español y para todos los alumnos de habla española. Mi amigo Enrique es el presidente de *Los aventureros* y yo soy la secretaria. Tenemos reuniones todos los martes y nuestros programas son muy interesantes.

Mi ciudad es grande y hermosa. Está en el interior de los Estados Unidos. Tiene mucho comercio.

Espero que usted me escriba pronto y que me mande su

gura servidora,

María Jackson

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Form column B to form a

- | A | B |
|-------------------------------------|--|
| 1. Tengo | mucho comercio. |
| 2. María estudia | me escriba pronto. |
| 3. Ella está más | diecisiete años. |
| 4. La profesora de español de María | grande y hermosa. |
| 5. La profesora hizo | la historia, la química y el álgebra. |
| 6. La ciudad de María es | todos los martes. |
| 7. La ciudad tiene | siempre hablamos español en clase. |
| 8. El club tiene reuniones | se llama la señorita Scott. |
| 9. María dice: Espero que usted | interesada en el español. |
| 10. La profesora, los alumnos y yo | las correcciones en la carta de María. |

Intermediate Spanish (Level 2)

This intermediate level continues to introduce students to spoken and written Spanish. The skills of reading, writing and speaking Spanish continue to be viewed as equally important. Considerable oral practice and written exercises lead students to a mastery of basic grammar. As in Spanish Level 1, grammar, vocabulary and other skills will be taught both through a classical textbook and through literature. Students will read short stories and simple poems. By the end of the sequence students will begin engaging in more serious texts, such as *Misterio en Altamira* by Meix and Hernandez, Pavón's *El carnaval*, and *El sombrero de tres picos* by Alarcón. With a possible exception of when introducing new points of grammar, teachers will be encouraged to conduct classes almost exclusively in Spanish.

Benchmarks for Student Learning - Intermediate Spanish (Level 2)

By the completion of Spanish Level 2 students can

Verbs

1. Demonstrate all the verb skills of Spanish Level 1 with greater fluency and with a greater variety of regular and irregular verbs.
2. Use common idiomatic expressions with *hacer*, *tener* and other verbs.
3. Make formal and informal commands, negative and positive, with regular verbs.
4. Make formal and informal commands, negative and positive, with common irregular verbs.
5. Make commands using reflexive verbs.
6. Conjugate and use verbs correctly in the formal future tense, as well as use the expression *ir a + infinitive*.
7. Use the conditional tense.
8. Use reflexive verbs in more complex structures in a variety of verb tenses.
9. Use the principal negative expressions and their opposite affirmatives, for example *nadie & alguien* (nobody & somebody), and *nunca & siempre* (never & always).

Noun & Pronoun Structures

1. Demonstrate all the noun & pronoun skills of Spanish Level 1 with greater fluency and with a greater variety of nouns.
2. Use direct and indirect objects (in noun or pronoun form) in combination.
3. Correctly use verbs like *gustar* (to please) and *parecer* (to appear) that take an indirect object in an idiomatic way.
4. Use the relative pronouns *que* (that) and *quien* (who) correctly.
5. Use a wide variety of common expressions with prepositions, infinitives, or a combination.

Adjectives/Adverbs & Related Structures

1. Demonstrate all the adjective & adverb skills of Spanish Level 1 with greater fluency and with a wider vocabulary.
2. Shorten common adjectives and use them correctly in the sentence structure.
3. Use a variety of adverbs and adverbial expressions in phrases of mode, time and place.
4. Construct comparisons.
5. Use ordinal numbers, fractions and other vocabulary common to mathematical expressions.
6. Construct exclamations.
7. Use demonstrative adjectives correctly.

Vocabulary & Day-to-Day Conversation

Use Spanish vocabulary to have more complex, abstract conversations on the following kinds of topics:

- Travel
- Cultural traditions

- The arts
- Ethics and belief systems
- Politics
- Public & private services
- Career choices

Culture & Literature

1. Read, translate and discuss texts of the level demonstrated in the attachment for Spanish Level 2.
2. Write summaries texts studied in class, as well as more interpretive and evaluative writing assignments.
3. Discuss and write about (in Spanish) the role of home, family and religion in Spanish, Latin American and North American cultures.
4. Discuss and write about (in Spanish) the history, economy and cultural traditions of selected Spanish-speaking countries.
5. Discuss and write about (in Spanish) the historical and present relationships among Latin America, North America and Spain.

18 La Guerra de Independencia

Los mexicanos sufrieron bajo el dominio del gobierno español muchos años hasta que dos naciones les dieron ejemplos de los métodos de ganar la independencia. Las colonias de la América del Norte, bajo la dirección del general Jorge Washington, ganaron su independencia de Inglaterra. Un poco después, los republicanos de Francia mataron a los nobles y establecieron una república.

La ocasión de México contra España en 1801 cuando un ejército de Napoleón, con el ejército de España no podía mandar más soldados españoles a México. España estuvo bajo el dominio de Napoleón algunos años.

En el año 1810 un padre católico llamado Miguel Hidalgo, del pequeño pueblo de Dolores, proclamó la independencia de México. Con una pequeña fuerza, atacó a los soldados españoles en varias ciudades, ganando todas las batallas. Muchos más mexicanos se alistaron en el ejército de Hidalgo y el padre continuó a ganar victorias sobre las tropas españolas y a capturar ciudades.

Por fin, Hidalgo llegó a la ciudad de México con un ejército de 100.000 mexicanos. En la capital había solamente 3.000 soldados españoles, pero por alguna razón, Hidalgo no atacó la capital. Fue al norte. En el norte, muchos de

los soldados mexicanos desertaron del ejército de Hidalgo. El general mexicano perdió varias batallas y por fin fue capturado y matado por los españoles.

Después de la muerte de Hidalgo, otros patriotas mexicanos continuaron la Guerra de Independencia. Morelos fue uno de los más ilustres patriotas. Él peleó algún tiempo contra los españoles y convocó el primer congreso, que hizo muchas leyes de reforma, pero los españoles capturaron a Morelos y lo ejecutaron.

Seis años más tarde, Iturbide y Guerrero, dos generales mexicanos, derrotaron a los españoles y el 27 de septiembre de 1821, tomaron la capital. Así ganaron la independencia de Mé-

su indepen-
is rica. Per-
nto de los.

Sample of Reading Competency Expected at Spanish Level 2

from *Easy Spanish Reader* by William T. Hardy (National Textbook Company of Lincolnwood, IL)

Preguntas

1. ¿Quiénes sufrieron bajo el dominio español?
2. ¿Cuántos años sufrieron?
3. ¿Cuáles fueron las dos naciones que dieron a México ejemplos de los métodos de ganar la independencia?
4. ¿Quién fue Jorge Washington?
5. ¿Qué hicieron los republicanos franceses a los nobles?
6. ¿Cuándo se presentó la ocasión de empezar la revolución mexicana?
7. ¿Quién fue Miguel Hidalgo?
8. ¿Qué proclamó?
9. ¿A quiénes atacó?
10. ¿Quién ganó las batallas?
11. ¿Adónde llegó por fin?
12. ¿Atacó la capital?
13. ¿Por qué no?
14. ¿Quiénes desertaron del ejército de Hidalgo?
15. ¿Qué perdió él?
16. ¿Por quiénes fue capturado y matado?

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convocó called together
of
laws laws

derrotaron defeated

Advanced Intermediate Spanish (Level 3)

This sequence continues the study of spoken and written Spanish begun in Levels 1 & 2. It completes the study of fundamental forms and structures and includes a program of readings. Active vocabulary and proficiency in listening, speaking, and writing are developed through frequent discussion, oral presentations, and compositions. Readings will be of teachers' selection, but may include the following, which were recommended by our curriculum consultants at Phillips Exeter: plays by Cantón, Buero Vallejo, and Delibes, and novels such as Sender's *Réquiem por un campesino español* and Denevi's *Rosaura a las diez*.

Benchmarks for Advanced Intermediate Spanish (Level 3)

By the completion of Spanish Level 3 students can

Verbs

1. Demonstrate all the verb skills of Spanish Levels 1& 2 with greater fluency and with a greater variety of regular and irregular verbs.
2. Correctly use idiomatic expressions with *acabar, dar, dejar, echar, haber, hacer, perder, ponerse, tener, volver* and other verbs.
3. Use gerunds and progressive tenses.
4. Use past participles and compound tenses.
5. Use passive constructions.
6. Use the subjunctive of regular and irregular verbs.

Noun & Pronoun Structures

1. Demonstrate all the noun & pronoun skills of Spanish Levels 1 & 2 with greater fluency and with a greater variety of nouns.
2. Use the neuter article *lo* and omit the article where appropriate.
3. Use more complex expressions with relative pronouns including alternate forms of *quien, cual, lo que* and *cuyo*.
4. Use an increasing variety of common expressions with prepositions, infinitives, or a combination.
5. Correctly use the personal *a*, and correctly use the prepositions *para* or *por* (for) in various situations.

Adjectives/Adverbs & Related Structures

1. Demonstrate all the adjective & adverb skills of Spanish Levels 1 & 2 with greater fluency and with a wider vocabulary.
2. Construct comparisons of equality & equality and superlatives.
3. Use prepositions in combination with nouns, adjectives, adverbs, (and combinations thereof) in a wide variety of adverbial expressions.

Vocabulary & Day-to-Day Conversation

Use the Spanish language to have complex conversations on all topics, concrete and abstract, that students their age discuss in school, at home, around their communities and when traveling.

Culture & Literature

1. Read, translate and discuss texts of the level demonstrated in the attachment for Spanish Level 3.
2. Write thoughtful interpretive and evaluative literary essays on texts studies in class.
3. Apply shared inquiry skills of asking and answering interpretive questions about a text to literature in the Spanish language.
4. Make verbal and written arguments about history, literature and other topics, citing evidence from a growing repertoire of Spanish-language texts.

5. Demonstrate a researched understanding of selected topics in the history of Latin America and Spain through written papers and oral reports.
6. Discuss, in writing and verbally, the geography of Latin America and Spain and its impact on culture and civilizations.
7. Compare the colonial and post-colonial experiences of two Latin American countries, demonstrating a nuanced understanding of the two histories.



Costumbres Hispanoamericanas

Las costumbres y tradiciones hispanoamericanas reflejan la influencia española e indígena sobre todo, y en ciertos lugares también la influencia negra (especialmente en la música y los bailes).

DÍAS DE FIESTA

5 La religión católica ha tenido un papel muy importante en la historia y en la vida diaria. Por eso muchas fiestas religiosas se han convertido en fiestas nacionales. Hay unas que se celebran en todos los países y otras que son propias de cada país. Por ejemplo, se celebran en los países hispanoamericanos desde el principio de los tiempos. Durante los siglos siguientes, se siguió a las fiestas de barro vivo y se rompieron la tradición española y una gran tradición.

Sample of Reading Competency Expected at Spanish Level 3

from *Spanish 3 Years* by Stephen Levy and Robert Nassi (Amsco School Publications of New York, NY)

Otras fiestas religiosas católicas como la Semana Santa y el Día de Todos los Santos (el primero de noviembre) se celebran en casi todos los países.

20 Por supuesto que el primero de enero es un día de fiesta. La noche anterior en muchos pueblos la gente sale a bailar por las calles. Hay grupos que llevan muñecos con figuras de viejos para enterrarlos, enterrando así el año viejo.

En todos los países hay ferias o carnavales que son más o menos famosos. Durante varios días hay música, bailes y desfiles de comparsas, ya sea en las calles o en salones de fiesta. En países donde aún existe la tradición (por ejemplo, México y Colombia), hay también corridas de toros.

30 Cada país tiene su fiesta nacional, que conmemora la fecha en que comenzó la lucha por su independencia de España. Por ejemplo,

- 2 sobre todo above all, especially
- 11 anteriores a preceding
- 17 Semana Santa Holy Week (week preceding Easter Sunday)
- 25 el desfile de comparsas masquerade parade

en México es el 16 de septiembre, en Colombia el 20 de julio y en la Argentina el 9 de julio. Otros días de fiesta celebran sucesos históricos importantes, como el 5 de mayo en México, que conmemora la lucha de los mexicanos contra la dominación de Francia y el emperador Maximiliano.

Luego hay dos días que se celebran en toda Hispanoamérica: el primero de mayo, que es el Día del Trabajo, y el 12 de octubre, llamado el Día de la Raza, que conmemora el descubrimiento de América.

BEBIDAS Y COMIDAS

En general, las comidas representan una mezcla de lo español y lo indígena, y sus ingredientes principales son el maíz, el frijol, el plátano, la carne y la papa (hay lugares en los Andes donde existen más de 30 variedades de papas).

Casi todos los países tienen su versión del tamal, y en muchos ésta cambia según la región. Básicamente, es una masa de maíz fresco cocida por dentro de una hoja de maíz, con pollo, puerco, carne de

o Rico) se comen en muy populares en el mundo. En Cuba «mojarrito» se preparan refritos en muchos otros países. En México se preparan en diversas tortas y en las: tortillas en Mé-

xico, arepas en Colombia y Venezuela, cazabe en Cuba.

La empanada (una especie de pastel rolleno con carne o pescado y otros ingredientes) es de origen gallego, pero se transformó en el Nuevo Mundo y tomó aspecto diferente en cada país. No es lo mismo la empanada argentina que la chilena, o la cubana que la panameña o la colombiana, aunque todas tienen el mismo nombre.

En la Argentina y en el Uruguay un churrasco es una combinación de carnes y órganos de la vaca que se adoban y se asan a las brasas.

En nuestro país son más conocidas las comidas del norte de México, como las enchiladas (tortillas enrolladas, rellenas de carne, pollo o queso y cubiertas de salsa), los tacos y el chile con carne. La forma de preparar estas comidas también varía de Tejas a California o Nuevo México.

Las bebidas alcohólicas más populares de Hispanoamérica son el ron, que se produce en los países del Caribe y el norte de Sudamérica;

16 cocer al vapor to steam

5
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Advanced Spanish (Level 4)

At Spanish Level 4, students are assumed to have comprehensive working knowledge of the Spanish language. The following course descriptions are examples of the kind of course content that Spanish teachers may use to engage students at this level. Many are modifications of popular advanced-level Spanish courses at Phillips Exeter.

The Short Story

This course explores a variety of writing styles through the medium of the short story. Representative stories are chosen from the works of authors such as Borges, Donoso, Cortázar, Fuentes, and Allende.

"Supernovel"

This in-depth study of a single Hispanic masterpiece gives special attention to the historical, cultural, and social context in which the work was written. Possible "superchoices" include García Márquez's *Cien años de soledad*, Allende's *La casa de los espíritus*, Cervantes' *Don Quijote de la Mancha*, Quereño's, *El Buscón*.

Survey of Spanish and Spanish-American Literature

Choosing from contemporary and classical authors, students discover the rich literary traditions of Latin-America and Spain. Different genres, styles and themes are studied and analyzed. The authors whose works are studied may include Unamuno, García Lorca, Matute, Borges, García Márquez, and other writers according to student interest.

Magical Realism

Pushing back the limits of time and space, magical realism transforms reality into a fantastic world of myth, imagination, and illusion. Readings may include Borges, Allende, and Cortázar among others.

The Contemporary Spanish-Speaking World

This course concentrates on current cultural issues in Latin America and to a lesser degree, Spain. Readings could include fiction, drama, poetry, and newspapers. Film, television and radio broadcasts, and music may be incorporated as well. Students choose topics of personal interest for oral and written reports.

The Latino Experience in the United States

Students will read and write about literature that explores the experience of Latinos in the United States. The literature studied will be primarily, though not necessarily exclusively, that which has been written in Spanish. All class conversation and all writing for the course will be in Spanish.

Benchmarks for Advanced Spanish (Level 4)

The benchmarks at Spanish Level 4 are exactly the same as English Language Arts Benchmarks for the student's current grade level. It is assumed that students who complete Spanish level three have an ability to read, write, speak and listen in the Spanish language. As in English class, students at Spanish Level 4 will continue to work on grammar forms and expanding their vocabulary as they develop writing, interpretation and critical thinking skills. We expect that students will require between two and six years of Spanish study at Bronx Prep to reach Level 4.

Poemas en prosa en *Poemas humanos* (1939)

VOY A HABLAR DE LA ESPERANZA

Yo no sufro este dolor como César Vallejo. Yo no me duelo ahora como artista, como hombre ni como simple ser vivo siquiera. Yo no sufro este dolor como católico, como mahometano ni como ateo. Hoy sufro solamente. Si no me llamase César Vallejo, también sufriría este mismo dolor. Si no fuese artista, también lo sufriría. Si no fuese hombre ni ser vivo siquiera, también lo sufriría. Si no fuese católico, ateo ni mahometano, también lo sufriría. Hoy sufro desde más abajo. Hoy sufro solamente.

Me duelo ahora sin explicaciones. Mi dolor es tan hondo, que no tuvo ya causa ni carece de causa. ¿Qué sería su causa? ¿Dónde está aquello tan importante, que dejase de ser su causa? Nada es su causa; nada ha podido dejar de ser su causa. ¿A qué ha nacido este dolor por sí mismo? Mi dolor es del viento del norte y del viento del sur. Me duelen los brazos y me duelen los pies. Me duelen los ojos y me duelen los labios. Me duelen los brazos y me duelen los pies. Me duelen los ojos y me duelen los labios.

Si hubieran cortado el cuello de modo, mi dolor sería más grande. Miro el dolor de sufrimiento, que de una brizna¹⁶ de yerba más engendrada, par

Yo creía hasta en la muerte. Yo creía hasta en la vida. Yo creía hasta en el amor. Yo creía hasta en el odio. Yo creía hasta en la esperanza. Yo creía hasta en la desesperanza. Yo creía hasta en la vida. Yo creía hasta en la muerte. Yo creía hasta en el amor. Yo creía hasta en el odio. Yo creía hasta en la esperanza. Yo creía hasta en la desesperanza.

Poemas humanos

PIEDRA NEGRA SOBRE UNA PIEDRA BLANCA¹⁷

Me moriré en París con aguacero,
un día del cual tengo ya el recuerdo.
Me moriré en París —y no me corro—¹⁸
tal vez un jueves, como es hoy, de otoño.

¹⁵ Sin comer.

¹⁶ Hebra.

¹⁷ Verso de diez sílabas dispuestos en dos tercetos; la rima asonante está

costumbre de la antigüedad de indicar los sucesos felices con una piedra blanca y los desafortunados con una negra.

¹⁸ No me escapó.

169a

Jueves será, porque hoy, jueves, que prosa¹⁹ estos versos, los números²⁰ me he puesto a la mala y, jamás como hoy, me he vuelto, con todo mi camino, a verme solo.

César Vallejo ha muerto, le pegaban todos sin que él les haga nada; le daban duro con un palo y duro

también con una soga; son testigos los días jueves y los huesos números, la soledad, la lluvia, los caminos...

España, aparta de mí este caliz en *Poemas humano*

hombre

Sample of Reading Competency Expected at Spanish Level 4

from *Voces de Hispanoamerica* compiled by Raquel Chang-Rodriguez and Malva E. Filer (Heinle & Heinle Publishers of Boston, MA)

Acudieron a él veinte, cien, mil, quinientos mil, clamando: "¡Tanto amor y no poder nada contra la muerte!" Pero el cadáver ¡ay! siguió muriendo.

Le rodearon millones de individuos, con un ruego común: "¡Quédate hermano!" Pero el cadáver ¡ay! siguió muriendo.

Entonces, todos los hombres de la tierra le rodearon; les vio el cadáver triste, emocionado; incorporóse lentamente, abrazó al primer hombre; echóse a andar...

■ Preguntas generales

1. ¿De dónde proviene la angustia evidente en la obra de Vallejo?
2. ¿Que experiencias personales han marcado su lírica?
3. ¿Qué visión del indígena observamos en *Los heraldos negros*?
4. ¿Cuáles son los temas constantes de su obra, y cómo los elabora?
5. ¿Cómo se manifiesta la preocupación social en la obra de Vallejo?

¹⁹ prosa

²⁰ Hueso entre el hombro y el codo

New York State Fine Arts Standards

- Standard 1:** *Creating, Performing and Participating in the Arts*
Students will actively engage in the processes that constitute creation and performance in the arts (dance, music, theatre and visual arts) and participate in various roles in the arts.
- Standard 2:** *Knowing and Using Arts Materials and Resources*
Students will be knowledgeable about and make use of the materials and resources available for participation in the arts in various roles.
- Standard 3:** *Responding to and Analyzing Works of Art*
Students will respond critically to a variety of works in the arts, connecting the individual work to other works and to other aspects of human endeavor and thought.
- Standard 4:** *Understanding the Cultural Dimensions and Contributions of the Arts*
Students will develop an understanding of the personal and cultural forces that shape artistic communication and how the arts in turn shape the diverse cultures of past and present society.

Additional Arts Standards at Bronx Preparatory Charter School

Visual Arts

Students will show sound technique and personal style in at least one form of the visual arts. They will convey ideas, emotion and experiences through their work, and will be able to analyze and judge visual relationships to improve their productions.

Students will become familiar with the art of different cultures and periods in history and will use that knowledge to analyze and interpret individual works and to compare those works with one another. Students can interpret and evaluate the aesthetic qualities of works and overall genres and interpret meaning of a work from various perspectives.

Music

Students studying an instrument will learn to play it accurately, expressively and with good technique. Other students will develop good technical technique in singing. Students will also learn to read music and to compose simple pieces of music for their voice or instrument of choice.

Students will learn to listen to and comment thoughtfully on a wide variety of musical forms. They will critique music with respect to its aesthetic, structural, acoustic and psychological qualities. They will study music history and will learn to analyze and evaluate a piece of music with respect to the culture and time period in which it was composed.

Drama

Through participation as performers and as audience members, students will learn to understand and use the basic elements of theatre in order to communicate meaning effectively in their characterizations, improvisations and play writing. They will reflect on, interpret, and evaluate plays, analyzing dramatic exemplary dramatic texts to describe relationships among character, environment, genre, style and the resulting drama.

Students will also interpret how theatre reflects the beliefs, issues and events of societies past and present. They will describe the connections between the dramatic presentation and social and political thought.

and the effect of culture on the content and style of dramatic presentations. They have knowledge of the historical development of theater and can draw connections between the work and the period in which it was created.

Dance

Through their dancing and through watching dance performances students will learn to improvise, create and perform dances that demonstrate an understanding of choreographic principles, processes, and structures. They will also develop an ability to understand, interpret and evaluate dance, as well as the critical vocabulary to talk about it.

Students will learn to analyze the relationship between dancers and audience members in various dance contexts. They will recognize dances from many cultures and time periods and be able to discuss the functions that the dances played in those societies.

Fine Arts Program

Participating in the arts, and developing an understanding of the way in which the arts represent meaning and the human experience will be a vital component of every student's education at the Bronx Preparatory Charter School. Because of the school's commitment to students' artistic development and the time made available through a mandatory extended-day program, Bronx Prep students will have considerably more time to devote to music, the visual arts, dance and drama than they would in a traditional school setting. Memorable, in-depth artistic experiences, rather than a vast number of more shallow learning opportunities will characterize the school's approach to the arts.

The school will not schedule weekly art and music classes into the traditional school day. Students will instead work toward achievement of the arts standards during the extended-day period each day from 2:45 – 4:30. Middle school students will be required to devote at least half of their extended day time (or more than four hours on average per week) to activities in dance, music, theatre and the visual arts. Senior academy students, who will have more flexibility during the extended day hours, will be required to spend at least one third of their extended day time on artistic endeavors.

Students will have core distribution requirements in dance, music, theatre and the visual arts, but they will not be required to divide their time equally among the four forms. If a student has an inclination toward music, for example, he or she will be encouraged to devote considerable time to developing his or her musical talent, whether by learning to play a musical instrument or through participation in a choral group. Another student drawn to drama may participate in every school play possible at the middle academy, and by eleventh grade find herself writing and/or directing student plays. A young man with an affinity for drawing will be encouraged to complement drawing activities with painting classes and a study of art history.

The specific activities of the extended day period will depend each semester on the talents of the faculty and on partnerships with outside programs that we arrange. For the purposes of the extended day time, the year will be divided into quarters. Courses may run one, two, three or four quarters, and may be 2- or 3- day-a-week courses. In special cases, students may be excused from our programs to participate in outside neighborhood programs that develop their artistic talents. Students participating in the New York Boys Choir, for example, would be excused from extended day activities at times when the school's extended day activities conflict with choir rehearsals.

The following is an overview of the kinds of artistic activities that would take place during the extended day.

Visual Arts

At Bronx Prep students will have the opportunity to draw, sculpt, paint, do graphic design on computers, and create projects that combine these techniques and others as they learn to express themselves visually.

We are delighted to have entered into a partnership with the Bronx Museum of the Arts, a wonderful institution about five blocks from the proposed school site. The museum sees education as primary to their mission, and their expertise far outweighs our own in the provision of arts education to young people. In fact, their education director, Eathon Hall, developed the arts partnership for the Northstar Academy in Newark, NJ, before he moved from the Newark Museum to the Bronx Museum of the Arts. His experience with a very successful charter school partnership will be of tremendous value to our program. (Pages 174 a, b & c contain a description of the types of programming that this partnership will enable Bronx Prep to do.)

At the Bronx Museum and throughout the city, students will have multiple opportunities to appreciate others' art, taking trips to museums and to art displayed elsewhere in the New York community in order

to reflect on, interpret, and evaluate the visual characteristics of a variety of works. The Metropolitan Museum of Art, the Museum of Modern Art and the Studio Museum of Harlem are just the first three on a long list of possible sites for field trips.

Music

Bronx Prep will develop a classical music performance program, beginning with training in stringed instruments for interested students, continuing with a chamber music program once students develop an ability to play the instruments, and potentially growing into a small orchestra should there be adequate student interest. Students will receive individual and small-group training in the violin, cello, and eventually other instruments appropriate for a chamber ensemble or orchestra through a program that recruits and pays music students from Julliard, the Manhattan School of Music and other music schools to give lessons to Bronx Prep students. Students will be provided with instruments for use at school and for practice at home. Talents of faculty members, along with the interests of both faculty and students, will dictate other musical performance courses that may take place during the extended day.

As with the visual arts, opportunities for students to play music or enjoy it as an audience member abound in New York City. The school will develop programs in partnership with not-for-profit organizations in the city that have musical expertise and a commitment to develop the musical talents of young people, as well as free or affordable music performances for student excursions.

Drama

Extended-day drama programs will expand the considerable work that students will do reading, interpreting, discussing and writing plays in their English and Spanish courses. Opportunity to perform plays will be limited in those classroom contexts, and so the extended-day drama program will be an opportunity for students to become performers. The school will produce a major school play or musical each year, which will be performed both for the students and for parents and community members. It will be a time-consuming, intense experience for the participants, be they performers, set & costume designers, stagehands, choreographers or the faculty director. Students will also be granted leave from extended day time on the school site if it enables them to participate in community or school plays elsewhere. For example, two high schools in the neighborhood, Cardinal Hayes and Aquinas, do major musical productions each year for which young men and women throughout the neighborhood are encouraged to audition.

Many New York City theatre companies run programs that involve students as either participants or active audience members. We plan to access such programs on a regular basis. We will always be on the lookout for affordable opportunities to see productions by Repertorio Espanol (in Spanish) and the uncountable English-language theatre companies in New York.

Drama will also be used at Bronx Prep to help students explore issues of health, family dynamics and values. A not-for-profit theatre company called Plays for Living has written a set of plays around issues important to young people: racism, substance abuse, teen stress, violence, and many more. Plays for Living actors both perform the play and help school faculty to lead small-group discussions with students afterward on the issues presented in the performance. They are high-quality performances that spark important conversations among students, and we intend to use them on an occasional basis.

Dance

Participation in dance will enable students to work simultaneously toward standards in the arts and toward standards of physical fitness and health. Each year students will have dance choices as part of the extended day time, which may include jazz, ballroom, salsa, modern, merengue, yoga, traditional folk dances, tap, and ballet. The specific offerings each quarter will depend on the talents of individual faculty members and on partnerships the school develops with members of the not-for-profit dance community in New York. Dance will be integrated into musicals described as part of the drama program. As students get older, some may choreograph, as well as participate as dancers, in school musical productions.

As with all the arts, there are so many opportunities for students to dance or enjoy dance performances in New York City. The school will develop programs in partnership with not-for-profit organizations in the city that have expertise and commitment to developing the talents and appreciation of dance among young people. A particular favorite of the founders is the Alvin Ailey Dance Company, a modern dance company founded in the 1960s by an exceptional dancer, choreographer, and social critic, Alvin Ailey. The company's productions explore issues in African American history and the African American experience. We have begun conversations with the director of the Arts in Education program, and if the school receives a charter we will approach them immediately to seek a partnership. The National Dance Institute, the Bronx Dance Theatre, the Ballet Hispanico, and many other not-for-profit organizations have programs for public school students, and we plan to explore them, as well.



September 23, 1999

Ms. Kristin Kearns Jordan

[REDACTED]
New York, New York
[REDACTED]

Dear Kristin:

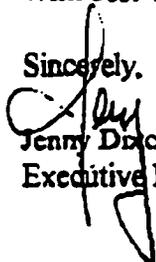
Bronx Museum Board member, Drew Hyde shared with us your overview for the Bronx Preparatory Charter School. The initiative you are developing is a very exciting one and we would welcome the opportunity to partner with you. Attached, you will find a brief overview of the education programs at the Bronx Museum prepared for you by Eathon Hall our Education Director. A talented and committed Museum educator Eathon helped to develop a charter school / museum partnership in Newark, New Jersey while at the Newark Museum.

We would like to meet with you at the appropriate time to explore a way the Bronx Preparatory Charter School might work with the Museum. Our existing programs, as outlined by Eathon, are one direction to explore as is designing a program that will meet with the goals of the Bronx Museum and the Bronx Preparatory School.

Drew explained that your application is due on Monday, should you need further information from us to assist you, please do not hesitate to contact me at: (718) 681-6000 ext. 130, or Eathon Hall at ext. 165. We look forward to working with you.

With best wishes.

Sincerely,


Jenny Dixon
Executive Director

CC: Drew Hyde
Eathon Hall

REDACTED

**The Bronx Museum of the Arts
Education Programs Overview**

Presented to the Bronx Preparatory Charter School

The Bronx Museum of the Arts proposes to partner with the Bronx Preparatory Charter School to provide quality arts-in-education resources in the visual and media arts through staff development and direct student services. The following core education programs represent some of the potential artistic development and arts integration initiatives the Museum can bring to Bronx Preparatory's Extended Day program and to integrate the arts into the classroom curriculum:

THE INTERPRETIVE ART PROGRAM (IAP) involves active student participation in an engaging thematic dialogue on the issues and ideas behind today's art and artists as featured in the Museum's exhibitions and permanent collection. A culminating hands-on interpretive art project that is process-oriented, allows students direct involvement in the artmaking process as they create individual and/or collective works based on themes explored in the gallery discussion. A trained Museum Teacher facilitates this 90-minute program. This program also emphasizes visual literacy and the development of critical thinking and observation skills, by employing the Visual Thinking Strategy (VTS).

THE ART & MEDIA SCHOOL established in the early 1980s in response to cutbacks in public school arts education programs sought to provide youth and adults studio-based instruction in fine (e.g. painting, drawing, and sculpture) and media arts (e.g. computer graphic design and video production). The studio-based courses stress technical instruction and basic skills training, while investigating continued academic studies and related career opportunities. High school art credits and portfolio development support students' artistic development in preparation for continued and advanced studies.

Working from the belief that students learn the most from their peers, **THE STUDENT DOCENT PROGRAM** places students at the center of the learning experience, motivating them to learn about art and Museums. Recruited by their classroom teachers and trained by Museum Educators, student docents lead their classmates and peers through exhibitions of contemporary art at the Bronx Museum. The goal of this innovative program is to explore the inherent complexities in art as students exchange observations and stimulating thought with their peers, with whom they share the same day-to-day experiences.

And, the perhaps the most critical link to successful integration of the arts into the classroom curriculum is a practical and consistent program for staff development. Through the Museum's **TEACHER INSTITUTE FOR THE ARTS**, teachers can learn how to utilize the Museum's collection and exhibitions to support other curricular areas, object-based learning and visual literacy in the classroom. Through artist residencies, workshops, courses and special events, teachers participate in hands-on, process-centered modes of learning which are modeled for classroom adaptation.

The above overview of some of the Museum core education programs gives a sense of the range of artistic activities the Museum can provide. The Education department looks forward to the opportunity to explore how these programs can be adapted to suit the unique needs of Bronx Preparatory and to open a dialogue for new and expanded programs and services.

THE BRONX MUSEUM OF THE ARTS' MISSION STATEMENT

The Bronx Museum of the Arts is a twentieth century and contemporary art museum founded in 1971, to serve the culturally diverse populations of the Bronx and the greater New York metropolitan area. The Museum has a long-standing commitment to increasing and stimulating audience participation in the visual arts through its Permanent Collection, special exhibitions, and education programs.

PERMANENT COLLECTION OVERVIEW

The Bronx Museum of the Arts permanent collection was initiated in 1986. The Museum's collection has become a unique artistic and cultural resource for its local constituents, while not duplicating the collection policies of other museums in the United States. Comprised of over 350 twentieth century and contemporary works of art in various media (e.g. drawings, paintings, mixed media, installations, photographs, and sculpture), the collection highlights the artistic production of artists of African, Asian, and Latin American ancestry. The Permanent Collection reflects the Museum's surrounding communities and audiences, largely composed of African American and Latino populations as well as an increasing number of African, Asian, Caribbean, Central and South American communities in the metropolitan area.

SPECIAL EXHIBITIONS OVERVIEW

Through its critically acclaimed exhibition program, the Bronx Museum has established a local and international reputation as a contemporary and multicultural art museum. As the only fine arts museum in the borough, the Museum presents ongoing special solo and group exhibitions of twentieth-century and contemporary art; exhibitions of contemporary and historical relevance to the Bronx and its residents; exhibitions based on the Permanent Collection; as well as thematic exhibitions that stimulate and expand discourse and scholarship, and promote cross cultural exchange.

New York State Health, Physical Education, and Family & Community Skills Standards

Standard 1: *Personal Health and Fitness*

Students will have the necessary knowledge and skills to establish and maintain physical fitness, participate in physical activity, and maintain personal health.

Standard 2: *A Safe and Healthy Environment*

Students will acquire the knowledge and ability necessary to create and maintain a safe and healthy environment

Standard 3: *Resource Management*

Students will understand and be able to manage their personal and community resources.

Benchmarks for Learning - Middle Academy

(These are drawn primarily from the New York State Education Department's Standards and Curriculum Resource Guide)

Health Education – Middle Academy

1. Students will understand human growth and development and recognize the relationship between behaviors and healthy development. They will understand ways to promote health and prevent disease and will demonstrate and practice positive health behaviors.

Students will:

- Integrate knowledge of basic body systems with an understanding of the changes that accompany puberty.
- Apply prevention and risk reduction strategies to adolescent health problems.
- Demonstrate the necessary knowledge and skills to promote healthy adolescent development.
- Analyze the multiple influences that affect health decisions and behaviors.

2. Students will demonstrate personally and socially responsible behaviors. They will care for and respect themselves and others. They will recognize threats to the environment and offer appropriate strategies to minimize them.

Students will:

- Assess potentially dangerous situations and demonstrate the skills to avoid or reduce their risks.
- Demonstrate personal and social skills that enhance personal health and safety.
- Understand the need for personal involvement in improving the environment.

3. Students will understand the influence of culture, media, and technology in making decisions about personal and community health issues. They will know and use valid health information, products, and services. Students will advocate for healthy families and communities.

Students will:

- Distinguish between valid and invalid health information, products and services.
- Recognize how cultural beliefs influence health behaviors and the use of health services.

- Demonstrate the ability to work cooperatively when advocating for healthy individuals, families and schools.
- Analyze how media and technology influence the selection of health information, products and services.
- Recognize the need to be an advocate for family and community health.
- Demonstrate the ability to access community health services for prevention, illness, and emergency.

Physical Education – Middle Academy

1. Students will perform basic motor and manipulative skills. They will attain competency in a variety of physical activities and proficiency in a few select complex motor and sports activities. Students will design personal fitness programs to improve cardiorespiratory endurance, flexibility, muscular strength, endurance, and body composition.

Students will:

- Demonstrate competency in a variety of physical activities (games, sports, and exercises) that provide conditioning for each fitness area.
 - Know that motor skills progress in complexity and need to be used in context of games and sports with additional environmental constraints.
 - Combine and integrate fundamental skills and adjust technique based on feedback, including self-assessment.
 - Understand the relationship between physical activity and the prevention of illness, disease, and premature death.
 - Develop and implement a personal fitness plan based on self assessment and goal setting, understand physiological changes that result from training, and understand the health benefits of regular participation in activity.
 - Develop leadership, problem solving, cooperation, and team work by participating in group activities.
2. Students will demonstrate responsible personal and social behavior while engaged in physical activity. They will understand that physical activity provides the opportunity for enjoyment, challenge, self-expression, and communication. Students will be able to identify safety hazards and react effectively to ensure a safe positive experience for all participants.

Students will:

- Develop skills of cooperation and collaboration, as well as fairness, sportsmanship, and respect for others.
 - Work constructively with others to accomplish a goal in a group activity, demonstrating consideration for others involved.
 - Understand the physical and environmental dangers associated with particular activities and demonstrate proper procedures for safe participation in games, sports, and recreational pursuits.
 - Understand the role of physical activity, sports, and game as a balance between cooperative and competitive behaviors and as a possible arena in which to develop and sharpen leadership and problem solving skills.
3. Students will be aware of and able to access opportunities available to them within their community to engage in physical activity. They will be informed consumers and be able to evaluate facilities and programs.

Family and Community Skills – Middle Academy

1. Students will use an understanding of the elements of good nutrition to plan appropriate diets for themselves and others. They will know and use the appropriate tools and technologies for safe and healthy food preparation.
2. Students will know the basic principles of home and community safety. They can demonstrate the skills necessary to maintain their homes and workplaces in a safe and comfortable condition. They can provide a safe and nurturing environment for themselves and others.
3. Students will understand and be able to manage personal resources of talent, time, energy, and money and make effective decisions in order to balance their obligations to work, family, and self. They will nurture and support positive relationships in their homes, workplaces, and communities. They will develop and use their abilities to contribute to society through pursuit of a career and commitment to long-range planning for their personal, professional, and academic futures. They will know and access community resources.

Students will:

- Understand how the family can provide or the economic, physical, and emotional needs of its members.
- Understand the resources available to them, make informed decisions about the use of those resources, and know some ways to expand resources.
- Are able to budget their time and money.
- Understand how working contributes to a quality living environment.
- Identify their own abilities and interests as possible guides to career choice.

Benchmarks for Learning – Senior Academy

(These are drawn primarily from the New York State Education Department’s Standards and Curriculum Resource Guide)

Health Education – Senior Academy

1. Students will understand human growth and development and recognize the relationship between behaviors and healthy development. They will understand ways to promote health and prevent disease and will demonstrate and practice positive health behaviors.

Students will:

- Understand human growth and development throughout the life cycle.
- Demonstrate the necessary knowledge and skills to promote healthy development into adulthood.
- Apply prevention and risk reduction strategies that can delay the onset or reduce the risk of potential health problems into adulthood.
- Evaluate how the multiple influences, which affect health decisions and behaviors, can be altered.

2. Students will demonstrate personally and socially responsible behaviors. They will care for and respect themselves and others. They will recognize threats to the environment and offer appropriate strategies to minimize them.

Students will:

- Recognize hazardous conditions in the home, school, workplace, and community and propose solutions to eliminate or reduce them.
- Evaluate personal and social skills that contribute to health and safety of self and others.
- Recognize how individual behavior affects the quality of the environment.

3. Students will understand the influence of culture, media, and technology in making decisions about personal and community health issues. They will know and use valid health information, products, and services. Students will advocate for healthy families and communities.

Physical Education – Senior Academy

1. Students will perform basic motor and manipulative skills. They will attain competency in a variety of physical activities and proficiency in a few select complex motor and sports activities. Students will design personal fitness programs to improve cardiorespiratory endurance, flexibility, muscular strength, endurance, and body composition.

Students will:

- Demonstrate proficiency in selected complex physical activities (games, sports, and exercises).
- Establish and maintain a high level of skilled performance and demonstrate mastery of fundamental movement forms and skills that can contribute to daily living tasks.
- Know the components of personal wellness (nutrition and weight control, disease prevention, stress management, safety, and physical fitness), establish a personal profile with fitness/wellness goals, and engage in appropriate activities to improve or sustain their fitness.

2. Students will demonstrate responsible personal and social behavior while engaged in physical activity. They will understand that physical activity provides the opportunity for enjoyment, challenge, self-expression, and communication. Students will be able to identify safety hazards and react effectively to ensure a safe positive experience for all participants.

Students will:

- Know the potential safety hazards associated with a wide variety of games and activities and are able to prevent and respond to accidents.
- Demonstrate responsible personal and social behavior while engaged in physical activities.
- Create a positive climate for group activities by assuming a variety of roles.

3. Students will be aware of and able to access opportunities available to them within their community to engage in physical activity. They will be informed consumers and be able to evaluate facilities and programs.

Family and Community Skills – Senior Academy

1. Students will use an understanding of the elements of good nutrition to plan appropriate diets for themselves and others. They will know and use the appropriate tools and technologies for safe and healthy food preparation.
2. Students will know the basic principles of home and community safety. They can demonstrate the skills necessary to maintain their homes and workplaces in a safe and comfortable condition. They can provide a safe and nurturing environment for themselves and others.
3. Students will understand and be able to manage personal resources of talent, time, energy, and money and make effective decisions in order to balance their obligations to work, family, and self. They will nurture and support positive relationships in their homes, workplaces, and communities. They will develop and use their abilities to contribute to society through pursuit of a career and commitment to long-range planning for their personal, professional, and academic futures. They will know and access community resources.

Students will:

- Analyze a wide range of factors related to managing personal resources to balance obligations to work, family, and self.
- Understand the basics of an individual/family budget and plan to obtain, use, and protect money and assets.
- Analyze abilities and interests in relation to careers, set long-term career goals, and develop a plan for progressing toward their goals.
- Understand the concept of entrepreneurship as it exists in today's economy.
- Develop job skills (e.g., communication, effective time management, problem solving, and leadership).

Electives

As students progress to the ninth grade and start the senior academy they will move to a new building, wear a new style of uniform and will begin to take a bit more control over their academic program through the selection of electives. All of these will symbolize an important rite of passage and the new expectations that the school will have for senior academy students.

Ninth graders will have completed the very structured core academic program at the middle academy, where no time was left for electives during the traditional school day. (Note, however, that the extended day program from 2:45 – 4:30 for both the middle and senior academies will allow for student choice making among a variety of activities in music, visual arts, drama and athletics). The senior academy core academic program will offer some flexibility during the traditional school day, as well. Students will still take English language arts, mathematics, science, and social studies for all four senior academy years. However, the second daily English period of the middle academy years will no longer take place, and many students will also have completed the Spanish requirement. Therefore, of the six periods for core academics during the traditional school day, students will have at least one, and sometimes two, to use for electives.

Electives will vary semester to semester, and will be opportunities for teachers and students to explore areas of interest outside of the core curriculum. Teachers will present their elective proposals to the principal for initial approval. These proposals will include benchmarks for learning, curriculum outlines and a list of necessary materials. The principal and faculty will choose together from among the initially approved electives the actual elective course offerings for the following semester. Some courses will be open to all senior academy students; others will be open to specific grade levels only. In making these decisions faculty will pay close attention to a balanced program – to ensuring some representation from the sciences and from the humanities. Proposals for electives in music, visual arts, drama and athletics will be considered separately as part of the extended-day program.

As the electives will depend on the passions and knowledge base of the faculty in any given year, it is impossible to give a precise list of course offerings here. Following are some examples of electives we hope to be able to offer.

- Oceanography
- Writers of the Harlem Renaissance
- Greek Mythology
- Russian History
- Math for Architects
- Woman Writers
- Concepts in Engineering
- History of the Dominican Republic & Puerto Rico
- Advanced Public Speaking
- African-American History
- Topics in Urban Studies
- Astronomy
- The Immigration Experience
- Geology
- Poetry Writing
- The History of New York City

Service Requirement

As part of Bronx Prep's commitment to the greater community of which we hope to be a part, all students must complete an annual service requirement. This requirement may be met by any activity in which the student's primary purpose is to contribute to community life or to assist another individual. This requirement reinforces the school's commitment to preparing young people who will be giving, contributing, caring members of the Bronx, New York and the world. We expect that students will find service activities to be tremendous learning experiences, as well. By the end of each year students will submit an essay to their social studies teachers discussing their service activities and what they learned from them.

These volunteer (unpaid) activities may take place either on the school site, for example through tutoring a fellow student, or off campus, for example at a hospital or other community organization. Adults in the school, including school staff and volunteer parents, will run the community service program, assembling ideas for service activities, approving students' projects and keeping tabs on students' hours. Students will be encouraged to construct their own community service projects aligned with their personal interests.

Middle academy students will be required to perform 40 hours of community service annually, senior academy students 60 hours. Up to half of the hours spent on the community service requirement may occur during extended day hours; the remaining half will take place on their own time. If students would like to get ahead, these hours may be completed during the summer before the outset of the school year; they may not, however, be left to complete during the summer after the close of the school year.

Culminating Projects - Program Purpose & Description

To help students integrate the wide variety of topics they have studied, and to connect their school learning to the “real world,” students and teachers will spend a block of time in June and July of each year working on a culminating project. During this time, once students have completed the core requirements for the grade, extended periods of time will be carved out of the standard school day to work on these creative synthesizing projects. In the middle academy and in grades 9 & 11 of the senior academy, these projects will all be group activities. Teachers & students will design them together over the course of the year, and be ready with a plan to execute once the last month of the school year arrives. In grades 10 & 12 students will do individual projects, which they will plan with the help of their teachers. The seniors’ capstone project will take the form of a substantial written paper that makes a meaningful argument, which they will present to the school community and defend through a process of questions and answers.

Examples of Possible Culminating Projects

1. After assessing the desires of the community through a scientific questionnaire, students will plan a recreational facility (a children’s playground perhaps, or something more appealing to older residents) for some vacant land in the community. Students will investigate which land is available and which government entities they can work with on the project. When the land is found, students will look into surface structures to see if it would support a pond, they will look for any chemicals in the soil, and will then plan an aesthetically pleasing design. Students will give attention to the demographics of the community, the available budget, the biology of the selected land, and a multitude of other factors when writing up a plan. At the end of the project students may submit the plan to the parts department for consideration.
2. Students will design Bronx Preparatory Charter School’s web page, taking care to bring the school’s mission to life. The page will showcase memorable and defining moments at Bronx Prep, students’ and parents’ comments, photographs of students, sample student work, articles on different events, application guidelines, and more.
3. Students will produce a users-guide (“meet your community”) in which they will list the resources available in the community to community residents. This will require the students to investigate and learn more about the community resources. Once they have gathered the information, they will edit and publish a users-guide, and will then run a distribution campaign. Students will be providing a valuable service to their community as they acquire useful skills.
4. Students will select a country and put on a cultural showcase. Unlike the relatively common food, costume and dance displays, students will be challenged to exhibit some of the cultures that are represented in the student body from historical, geographical, socioeconomic, and artistic perspectives. Students will present characteristics of the different cultures through a variety of academic disciplines, therefore integrating the broad variety of subjects they have studied.
5. Students will write & perform a mystery play, in which lots of the clues require math (angle at which someone viewed something), science (DNA of a hair), history (reference to an event), references to literature, understanding of Spanish phrases and more. Students will design sets, costumes, and all other technical elements of the play. Afterward students may write critiques of the play for a magazine.
6. Students will develop an approach to give relief to a foreign country struck by drought, considering such complexities as food transport, AID relief, and the effect of imported food on farmers & food

markets. Students may integrate their own hands-on greenhouse experiments to explore farming issues and techniques.

Note: With all the individualized remedial support built in throughout the school year, we expect a low rate of student failure to meet grade-level benchmarks for academic performance. If, however, a student has not met the learning standards for his or her grade level by June, they may have to take time to make up this work during the time when other students are working on the culminating project. If by the end of the school year in mid-July students who have still not met the benchmarks for their grade level, they will likely be required to repeat the school year.

Attachment IV-28
Diploma Requirements

If the Bronx Preparatory Charter School is granted a charter to open serving 5th and 6th graders in September of 2000, and the charter is renewed upon review in 2005, then the first graduating class would be expected to complete their course of study in July of 2007. Students would be granted a diploma only if they met all the learning standards described in Attachment IV-25/26 and if they meet the requirements established by New York State for a Regents diploma. At present the standards for a Regents diploma include passing the following Regents examinations:

1. English Comprehensive Exam
2. Mathematics Course A
3. Global History (including Geography, Economics, and Government)
4. U.S. History and Government (including Geography and Economics)
5. One Science Regents exam: the Living Environment; Biology; Chemistry; or Physics

The school will be attentive to the evolving Regents standards and will modify our own graduation standards in accordance with any changes adopted by the State of New York.

TAB

V

PERFORMANCE

ASSESSMENT

Attachment V-29***State-Required Examinations***

The Bronx Preparatory Charter School will look forward to measuring student achievement and to making ourselves accountable to the public by participating in New York State's standardized testing. These tests will give us an opportunity to measure student progress toward meaningful academic criteria and will also give us the opportunity to report the degree of progress in relation to other schools that serve our community. This information should prove invaluable to the primary stakeholders in the school, students and parents, as it will give them meaningful feedback on whether we are providing a quality education.

We will participate in the following New York State Intermediate Level Tests:

- 5th Grade: Social Studies.
- 8th Grade: English Language Arts; Math; Science; Social Studies; Second Language.

At the senior academy level we will participate in the mandatory Regents examinations described in Attachment IV-28, as well as in the optional Regents exams. Those optional exams, which would enable students to achieve an advanced Regents diploma, include a second science examination and that for Math Course B.

Attachment V-30*Other Standardized Testing*

The Bronx Preparatory Charter School intends to measure student achievement using McGraw-Hill's Comprehensive Test of Basic Skills (CTBS) every year for all students. We will test the students both at baseline (immediately after admission to the school) and every spring thereafter. We have chosen this particular instrument both because it is a well-regarded test and because it is the test used by the New York City public schools. We will make these scores publicly available so that parents and students can judge the school's performance over time and in relation to other schools in the community.

At a minimum we will administer to all students, grades 5-12, the exams of reading comprehension, math computation and concepts, vocabulary, and language mechanics and expressions.

Attachment V-31

Other Assessment Tools

It is critical that teachers and administrators evaluate students' academic performance and their behavior on an almost constant basis. Teachers will be expected to review and comment on all student work in a timely manner. Teachers and administrators will be expected to respond to inappropriate student behavior immediately when it occurs, and to acknowledge students' good conduct. In addition to this ongoing assessment and feedback, students will have more formal opportunities to have their performance evaluated on a regular basis. Because colleges and the "real world" will evaluate our graduates' skills, knowledge and character in a wide range of ways, it is important that we prepare them by doing the same. Following is an overview of some of the methods the school will use to assess and record students' progress.

Teacher-Constructed Assessments and Assessments Provided by Textbook Companies

To see how students are doing vis-à-vis the school's specific learning standards, the school's leaders and teachers will develop a wide variety of assessment tools. These assessments will include written work, like essays, stories, poems, and plays; tests and quizzes; research projects; artistic projects; teachers' written evaluations of student performance on oral reports, ability to participate in class discussions, and other verbal activities; science projects and lab reports. Different skills and content areas will naturally lend themselves to different forms of assessment. Many of the curriculum materials we plan to use will provide support to teachers on appropriate instruments to assess student learning.

Portfolios

Students and teachers will work together to assemble a portfolio that best demonstrates his or her achievement of each of the benchmarks for his or her grade level. Bronx Prep portfolios will not be random collections of impressive student work. They will instead pull together the student's best work on each of the benchmarks described in Attachments IV-25 and 26. The portfolio item that best demonstrates a student's ability to graph linear equations may be a math test in which he or she does so independently. The portfolio item that best demonstrates a student's ability to use evidence to support an argument is likely to be a piece of writing or a teacher's evaluation of an oral report. A lab report may demonstrate a student's understanding of the difference between potential and kinetic energy. Student work that does not meet the benchmarks will not be included in a portfolio, so the portfolio will also act as an indicator of which standards have *not* been reached. A quick glance at students' portfolios should make clear where the "holes" in a student's are, and should assist teachers in planning lessons that practice students' weak areas.

Standardized Testing

The standardized tests described in Attachments V-29 and V-30 will assess our students' performance in relation to that of the school system as a whole. They will be easily communicated to and deciphered by parents and the community at large. We also expect that they will provide feedback to the school administration and faculty on areas of relative strength and weakness in our academic program. Finally, by their high-stakes nature they will help prepare students mentally for the format and time pressure of SATs and other tests required for college admission.

Verbal Skills: Oral Presentations, Conversation Skills

Beginning in the seventh grade, students will be expected to be able to give clear, coherent oral presentations on academic topics. Once students have completed the required public speaking course that is a required part of the seventh grade language arts curriculum, they will be required to demonstrate their ability to speak in front of a group of people. Throughout their Bronx Prep career students will be required to participate in shared inquiry discussions in which they interpret and evaluate texts, make thoughtful arguments, listen and respond to their peers, and broaden their understanding of material

through this group learning process. Teachers will regularly assess students' oral skills, and will include progress on these skills when determining students' grades.

Regular Written Reports to Parents

The information management software we have elected to use will provide teachers and administrators with an extraordinary ability to communicate with each other and with parents. *Achieve* is a web-based product developed at the Academy of the Pacific Rim Charter School in Boston to provide a feedback and accountability system for schools constructed directly from the school's own achievement standards for students. The school's standards, which will be downloaded onto the software, will frame and drive 1) teachers' lesson plans on a day-to-day basis, 2) teachers' assessments of student progress, and 3) regular reports to parents. Teachers will record all assessments of student work on the *Achieve* system, and the software makes it quite easy to keep tabs on the skills and content that students have mastered and those on which students still need additional practice and instruction. Simple computer macros built into the software create progress reports for parents on their children's academic progress and behavior, literally at the touch of a button. We plan to provide parents with progress reports every other week in English or Spanish, whichever they prefer.

Report Cards

On a quarterly basis the school will issue formal report cards to students and parents. These report cards will include traditional A, B, C, D and F grades in each subject, along with teachers' comments, a report on attendance and a record of major disciplinary incidents. These report cards, unlike the progress reports issued every other week, will be a part of the student's permanent record that will be made available to colleges and other organizations to whom students request that we send a transcript.

Attachment VI-32

Parental and Staff Involvement in Governance and Administration

The success of the proposed charter school rests upon the development of a school culture in which all members of the school community share common goals for student achievement and work collaboratively to achieve them. In order for this to take place, parents and teachers will need to have 1) regular, honest communication, 2) a shared stake in the success of the school, and 3) a genuine voice in the way that the school is run. The school has planned several mechanisms – some formal and some informal – to ensure that all three take place.

Communication

Communication must be constant, and must take place among the school staff, between staff and parents, and among parents.

Among staff: When teachers sign on at Bronx Prep, they must be prepared to work as a community of educators to focus their shared vision of a school and then enact a plan for its realization. They will need to embrace difference and varied perspectives, and be prepared to air and resolve conflict in a way that preserves the trust and mutual respect within the community. To foster coherence of purpose and collaborative work, we will hold a two-hour staff meeting every Wednesday afternoon to provide a forum for staff issues and to facilitate common planning. The teachers' work environment outside of this two-hour meeting will also enable the development of a teacher community. The staff room will be common productive and/or social space – in addition to couches it will have cubicles with phones and laptop loading docks for teacher use. Teachers will have two free class periods per day, during part of which they will be free to plan on their own or with other teachers. (During some of this time they will be expected to make themselves available to students for extra help). One of the most common complaints about the teaching profession is that teachers feel disconnected from other adults; we hope that all of the above-described mechanisms will guard against teacher loneliness and isolation.

A new kind of tool to foster communication among adults in the school is an information management software package called *Achieve*, which we will use to enable all staff members to share information electronically. Communication and record-keeping with the software will become a part of each teacher's daily routine, and as a result a wealth of information will be available to all staff members: teachers' lesson plans (explicitly linked to the school's standards), grades and comments about each student's performance in each class, a log of communications with parents, and attendance and discipline information. The software company is also currently building in an e-mail component for teachers to encourage one-on-one communication. Each teacher will be loaned a laptop computer so that they can use the software at school or at home. This software will also be very valuable to the school heads, who will keep close track of student progress without the discomfort of micro-managing the staff.

Between staff and parents: The *Achieve* software, which keeps a running record of each child's progress, will also provide the means for very regular written communication between school and parents. We plan to print a written progress report for parents every two weeks, which will give them immediate feedback on their children's areas of particular success or difficulty. These progress reports will include specific, individualized suggestions to parents on how to help their child at home. (These reports will be translated into Spanish for many parents).

We will hold regular teacher/parent conference evenings and open-house days for parents. More important, though, is that parents will be welcome in the school at all times – whether they are there to volunteer or simply to check out their children's learning environment. If they have an interest in sitting in on their children's classes, we will ask them simply to give the teachers the courtesy of a call

beforehand to arrange it. We will encourage teachers to be open to these visits, and to recognize the value that a parent's having direct knowledge of what happens in the classroom.

Because many of the parents speak Spanish, communication in Spanish will be common among adults. We will hire as many staff members as possible who speak Spanish, and will encourage the others to learn. (Because the development of students' English skills is so important, however, teachers and students will communicate in English except during Spanish class).

As important as the frequency of communications is the tone of the contact between teachers and parents. Teachers and parents are partners in this endeavor, meaning that they must genuinely listen to one another and address each other as equals. The school norm will be for parents and teachers to use each other's first names. At every South Bronx venue at which the planning of this school has been discussed, parents have expressed in unsubtle terms their frustrations with teachers who do not take their perspective seriously.

Among parents: The school will facilitate the development of a Parents' Association controlled by the parents of children at the school. Each October students' parents will elect a PA president, who will serve for that year as a Trustee of the school. The PA president will be elected by a simple majority of parents present at an evening meeting, for which reasonable advance notice has been given. (Proxy votes will also be permitted). Beyond the election of the President, the PA will be free to organize its own governance and committee structure. Less formal parent gatherings will also be encouraged and facilitated by the school staff.

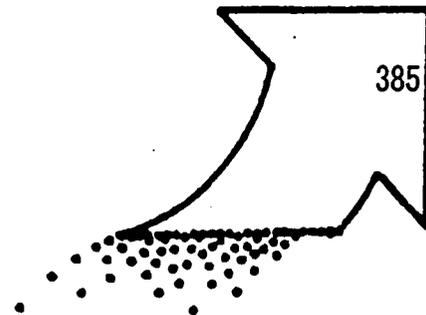
Shared Stake

Parents: Parents have the ultimate stake in their child's success. We must ensure that that also develop a stake in the success of the school overall. Bronx Prep will develop a culture in which parents volunteer regularly in the school. The Center for School Change in Minnesota has developed a wonderful list of possibilities for parent involvement, which fall into six categories: 1) assisting at the school; 2) helping arrange experiences in the community; 3) serving on a decision-making committee; 4) increasing resources available to the school; 5) sharing information about the school with community members; and 5) helping other parents develop parenting skills. We will present these suggestions to parents and encourage them to come up with their own ideas, as well. (See pages 190 a & b)

Governance and Administration

Parents, the adults with the greatest stake in the school's success, will have a formal role in the school's governance. A seat on the school's Board of Trustees will be reserved for the president of the Parents' Association, an organization to be facilitated by the school but controlled by the parents. Unlike the terms of the other school trustees, which will be renewable every three years by a vote of the board, the parent trustee will be elected each year in October by the Parents Association, with every parent at the school given an equal vote. The president of the Parents' Association will serve as the formal liaison between the parents and the Board of Trustees, in addition to fulfilling his or her other governance duties as a Trustee.

Teachers and staff will have representation on the Board of Trustees through the Executive Director. Perhaps more important, though, as the school's day-to-day operators they will have enormous opportunity to shape the norms and activities that enable the school to fulfill its mission. Together with the principal, teachers will flesh out the school's academic program. In their classrooms they will set a caring tone that fosters learning. They will collaborate to ensure that their lessons complement and reinforce each other's. Through their special talents and innovation they will create extended-day programs, special assemblies and other events throughout the school year. Their work will give the school both its character and its form.



Parent/Community Involvement Opportunities

Fifty Ideas

Assist at the School

1. Share information with a student or class about a hobby.
2. Share information with a student or class about a career.
3. Share information with students about a country in which you have lived or visited.
4. Tutor one or a small group of students in reading, math or other areas.
5. Help coach an athletic team.
6. Help check a student's written work.
7. Help publish a school or classroom newsletter. (This can also be done at home.)
8. Help sew or paint a display.
9. Help build something (such as a loft in a classroom).
10. Help students work on a final exhibition or project. (This can also be done at home or at a work place.)
11. Help answer the school phone.
12. Help plan and/or build a new playground for the school.
13. Help plan a theme-based presentation for students.
14. Help present a theme-based program for students.
15. Demonstrate cooking from a particular country or culture to students.
16. Share a skill with the faculty.
17. Help students plan and build an outdoor garden or other project which beautifies the school.
18. Help coach students for academic competitions such as Odyssey of the Mind or Math Masters.
19. Bring senior citizens to school to watch a student production.

Extend Learning by Helping to Arrange Experiences in the Community

1. Help set up a student internship at your business, organization or agency.
2. Host a one day *shadow study* about your business or organization for one or a small group of students.
3. Go on a local field trip with a teacher and a group of students.
4. Go on an extended (3-5 day) cross country field trip with a teacher and students.
5. Contact a local business or organization regarding possible cooperation.
6. Help create a natural area/learning space outside the building.

Center for School Change ~ Hubert H. Humphrey Institute of Public Affairs

Serve on an Advisory or Decision-Making Committee

1. Volunteer for the schoolwide site council.
2. Serve on a school committee which reports to the site council.
3. Represent the school on a district committee.
4. Serve as an officer on the school's PTA.
5. Help organize a parent organization for the school.
6. Help design a parent and/or student survey for the school.
7. Help conduct and/or tabulate the results of a parent survey regarding the school.

Increase Financial Resources Available to the School

1. Help write a proposal which will bring new resources to the school.
2. Donate materials to the school.
3. Arrange for a business or other organization to donate materials to the school.
4. Help with a fund-raising campaign for the school.

Share Information

1. Serve as a member of a *telephone tree* to help distribute information quickly.
2. Write a letter to legislators about the school.
3. Write a letter to school board members about the school.
4. Go to a school board meeting to advocate for the school.
5. Go to another school to provide information about your school.
6. Help create a brochure or booklet about the school.
7. Help translate information about the school into a language other than English.
8. Help translate at a parent/teacher conference for people who don't speak English well.
9. Provide transportation to a parent/teacher conference for a parent who needs a ride.
10. Write an article about school activities for publication.
11. Arrange for a political leader (mayor, council member, state representative, etc.) to visit the school.

Help other parents develop parenting skills

1. Teach or help with a class on ways to be stronger parents.
2. Help produce a video tape on ways to be effective parents.
3. Help write, publish and distribute a list of parenting tips.

The Center for School Change
 Hubert H. Humphrey Institute of Public Affairs
 University of Minnesota
 301 19 Ave. South
 Minneapolis, MN 55455

1906

TAB

VI

PARENTS &
COMMUNITY

Attachment VI-33

Evidence of Community Support

The proposed Bronx Preparatory Charter School enjoys the support of a strong and growing coalition of South Bronx community members and organizations. In fact, the charter school organizing group has a number of participants who two years ago tried unsuccessfully to develop a new public middle school in partnership with District 9. These community members were organized via an ecumenical grass-roots group called South Bronx Churches, which several years earlier had planned and launched the very successful Bronx Leadership Academy, a public high school operated as a partnership between the Board of Education and South Bronx Churches. Their effort to organize a middle school within District 9 encountered insurmountable obstacles within the school system, however, so the group put the project on hold and determined to wait for more auspicious circumstances. The charter school group initiated by Kristin Kearns Jordan quickly aligned forces with the original South Bronx Churches team, and the two efforts are working in concert. The letter from Lee Stuart on the following page describes the relationship between Bronx Prep and South Bronx Churches. Though her position requires her to be formally independent of the charter school, she has been and continues to be a significant contributor to the effort. Other consultants and advisors in the South Bronx include: Bob Lopez, a guidance counselor from IS 148, Joseph Landes, Director of the Pace Academy at Middle School 118, Father Peter Gavigan and Maria Peguero of Our Lady of Victory Church (the school's landlord), Antonio Torres, youth director at a neighboring parish, Christ the King, Joseph, Elliot, Rector of St. Paul's Episcopal Church, and Sylvia Lamboy-Pizarro, a mother whose two children will seek to enroll in Bronx Prep.

A concrete measure of parental demand for school alternatives in District 9 is the response that the School Choice Scholarships Foundation received when it offered private school scholarships to low-income children in 1997 and 1998. The foundation received more than 4,000 applications from students in District 9 -- more than 20% of eligible children there. This response rate was the highest of any school district in the city. This response makes sense given the educational crisis in District 9, which has some of the most troubled public middle schools in New York State (further information in Attachment VI-34). Neighboring Bronx Districts 7 and 12 were also among the top four districts in terms of parental demand for School Choice Scholarships.

To look at parental dissatisfaction with public school options slightly differently, one can examine private school enrollment. In the South Bronx the vast majority of educational options for families outside of the public schools are the Catholic schools, where tuition averages \$1,800 a year. Nowhere else in the city are the Catholic schools as filled to capacity as they are in the immediate vicinity of the proposed Bronx Preparatory Charter School. According to a 1998 analysis of capacity undertaken by the Archdiocese of New York, in the 11 schools closest to the proposed charter school site there are a total of only 32 available seats *total* in grade six -- an average of 3 seats per school. In grade 5 the average availability is just 3 seats, as well. This capacity crunch is extraordinary given the extreme poverty of the neighborhood. Eighty-eight percent of District 9 public school students, and a similar percentage of its Catholic school students, qualify for the federal free- and reduced- price lunch program. The congressional district in which the school is located has the lowest household income in the nation - \$16,683 a year per the 1990 census. Parents' willingness to spend such a significant portion of their family income on private school tuition is a clear measure of their desire for alternatives to the current public options.

South Bronx Churches
230 Alexander Avenue
Bronx, NY 10454
718-402-3676 fax 718-402-1807

July 29, 1999

Kristin Kearns Jordan

[REDACTED]
New York, NY [REDACTED]

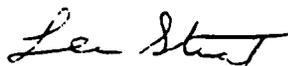
Dear Kristin,

Thank you very much for the invitation to serve on the board of the Bronx Preparatory Charter School. Although I am honored that you asked, I regret that at the moment I will be unable to serve in a formal capacity. As the lead organizer of South Bronx Churches I don't get involved in governance or direction of other projects with which we have developed, or are developing a relationship. I am of course supportive of the charter school, and am willing to talk to you or others about it at almost any time. I fully intend to encourage leaders from SBC's member institutions to participate, and hope that you are open to that.

I have been invited to a symposium or something at St. John's University on October 16th (blurb included). I thought I was to speak to the experience of the Bronx Leadership Academy, but lo and behold, I also find I am supposed to speak on the efforts of starting a charter school. I called them and told them I wasn't really doing that, but I knew someone who was, and who would be good, and they were quite happy to have you join me. Do you want to do that?

I am off to Wisconsin for a week, so we can talk when I get back.

Sincerely,



Lee Stuart
Lead Organizer

REDACTED

191a

September 23, 1999

Ms. Kristin Kearns Jordan
[REDACTED]

New York, New York
[REDACTED]

Dear Kristin:

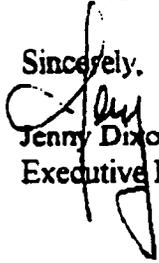
Bronx Museum Board member, Drew Hyde shared with us your overview for the Bronx Preparatory Charter School. The initiative you are developing is a very exciting one and we would welcome the opportunity to partner with you. Attached, you will find a brief overview of the education programs at the Bronx Museum prepared for you by Eathon Hall our Education Director. A talented and committed Museum educator Eathon helped to develop a charter school / museum partnership in Newark, New Jersey while at the Newark Museum.

We would like to meet with you at the appropriate time to explore a way the Bronx Preparatory Charter School might work with the Museum. Our existing programs, as outlined by Eathon, are one direction to explore as is designing a program that will meet with the goals of the Bronx Museum and the Bronx Preparatory School.

Drew explained that your application is due on Monday, should you need further information from us to assist you, please do not hesitate to contact me at: (718) 681-6000 ext. 130, or Eathon Hall at ext. 165. We look forward to working with you.

With best wishes.

Sincerely,


Jenny Dixon
Executive Director

CC: Drew Hyde
Eathon Hall

REDACTED

Attachment VI-34*Expected Impact on Existing Public and Nonpublic Schools in the Geographic Area*

Public Schools: Bronx Prep's intended impact on the public schools in District 9 is to be a model of quality public education in the district, which we hope will inspire energy and replication in schools throughout the Bronx. The public schools in District 9 are in a crisis, particularly at the junior high and high school levels. On city-wide tests given to 3rd, 5th, 6th and 7th graders in 1999, District 9 had the lowest reading scores of all 32 NYC school districts, with just 23.4% of students at or above grade level. It also had the lowest mathematics scores of the 32 districts, with 27.5% of students at or above grade level. The reading scores represented a decline of more than five percentage points from the previous year. On the new New York State 4th grade reading test administered in January 1999, District 9 was among the lowest three NYC school districts, with only 16.6% of pupils meeting the state standards. In New York City only its two neighbors, Bronx Districts 7 and 12, had fewer students meeting state standards. Students in Districts 7 and 12 will be within commuting distance from Bronx Prep, and we expect many of them to apply and enroll.

While District 9 enrolls less than 2% of New York State's public school students, it houses 8% of the state's SURR schools. A full 44% (4 of 9) of District 9's intermediate schools are on the SURR list. Ray Domanico, the former executive director of the Public Education Association, investigated whether significant academic improvement had occurred in New York City's lowest-performing 14 school districts, the so-called "Educational Dead Zone." Domanico reported in a March 30, 1999 memo to the Industrial Areas Foundation that while in the last three years there has been some gain in elementary school scores in District 9 as all over the city, "the middle schools are a mess." Not a single District 9 middle school has made significant improvement in the last three years. On June 22, 1999 Chancellor Crew announced his intention to close 13 of New York City's more than 1,000 schools. Two of the 13 are middle schools in District 9. Given this situation, we believe we have a moral obligation to offer young people in the community an alternative. We do not anticipate that this will do harm to the public schools. Our belief is to the contrary - that enabling parents to make choices exerts a healthy competitive pressure on all the schools in the community.

Given the high drop-out rates at the neighboring Taft High School, many of the students Bronx Prep would serve would ordinarily leave school before graduation, and so Bronx Prep should actually increase the number of public school enrollees in the area. It would do so while alleviating, rather than aggravating, persistent overcrowding at District 9 schools. As Bronx Prep would serve these students for only about 2/3 the cost of the public schools, the school would also provide the district with cost-saving opportunities.

Private Schools: With very few exceptions, the private school alternatives in the South Bronx are Catholic schools. As described in Attachment VI-33, the eleven closest Catholic elementary schools to the proposed site of the Bronx Preparatory Charter School are essentially enrolled to capacity at the 5th and 6th grade levels and regularly turn away students because of a lack of classroom space. It is extraordinary that these schools are at capacity given the poverty of the neighborhood. There is considerable unmet demand for quality education in the community, and we do not expect that the presence of a small charter school will threaten the viability of the neighboring private schools. The Catholic *high* schools in the neighborhood also have strong enrollment, and it is not expected that they will be adversely affected once the Bronx Preparatory Charter School students reach the ninth grade. All the neighborhood Catholic School principals whom we have contacted have expressed support for the charter school, as they are genuinely concerned about the educational options of the children in the neighborhood.

TAB

VII

SCHOOL

G-OVERNANCE

Attachment VII-35*Proposed Board of Trustees*

- a) **Morton Ballen** is a New York City public schoolteacher. He began his career teaching humanities at Baker High School in Baker, Louisiana through the Teach For America program. He has also taught at the Sol Plaatje Educational Center in Kimberley, South Africa and the New York Settlement School on the Lower East Side of New York City. He has spent three summers as a teacher trainer and then school director of the Teach For America Institute.
- b) **Roberto Garcia** returned to teaching in 1996 after eight years of public service in Connecticut, first as the director of welfare for the city of Bridgeport, and later as a special funds administrator in the office of the state Treasurer. He has served in a number of for-profit and not-for-profit organizations, including a five-year service as the national program director for the National Puerto Rican Forum. He has taught various subjects in a wide variety of school settings, including Spanish at PS 83, a middle school in the Bronx. He is currently teaching math and history at Stamford High School in Stamford, CT. He was born and raised in the South Bronx.
- c) **Eric Grannis** is an associate at the law firm of [REDACTED]. Before attending Columbia Law School he served for two years as a legislative assistant to Congressman Charles B. Rangel of Harlem and then as a teacher of mathematics and biology in East Harlem's District 4. As a lawyer he has served as a law clerk for Judge Peter K. Leisure of the US District Court, S.D.N.Y. and as an associate at Debevoise and Plimpton.
- d) **Kristin Kearns Jordan** is the executive director of the School Choice Scholarships Foundation, a private scholarships program for low-income elementary schoolchildren in New York City. She began her career at the Student/Sponsor Partnership, a financial aid and mentoring program for at-risk high school students in New York City, serving as associate director for three years, and then served as a special projects director at the Center for Educational Outreach and Innovation at Teachers College, Columbia University.
- e) **Année Kim** is the executive director of the Patrons Program, a financial and educational development program for elementary schools in New York City's low-income communities. She sits on the Board of Facing History and Ourselves, a not-for-profit organization that teaches students about moral choices through the lens of the Holocaust, and on the Board of Camp Fiver, a new summer camp for disadvantaged youths. She began her career in the financial services field as a bond trader at Lehman Brothers.
- f) **Jane Martínez** is the executive director of the Student/Sponsor Partnership. She began her career as a teacher in Washington Heights' District 6 through the Teach For America program, and then served as executive director of Teach For America-New York. She has also served as the development director of La Salle Academy, a high school on the Lower East Side and as the associate director of the School Choice Scholarships Foundation.
- g) **Franklin Sanchez** is a professor of teacher education at Mercy College in the Bronx. He spent many years teaching and serving in administrative roles in the public schools of New York City. He is also one of the co-founders of the proposed Brooklyn Collegiate Charter School, whose application is currently being prepared for submission to the SUNY Charter Schools Institute.
- h) **Richard Schubart** is a teacher of history and a former dean of admission and financial aid at Phillips Exeter Academy. He was appointed to the Exeter faculty in 1973 after earning his Ph.D. in history at the State University of New York at Binghamton. He is the author of two dozen books on the

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teaching and learning of history, curriculum development and independent schools. He has also served as the executive director of the Association of Boarding Schools and as the chairman of the Federation of American and International Schools.

- i) **John M. Walderman, CFC** is the President of Rice High School in Harlem. Over the course of his career he has taught every grade level from 5-12 in Catholic schools throughout New York City and the surrounding area, and has served as dean, assistant principal and principal in various schools. He is currently the regional associate of the National Catholic Education Association and the Chairman of the Middle States Evaluation Team of the Immaculate Conception School in Lodi, NJ.
- j) **President of the Bronx Preparatory Charter School Parents Association**

Joseph T. Wilson Jr.
Vice President
Fixed Income

Mr. Wilson is currently a Vice President in the Loan Sales and Trading Group. Loan Sales and Trading is part of [REDACTED] High Yield business.

Mr. Wilson joined [REDACTED] in August 1986. Upon completion of the firm's Management Training Program he joined the Corporate Finance Department. In 1990, he transferred to the Corporate Banking Group where he structured priced and marketed bank loan transactions. From 1995 to the present, Mr. Wilson has worked in the High Yield Department selling and trading distressed debt (bank loans, public bonds and equity) and performing leveraged bank loans.

Mr. Wilson received a Bachelor of Science degree in Accounting from North Carolina A&T State University in 1982 and a Master of Business Administration from The Johnson Graduate School of Management at Cornell in 1986. He is a CPA and has passed all three levels of the CFA Exam.

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Attachment VII-36

Qualifications of Trustees

Each member of the Bronx Preparatory Charter School's Board of Trustees will have two primary roles: 1) to provide general oversight over the operations of the school, ensuring that the school serves the purpose described in its mission statement, and 2) to provide the school with resources, either directly or indirectly, that help the school carry out its mission.

In order to serve the first role, Trustees will need to share the founders' commitment to providing a quality public education to disadvantaged young men and women in the South Bronx, and to preparing them rigorously for college. They will also need to be intelligent, thoughtful, honest people, who have an awareness of the challenges faced by young people living in poverty.

In order to serve the second role, each Trustee must possess knowledge and skills in one or more of the following areas:

1. College preparatory education and/or education issues of disadvantaged youths
2. Educational assessment
3. Fund raising (the school's operating budget will not be fully covered by public funding)
4. Finance
5. Law – employment, corporate, education
6. Organizational strategy and management
7. Concerns of Bronx Prep parents
8. Community issues in the Bronx
9. Public relations
10. The politics of education reform in general and of charter schools in particular
11. Real Estate

Attachment VII-37*Terms of Trustees*

The trustees will have renewable one-year terms. The parent member of the Board of Trustees who serves as a Trustee as part of his or her presidency of the Parents' Association will be eligible for additional terms only if 1) he or she is re-elected president of the Parents Association or 2) is nominated by the Board of Trustees as a Trustee through the general channel.

Attachment VII-38*Appointment of Trustees*

The first Board of Trustees will consist of those individuals listed in Attachment VII-35 of this charter application. The general channel for appointment of Trustees to the Board is that Trustees will be elected or re-elected for a term of one year at the annual meeting of the Board of Trustees by a majority of the entire board. The election of a new Trustee, either resulting from the resignation or removal of another Trustee, or from the Board's desire to expand the number of Trustees, may take place at any time. The Trustee shall be appointed until the next annual meeting, at which time he or she would be eligible for a full-year term. One or more of the Trustees may be removed, with or without cause, by the action of not less than a majority of the Board of Trustees.

The one Trustee with a unique process of appointment to the Board is the president of the Parents Association. He or she shall be appointed to the Board through his or her election by the students' parents in at the October meeting of the Parents Association. Notice will be sent home to parents of this election at least a week in advance. A majority of those present to vote or voting by proxy shall elect the president of the Parents Association. Other parents at the school shall be eligible to serve as Trustees by appointment through the general channel.

Attachment VII-39*Responsibility and Obligations of Trustees*

The Board of Trustees of the Bronx Preparatory Charter School will be responsible for setting overall policy for the school in all areas, including but not limited to policies regarding the school's finances, educational program, enrollment, public relations, personnel and general management.

The Board of Trustees, which will report to the SUNY Charter Schools Institute, will also be responsible for oversight of all aspects of the school, including the use of public and private funds. The Board will follow the framework set up in Attachment IX-57 to conduct programmatic and fiscal audits of the school, and will adopt any additional measures it or the SUNY Charter Schools Institute sees fit to ensure that the school's fiscal and educational practices are sound.

Following are additional specific responsibilities and obligations of the Bronx Preparatory Charter School's Board of Trustees:

1. Raising private funds for the school from foundation, corporate and individual sources
2. Overseeing the long-term planning of the school
3. Advocating on behalf of the school to individuals and organizations involved with school reform and to individuals and organizations in the wider New York community
4. Providing the school staff with credibility, access to information and other non-financial resources
5. Overseeing the legal strategy of the school and response to legal issues
6. Managing the executive director; hiring subsequent executive directors
7. Overseeing the school's communications strategy with parents, press and other members of the community
8. Designating a discipline committee of the Board to run hearings regarding staff recommendations for a student's suspension of four or more days or for a student's expulsion.

Attachment VII-40*Reporting of School Officials to Trustees*

The Executive Director will report to the Board of Trustees. The Trustees will delegate the management of other school staff to the Executive Director.

The school's lead founder, who will serve as its first executive director, will serve as a voting member of the Board on all issues except her own terms of employment and compensation. The Board shall make a determination at the appropriate times about whether each subsequent Executive Director shall be a member of the Board of Trustees.

Attachment VII-41

Compliance with the Freedom of Information Law / Protection of Students' Privacy

Compliance with the Freedom of Information Law

The Bronx Preparatory Charter School will comply fully with New York State's Freedom of Information Law (FOIL).

The only individuals with authority to release proprietary information about the school, its activities, or the activities of its employees are the Executive Director and members of the Board of Trustees. The Executive Director may authorize another employee to release such information in specific cases.

When the school receives a request for information that the Executive Director determines must be disclosed under FOIL, it will make that information available to the person requesting it within five business days. Generally the school will respond to those requests by mail, although the two parties may arrange a mutually convenient alternative.

In cases where the school can not provide the person making the request with the requested information within five business days, the school will provide a written acknowledgement of the request, along with an explanation of the reasons for delay and an approximate date on which the information will be made available.

The school may decline the request to release a registered record 1) in order to protect an individual against unwarranted invasion of personal privacy, 2) in order to protect against such records being compiled for law enforcement purposes, and 3) because such records are inter-agency or intra-agency materials which are not statistical tabulations or data, instructions to employees that affect the public or a final policy, or 4) the school determines it is subject to a campaign of harassment due to repeated requests for information.

Appeals of Board of Trustees decisions regarding the Freedom of Information Law shall follow the grievance procedure described in Attachment VII-43.

Protection of Students' Privacy

Upon enrollment of their children at the Bronx Preparatory Charter school, and again at the beginning of each school year, parents will be apprised of their rights under the Buckley Amendment regarding access to and the confidentiality of student records. Information in the students' records will not be released without the written consent of the parent or as noted under FERPA requirements.

School employees all share the responsibility to protect students' privacy. Information regarding individual students will be kept in two places. Attendance, academic and disciplinary information on students, as well as teachers' informal written comments and notes on conversations with parents, will be stored on an employee-only information network facilitated by the *Achieve* software, which can be accessed only through employees' passwords. This information shall not be transferred from school-owned computers to any other electronic machine or network. Any printouts of these records or copies thereof must be kept secure on school property. Individual academic, disciplinary and attendance information will be downloaded regularly from the electronic files and placed in students' permanent hard files, which will also include any psychological evaluations, medical histories and Individual Educational Plans. Permanent files will be stored in a locked file cabinet in the school's administrative office. These files will not be removed from the school site.

A child's parent or guardian is entitled to review and inspect their child's permanent file, accompanied by an advocate/representative should they desire, and shall not be charged a fee to do so. Unless

documentation from the courts mandates otherwise, both parents shall have this right. They shall be entitled to review and inspect their child's permanent file within 45 days of making a written request to do so.

Attachment VII-42

Compliance with the Open Meetings Law

All meetings of the Bronx Preparatory Charter School will be open to the general public, subject to the exceptions described below, as required by the Open Meetings Law. For the purposes of this attachment, a "meeting" shall be understood as any scheduled gathering of the school's Board of Trustees at which a quorum of the Trustees shall be present. This also includes meetings of committees and subcommittees of the Board of Trustees.

The school will publicize to the general public all meetings scheduled at least one week in advance by

- Providing an advisory to members of the media;
- Advising the president of the Parents Association in order that he or she might disseminate the information should he or she see fit; and
- Posting at one or more designated public locations at least 72 hours in advance.

Meetings scheduled less than a week in advance shall still be publicized by providing an advisory to the media, and by publicly posting information to the extent practicable and on the fastest possible time frame after the meeting has been scheduled.

Meeting advisories and postings will include the time and location of the scheduled meeting. They may, but are not required to include the purpose the meeting and topics of discussion.

Exceptions to the Open Meetings Law

The Board of Trustees may hold closed meetings to discuss the following topics:

- Judicial or quasi-judicial proceedings, such as student disciplinary hearings and employee grievance hearings); and
- Any matter that is confidential under New York State or federal law, such as the discussion of a student's individual handicapping conditions or academic records.

The Trustees may not discuss any other school/public business at closed meetings.

Executive Sessions

Executive sessions may be conducted for the following purposes only:

- Matters that would imperil the public safety if disclosed;
- Any matter that may disclose the identity of a law enforcement agent or informers;
- Information relating to current or future investigation or prosecution of a criminal offence, which would imperil effective law enforcement if disclosed;
- Discussions regarding proposed, pending or current litigation;
- The medical, financial, credit, or employment history of a particular person or corporation, or matters leading to the appointment, promotion, demotion, discipline, suspension, dismissal or removal of a particular person or corporation;
- The preparation, administration or grading of examinations; and
- The proposed acquisition, sale or lease of real property or the proposed acquisition of securities, or sale or exchange of securities held by a public body, but only when publicity would substantially affect the value thereof.

The Board of Trustees will not vote to appropriate public monies during an executive session.

Executive sessions must be conducted as part of an open meeting and may not be considered a separate meeting. The following steps must be taken in order to enter into an executive session:

- A motion for an executive session must be made at an open meeting, specifically identifying the general area of the subjects to be considered or the subjects themselves; and

- The motion to conduct an executive session must be carried by a majority vote of the Board of Trustees' total membership.

Any member of the Board of Trustees and others authorized by the Board may attend an executive session.

Minutes

Minutes will be taken at all open meetings and made available to the public within two weeks of the meeting. Minutes shall include a summary of all motions, proposals, resolutions and other matters voted upon, as well as the vote thereon. The minutes need not include any matter not required to be disclosed to the general public.

Minutes will also be taken at executive sessions and made available to the public within a week after the session. The minutes shall record each action taken by formal vote and include the date, the final determination of each action and the vote thereon.

Grievance Procedure

Any aggrieved person has standing to enforce the provisions of the Open Meetings Law by initiating an "Article 78 Proceeding." In any such proceeding a court of law may, in its sole discretion and upon a showing of good cause, declare an action taken in violation of the Open Meetings Law void in the whole or in part.

Attachment VII-43
Grievance Committee

The Bronx Preparatory Charter School will establish a Grievance Committee to address complaints brought against the school by any individual or organization for alleged violations of the law or the school's charter regarding the management and operation of the school. The Grievance Committee shall be comprised of two Trustees elected by the Board of Trustees, two parents elected by the Parents Association and two teachers elected by the entire teaching staff.

All complaints for alleged violations of the law or the school's charter regarding the management and operation of the school shall be brought first to the Board of Trustees, who shall be required to submit them in a timely manner to the Grievance Committee. The Grievance Committee shall consider the allegations and make non-binding recommendations to the Trustees for a response to the complaint. The Trustees shall then make a decision about whether to take action in response to the complaint and if so what action should be taken.

Appeals of the Board of Trustees' decision may be made to the SUNY Charter Schools Institute.

Attachment VII-44*Code of Ethics*

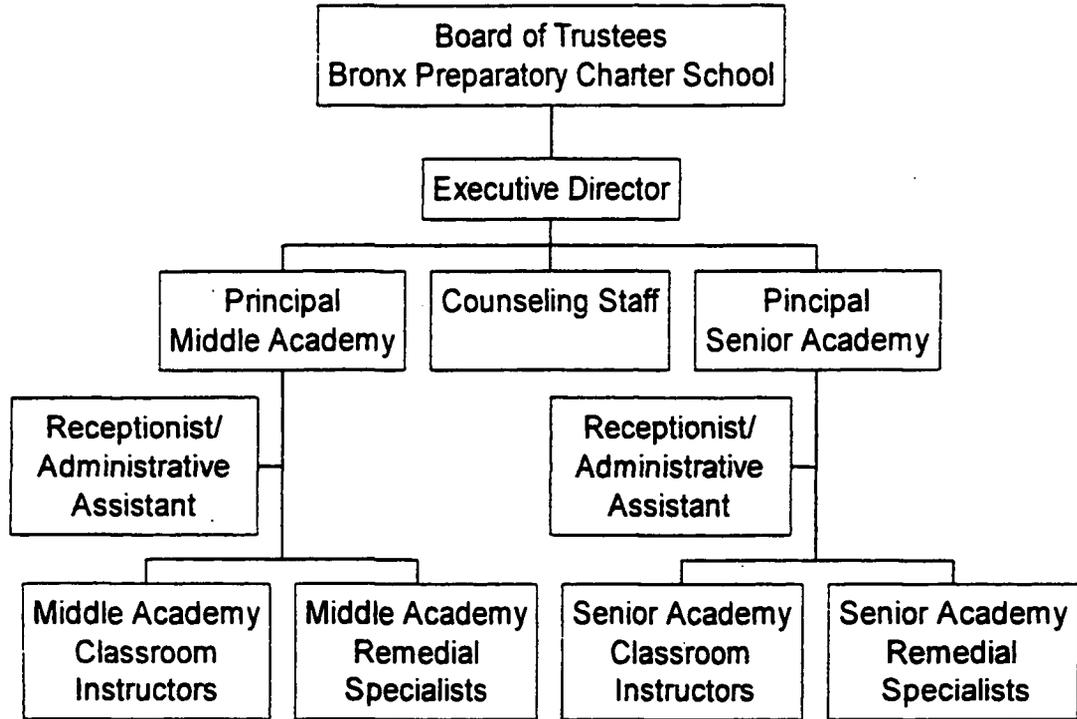
The Trustees and employees of the Bronx Preparatory Charter School will be held to the highest standards of professional conduct and ethics. The code of conduct in this attachment pertains particularly to Trustees of the school; expectations for staff conduct and ethics are described at length in Attachment VIII-46.

A Trustee may not participate in Board deliberations regarding matters in which he or she has a direct or indirect financial interest, including but not limited to deliberations reviewing a proposed contract or project. It is considered to be a financial interest of a Trustee if he or she or a member of his or her family is an owner, partner, stockholder, director, trustee or employee of any company with business before the Board. (All charter school Trustees must submit a complete financial disclosure form).

A Trustee may not use his or her position to acquire any gift or privilege worth \$50 or more that is not available to a similarly situated person. Trustees will avoid engaging in activities that would appear to be unduly influenced by other persons who have a special interest in matters under consideration by the Board. If an occasion arises in which a Trustee is approached by a person or organization having a special interest in a matter under consideration by the Board, the Trustee must write a letter disclosing all known facts prior to participating in a Board discussion of the matter. The Trustee must file the disclosure in such a way as to have his or her interest formally noted in the school's Board minutes.

Trustees are prohibited from disclosing confidential information that they may acquire through participation on the school's Board of Trustees. They are also prohibited from using such confidential information to further their own personal interests.

**Organizational Structure
Bronx Preparatory Charter School**



Bronx Preparatory Charter School shall contract with outside organizations for other school functions, including accounting, food services, custodial services, and counseling. The custodian who serves the other users of the middle school building shall provide the custodial services by contract. In the first year and perhaps thereafter, the Martin Luther King Health Center will provide our students with counseling services free of charge. The school will facilitate acquiring parental permission for students to receive counseling at the health center.