Message to Students, Parents, and Guidance Counselors

The 2004-2005 Specialized High Schools Student Handbook describes the programs and admissions procedures of the specialized high schools in New York City, which are: Fiorello H. LaGuardia High School of Music and Art and Performing Arts, Bronx High School of Science, Brooklyn Technical High School, High School for Mathematics, Science and Engineering at City College, High School of American Studies at Lehman College, Queens High School for the Sciences at York College, and Stuyvesant High School. These schools were established under New York State Law 2590–Section g. All students must be residents of New York City to apply. Each school provides students with a unique opportunity to pursue special interests and to develop their talents. Entrance into these schools is by competitive examination except for Fiorello H. LaGuardia High School of Music and Art and Performing Arts which is by audition only.

Within these pages, you will find a great deal of useful information about programs in the schools, admission procedures, travel information, and a calendar of important dates. It is a handbook that can be used by students, parents, teachers, and guidance counselors. It also contains two complete sample examinations for the specialized high schools. It is important to familiarize yourself with the information contained within these pages.

The Specialized High Schools Student Handbook is a project of the New York City Department of Education, Office of Student Enrollment Planning and Operations and Division of Assessment and Accountability.

For more information on other New York City public high school programs, see the Directory of the New York City Public High Schools.
# CONTENTS

Message to Students, Parents, and Guidance Counselors ................................................................. 2
Important Information for the Specialized High Schools Admissions Test (SHSAT) ........................................ 4
Important Information for the Fiorello H. LaGuardia High School of Music and Art and Performing Arts .............. 5

## SECTION 1: The Specialized High Schools

Fiorello H. LaGuardia High School of Music and Art and Performing Arts .................................................. 6
Bronx High School of Science ...................................................................................................................... 6
Brooklyn Technical High School ................................................................................................................ 6
High School for Mathematics, Science and Engineering at City College ...................................................... 7
High School of American Studies at Lehman College ............................................................................... 7
Queens High School for the Sciences at York College ................................................................................. 7
Stuyvesant High School ............................................................................................................................ 7

## SECTION 2: Application & SHSAT Basics

An Overview of the Specialized High Schools Application Process ............................................................ 8
SHSAT Special Exceptions and Make-Up Tests ....................................................................................... 9
Test Description and Materials ................................................................................................................. 9
Filling in the Answer Sheet ...................................................................................................................... 10
Scoring, Reporting, and Review Procedures ......................................................................................... 12
Discovery Program ............................................................................................................................... 12

## SECTION 3: SHSAT Study Guide

Study Tips .................................................................................................................................................. 13
Tips for Test Day .................................................................................................................................... 13
Verbal ...................................................................................................................................................... 14
Mathematics .......................................................................................................................................... 20

## SAMPLE TESTS

General Directions ................................................................................................................................... 22
Sample Answer Sheet, Form A ............................................................................................................. 24
Sample Test, Form A, for the Specialized High Schools ...................................................................... 26
Sample Test, Form A, Explanations of Correct Answers ....................................................................... 50
Sample Answer Sheet, Form B ............................................................................................................. 59
Sample Test, Form B, for the Specialized High Schools ...................................................................... 60
Sample Test, Form B, Explanations of Correct Answers ....................................................................... 84
Sample Math Problems for Grade 9 Students ...................................................................................... 93

**Important Information for the SHSAT**

Public, private, and parochial schools will be notified of the times of the Specialized High Schools Admissions Test (SHSAT) administrations. Students must take the written examination at the testing site indicated below based on the geographic district in which the student's school is located. All students with special needs in both Grades 8 & 9 will take the test at Stuyvesant High School.

### Testing Dates for Both 8th and 9th Grade Students

<table>
<thead>
<tr>
<th>Grades</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>All current 8th grade students</td>
<td>Sat. &amp; Sun., October 23 &amp; 24, 2004</td>
</tr>
<tr>
<td>All current 9th grade students, 8th and 9th grade students with special needs, 504 Accommodations, and extended time</td>
<td>Sat., November 13, 2004</td>
</tr>
<tr>
<td>All 9th grade Sabbath observers, and 8th and 9th grade Sabbath observers with special needs, 504 Accommodations, and extended time</td>
<td>Sun., November 7, 2004</td>
</tr>
<tr>
<td>Make-up test (with special permission only; documentation from your counselor is required as to why you were unable to take the test on the assigned dates)</td>
<td>Sat., November 20, 2004</td>
</tr>
<tr>
<td>Students new to NYC test (records must show that you arrived in NYC after the November make-up test; contact your counselor or Regional Learning Center)</td>
<td>September 2005</td>
</tr>
</tbody>
</table>

### Testing Locations for Both 8th and 9th Grade Students

#### Eighth Grade Students

<table>
<thead>
<tr>
<th>Gr. 8 Students attending schools in</th>
<th>Borough</th>
<th>Testing Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Districts 1-6</td>
<td>Manhattan</td>
<td>Stuyvesant</td>
</tr>
<tr>
<td>Districts 7-12</td>
<td>Bronx</td>
<td>Bronx Science</td>
</tr>
<tr>
<td>Districts 13, 14, 15</td>
<td>Brooklyn</td>
<td>Stuyvesant</td>
</tr>
<tr>
<td>Districts 16-23, 32</td>
<td>Brooklyn</td>
<td>Brooklyn Technical</td>
</tr>
<tr>
<td>Districts 24-30, 33</td>
<td>Queens</td>
<td>Long Island City</td>
</tr>
<tr>
<td>District 31</td>
<td>Staten Island</td>
<td>New Dorp</td>
</tr>
</tbody>
</table>

#### Ninth Grade Students

<table>
<thead>
<tr>
<th>Gr. 9 Students attending schools in</th>
<th>Borough</th>
<th>Testing Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Districts 1 &amp; 2 (Manhattan)</td>
<td>Manhattan</td>
<td></td>
</tr>
<tr>
<td>All Brooklyn Students</td>
<td>Brooklyn</td>
<td>Technical</td>
</tr>
<tr>
<td>All Staten Island Students</td>
<td>Staten Island</td>
<td></td>
</tr>
<tr>
<td>All Bronx Students Districts 3-6 (Manhattan)</td>
<td>Bronx</td>
<td>Manhattan</td>
</tr>
<tr>
<td>All Queens Students</td>
<td>Queens</td>
<td>Long Island City</td>
</tr>
</tbody>
</table>

All Gr. 8 and Gr. 9 students with special needs will take the test on Saturday, November 13, 2004 at Stuyvesant. Sabbath observers will take the test on Sunday, November 7, 2004 at Stuyvesant.
Important Information for Fiorello H. LaGuardia High School of Music and Art and Performing Arts

Eligibility for these auditions is limited to students who are residents of New York City.

Students may audition for the following studios:
• Art      • Dance      • Drama      • Instrumental Music      • Technical Theatre      • Vocal Music

Students and parents considering LaGuardia are invited to a Showcase Performance on Saturday, October 16, at 10:30 a.m.

Students should bring a copy of their most recent report card.

Students may wish to bring a light snack. Individual auditions may be delayed and students may be kept for a full day.

It is the responsibility of candidates to be aware of all audition procedures as currently described in this book and in the Directory of the New York City Public High Schools.

### 2004–2005 AUDITION DATES

Dates are scheduled according to the borough in which your school is located, not where you live.

<table>
<thead>
<tr>
<th>BOROUGH</th>
<th>LAST NAME</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brooklyn</td>
<td>A–L</td>
<td>Saturday, November 6, 2004</td>
</tr>
<tr>
<td></td>
<td>M–Z</td>
<td>Sunday, November 7, 2004</td>
</tr>
<tr>
<td>Manhattan</td>
<td>A–L</td>
<td>Saturday, November 20, 2004</td>
</tr>
<tr>
<td></td>
<td>M–Z</td>
<td>Sunday, November 21, 2004</td>
</tr>
<tr>
<td>Queens/Staten Island</td>
<td>A–L</td>
<td>Saturday, December 4, 2004</td>
</tr>
<tr>
<td></td>
<td>M–Z</td>
<td>Sunday, December 5, 2004</td>
</tr>
<tr>
<td>Bronx</td>
<td>A–L</td>
<td>Saturday, December 18, 2004</td>
</tr>
<tr>
<td></td>
<td>M–Z</td>
<td>Sunday, December 19, 2004*</td>
</tr>
</tbody>
</table>

*There are no Dance or Drama auditions on Sunday, December 19, 2004.

Bronx students auditioning for Dance or Drama, with last names beginning with M–Z, should report as follows:

<table>
<thead>
<tr>
<th></th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>M–R</td>
<td>Sunday, November 21, 2004</td>
</tr>
<tr>
<td>S–Z</td>
<td>Sunday, December 5, 2004</td>
</tr>
</tbody>
</table>

### AUDITION TIMES

<table>
<thead>
<tr>
<th>CANDIDATES AUDITIONING FOR</th>
<th>TIME</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>One Studio</td>
<td>8:00 a.m.</td>
<td>Saturday or Sunday according to first letter of last name</td>
</tr>
<tr>
<td>Two Studios</td>
<td>7:30 a.m.</td>
<td>Saturday or Sunday according to first letter of last name</td>
</tr>
<tr>
<td>Three or More Studios</td>
<td>7:30 a.m.</td>
<td>Saturday AND Sunday no matter what letter the candidate’s last name begins with. Two auditions will be held on Saturday and the candidates will report again on Sunday at 7:30 a.m. to complete the auditions.</td>
</tr>
</tbody>
</table>

Appointments cannot be changed. There are absolutely no make-ups.

### AUDITION EXCEPTIONS

Those students who have conflicts as a result of religious observance may audition on either the Saturday or Sunday of their school’s scheduled weekend.

Students taking the SHSAT who have a conflict with the audition schedule are to report for their audition(s) on the weekend assigned to their borough on the Saturday or Sunday for which there is not a conflict with the SHSAT.
The Specialized High Schools

There are seven specialized high schools in New York City. At six of these schools, admission is based on the score attained on the competitive Specialized High Schools Admissions Test (SHSAT). The exception is Fiorello H. LaGuardia High School of Music and Art and Performing Arts (LaGuardia High School) where acceptance is by audition and a review of academic records.

General descriptions for the specialized high schools can be found in the Directory of the New York City Public High Schools. Below is more detailed information about these schools and programs.

Fiorello H. LaGuardia High School of Music and Art and Performing Arts

100 Amsterdam Avenue, New York, New York 10023
Telephone: (212) 496-0700  Website: www.laguardiahs.org
E-Mail: laguardiahs@hotmail.com
Subways: A, B, C, or D to 59th St., 1 or 9 to 66th St.
Buses: M5, M7, M10, M11, M66, or M104.

The Fiorello H. LaGuardia High School of Music and Art and Performing Arts is the only public high school in the world to offer a complete program in the academics (foreign languages, Advanced Placement English, social studies, mathematics, and science; preparation for the Intel Science Talent Search), along with professional-level training in the arts. Students in the Dance program will study ballet and modern dance, audition techniques, and recording. In Drama, the focus is on theatre preparation through courses in improvisation, performance, and theatre games. Instrumental and Vocal Music courses include theory; composition; and small- and large-group performance in orchestra, band, chorus, and ensembles. In addition, the Instrumental Music Department has developed a major in electronic music. In the area of Fine Arts, computer graphics, ceramics, stone and metal sculpture, photography, stage design, etching, and silk screen printing are offered. Each year's program culminates in performances. The 2,600 students at LaGuardia High School can expect to put in a longer school day and, at performance times, will be required to spend many extra hours in rehearsal. Auditions will be held at the school.

ART students will need a portfolio of 10-20 pieces of original artwork done in a variety of media. The artwork should be from observation, imagination, and memory, and labeled appropriately. Photographs—not originals—of threedimensional works may be included. For their audition, students will be given drawing assignments, including drawing the human figure from observation, a still life, and a drawing from imagination, and memory, and labeled appropriately. Photographs—are expected to perform prepared selections without accompaniment. Applicants will be tested for rhythm and tonal memory and will be asked to sight-read.

VOCAL MUSIC students should prepare a song to sing without accompaniment for their audition. The musical selection can be classical or popular in style. Students will be tested for rhythm and tonal memory.

TECHNICAL THEATER Audition: Read one play: West Side Story, A Raisin in the Sun, or Julius Caesar. Bring in a prepared visual aid representing your interpretation of a moment in a scene for one of the following areas: costume, scenery, or lighting.

Bronx High School of Science

75 West 205th Street, Bronx, New York 10468
Telephone: (718) 817-7700
Website: www.bxscience.edu  E-Mail: reidy@bxscience.edu
Subways: 4, B (weekdays, rush hours only), or D to Bedford Pk. Blvd.  Buses: BX1, BX2, BX22, BX 26C, BX28, BX 32, BX 39, BQE Liberty Lines Express from Manhattan and Gagnon Bus Service from Queens.

Located on the "educational mile" in a beautiful setting in the northwest Bronx, Bronx Science's 2,600 students comprise the most diversified student body in the world.

Special courses in mathematics include advanced topics in geometry and algebra, probability and statistical inference, and advanced computer science. In the life sciences, students may study microbiology and physiology, human genetics, and evolution. In the physical sciences, advanced courses are offered. Engineering and architectural drawing, telescope making, computerized graphics, and medical illustration are among the courses offered in the fine arts. Enrichment courses are also offered in the humanities.

Students are provided opportunities for independent research. Bronx Science has had more than twice as many finalists in the Intel Science Talent Search than any other school in the nation. In addition, there is a full range of extracurricular activities, including orchestral and vocal music programs.

Brooklyn Technical High School

South Elliot Place at DeKalb Avenue, Brooklyn, New York 11217
Telephone: (718) 858-5150  Website: www.bths.edu
Subways: 2, 3, 4, 5 (rush hours only) to Atlantic Ave.; G to Fulton St.; A to Jay St.; M, N, R to DeKalb Ave. or Pacific St.; or Q to DeKalb Ave.  Buses: B15, B22, B25, B37, B38, B41, B54, B63, or B67.

Brooklyn Technical High School is committed to providing an outstanding educational experience, in the areas of engineering, the sciences, and computer science, to the 4,100 students who comprise its student body.

During the ninth and tenth grades, all students take an academic core and begin to explore the fields of engineering, science, and computers through hands-on experience in fully equipped laboratories, computer centers, shops, and theory classes.
For the eleventh and twelfth grades, Tech students choose one of the twelve major areas of concentration, organized in schools: Aerospace Engineering, Architecture, Chemical Sciences and Chemical Engineering, Civil Engineering, Electronic and Electrical Engineering, Graphic Communications, Industrial Design, Mechanical Engineering, Arts and Sciences, Biomedical, Math-Science, and Computer Applications.

While specializing in these areas, students continue their academic core. It is important to note that ALL Tech students meet the requirements to enter ANY field of study on the college level, regardless of their major. However, they are particularly well prepared in their major area.

High School for Mathematics, Science and Engineering at City College
138th Street and Convent Avenue, New York, New York 10031
Telephone: (212) 312-4800 Website: www.qhssyc.org

The High School for Mathematics, Science and Engineering at City College provides an educational experience in which students are challenged to expand their intellect and to develop habits of inquiry, expression, critical thinking, and problem solving, as well as problem solving, research, and presentation. The high school’s rigorous instructional program focuses on mathematics, engineering, and science.

The curriculum encompasses core courses and advanced studies including writing and composition, history, literature, language, mathematics, science, engineering, and the arts. The courses are integrated with collegiate experiences throughout the core and elective courses, including a variety of summer institutes related to individualized student interests. Additional enrichment opportunities are planned, such as the development of school publications and academic competitions, including a Math Team, Science Olympiad, and Robotics.

Students will have the opportunity to complete high school requirements in the third year of study and during their fourth year of high school to enroll in college courses related to their field of interest.

High School of American Studies at Lehman College
2925 Gouven Avenue, Bronx, New York 10468
Telephone: (718) 329-2144
Subways: 1, 2, 3, 9, A, C, or E to Chambers St. Buses: M1, M6 to Broadway & Chambers St.; or M10, M22 to Chambers & West St.

The High School of American Studies at Lehman College is a college preparatory school with an emphasis on American History. The school provides a liberal arts education in which all students are encouraged to complete four years of English, mathematics, science, and foreign language, in addition to an expanded American History curriculum. Students have the opportunity to take Advanced Placement courses, and Lehman College courses and seminars for college credit. The school’s mission is twofold: to graduate students prepared to meet the demands of higher education and to develop citizens prepared to meet the challenges and responsibilities of a democratic, pluralistic society.

The focus on American studies requires students to engage in a three-year chronological study of American History. Students also have the opportunity to look at the United States in a global context and as part of the entire continent. The curriculum integrates the arts, music, literature, and technology, wherever applicable. Classroom instruction will utilize interactive methods, audiovisual technology, computer software, and research projects based on materials from major research libraries. Instruction in this rigorous academic college program utilizes a challenging classroom approach to learning. Students have access to the college library, a state-of-the-art physical education center, and other college facilities.

Students are given the opportunity to engage in independent research with Lehman College faculty members, participate in internships in specialized programs, gain proficiency in a foreign language, and complement their high school course of study with specially designed college-level courses and seminars. Students who complete high school requirements in three years have the opportunity to enroll in Lehman College courses for college credit in their senior year.

Queens High School for the Sciences at York College
94-50 159th Street, Jamaica, New York 11451
Telephone: (718) 657-3181
Website: www.qhssyc.org E-Mail: qhssatyc@yahoo.com

The Queens High School for the Sciences at York College emphasizes science, mathematics, and technology education. Students who seek a rigorous academic education receive a comprehensive high school education with the addition of an extra class each day in Science Research, Mathematics Research/Mathematics Team, or Technology Education. All students receive instruction in carrying on research and have the opportunity to develop an Intel research project by the senior year. Students are assigned to research project advisors who mentor them throughout their four years of high school.

The education program provides cross-curricular learning experiences. Research opportunities, with technology education infused across all curricula, prepare students for understanding and competing in a highly technological society. An emphasis on communication skills, including speaking and writing, develops the students’ critical thinking processes needed to meet the challenges of their academic and personal endeavors. Flexible scheduling, such as modular or block scheduling, allows for extended time and the ability to include extra classes within the school-day timeframe. The school’s rigorous curriculum exceeds State and City standards and prepares students for career, college, and success in all of life’s endeavors.

Students have opportunities to complete many of their high school Regents requirements within three years and pursue college academic subjects on the York College campus during their senior year. Students with an interest in pursuing medicine as a career will be eligible to participate in York College’s Bridge to Medicine Program.

Stuyvesant High School
345 Chambers Street, New York, New York 10282-1099
Telephone: (212) 312-4800 Website: www.stuy.edu
Subways: 1, 2, 3, 9, A, C, or E to Chambers St. Buses: M1, M6 to Broadway & Chambers St.; or M10, M22 to Chambers & West St.

The 3,000 Stuyvesant students may take advanced courses in mathematics and science, including organic chemistry, calculus, qualitative analysis, astronomy, environmental studies, and history of science. In addition, a wide range of electives in other areas is available. Since a major elective is required in each term of the senior year, all students take at least one additional year of science, mathematics, or foreign language.

The school offers Advanced Placement biology, chemistry, physics, foreign languages, mathematics, English, and social studies. Among the mechanical arts courses offered are mechanical drafting, architectural drafting, scientific sketching, general shop, art, art laboratory, plastics, and ceramics. Students interested in music may participate in symphonic band, symphony orchestra, dance band, and choral groups and ensembles.

Stuyvesant takes pride in its extensive extracurricular program. There are twenty-two athletic teams, thirteen major publications, and an active and elaborate system of student government.
Obtain a copy of the Specialized High Schools Student Handbook from your counselor for detailed school and program information and sample tests. Review pages 4 and 5 for important test and audition dates and location information.

Together with your parents, determine the specialized high schools to which you wish to be considered and the ranking in which you will list them on your answer sheet. Consider the focus of the academic program, the size of the school, and travel arrangements, as well as travel time. You may make as few as one or as many as six choices. To increase your chances of being assigned to one of the specialized high schools, you are encouraged to make more than one choice.

If you are interested in applying to any of the programs at LaGuardia High School, attend the Showcase Performance with your family on Saturday, October 16, at 10:30 a.m. at the school. Review the audition requirements listed in Section 1, page 6, and prepare for your auditions.

Complete your High School Application Student Program Choices Worksheet. You must have a high school application on file in order for your SHSAT score to be registered.

For the six schools that require the SHSAT:

Obtain an admission ticket from your counselor. This ticket will indicate the date and time of the SHSAT, your student ID number (for NYC public school students only), the code number of your current school, and your test site. If you have a conflict, inform your counselor immediately to arrange an alternate test date. Your test site is based on the location of your current school, not where you live. The equivalent test will be given at all test sites. Where you take the test will have no effect on your choice of school.

Bring your admission ticket to the assigned test site on the correct date and time to complete the SHSAT. Your picture will be taken at the test site prior to the start of the test. You will complete the answer sheet that requires you to rank the specialized high schools to which you wish to apply.

It is important to arrive at the test site at the time indicated on your admission ticket. If you arrive late at the test site, you will not be able to take the test. If you appear at the wrong session or on the wrong date, you will not be admitted.

For LaGuardia High School, obtain an admission ticket from your counselor. You must bring this ticket to your audition at the designated date and time. Complete your audition.

You will be notified of acceptances to the specialized high schools in January 2005. If you qualify for a seat in one of the six specialized high schools based on your test score, your score and your ranking of schools will be used to place you in a school. If you decide to attend a specialized high school, this is the school you will attend.

Important
If you take the SHSAT more than once during the school year or take the test at the wrong grade level, you will be automatically disqualified from attending a specialized high school.

Important
You must have a high school application on file in order to obtain your SHSAT score.

Important
Remember to bring your admission ticket to the test site on the day of the test. Your admission ticket will indicate your student ID number (NYC public school students only), the code number of your current school, and your test site. It also includes your ranked choice(s) of school(s).
The Specialized High Schools Admissions Test has two sections, Verbal and Mathematics.

VERBAL SECTION (45 QUESTIONS)
Verbal reasoning is measured by 5 questions on ordering sentences to form a paragraph and 10 questions on logical reasoning. Reading comprehension is measured by five reading selections, each of which is followed by six questions tapping your ability to understand, analyze, and interpret what you have read. You should not spend more than 75 minutes on this section. You may go back to this section after completing the mathematics section.

MATHEMATICS SECTION (50 QUESTIONS)
This section consists of word problems and computation questions. It is recommended that you allow yourself 75 minutes on this section. If you finish early, you may go back to questions in either section.

TEST MATERIALS
FOR EACH STUDENT, THE TESTING SITE WILL PROVIDE
- a test booklet
- a separate answer sheet
- scrap paper for use in solving logical reasoning and mathematics problems, which will be collected at the end of the exam

YOU MUST BRING TO THE TESTING SESSION
- an admission ticket
- two or more sharpened Number 2 pencils (a hard pencil is too light, and ballpoint or other ink cannot be used for machine scoring)
- an eraser
- a non-calculator watch to keep track of your working time

DO NOT BRING A CALCULATOR OR OTHER COMPUTATION AID. DO NOT BRING CELL PHONES, BEEPERS, OR PAGERS TO THE TEST SITE. SUCH DEVICES WILL NOT BE PERMITTED.
Before taking the test, you will need to provide information such as your name, student ID number (NYC public school students only), school number, and school choices on your answer sheet. It is important to mark the bubbles correctly, and to fill them in completely, so that your score will not be delayed.

In Grid 5, bubble in your given or birth name as it appears in your school records and on your high school application. Do not use your nickname or “American” name. For example, if your name on school records is Michelle, bubble in that name, even if most people call you “Shelly.” Or if your name on school records is Mei-Ling, bubble in that name, even if most people call you “Melanie.” See example below.

Grid 6 is for your choice of specialized high schools. If Grid 6 is not marked correctly, your admission to a specialized high school will be affected because your admission is based on the score you attain and the order in which you rank your school preferences. Therefore, it is very important that you make your decisions about ranking schools before the day of the test. Discuss the schools in which you are interested with your parents and then together determine the order in which you will list them on the answer sheet. Enter these rankings on your admission ticket so that you will be able to carefully copy them onto the grids on your answer sheet at the test site.

**Fill in ONE and only ONE circle for each school for which you wish to be considered.** You may make as few as one or as many as six choices. To increase your chances of being assigned to one of the specialized high schools, you are encouraged to make more than one choice. Do not fill in a school more than once. Do not fill in the same school for each choice.

---

**EXAMPLES OF CORRECT GRID 6**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Am. Studies/Lehman</td>
<td>Bronx Science</td>
<td>MSE/CCNY</td>
<td>Bronx Science</td>
<td>Brooklyn Tech</td>
<td>Queens Sci./York</td>
</tr>
<tr>
<td>Bronx Science</td>
<td>Brooklyn Tech</td>
<td>MSE/CCNY</td>
<td>Brooklyn Tech</td>
<td>Queens Sci./York</td>
<td>Stuyvesant</td>
</tr>
<tr>
<td>Brooklyn Tech</td>
<td>MSE/CCNY</td>
<td>Queens Sci./York</td>
<td>Queens Sci./York</td>
<td>Stuyvesant</td>
<td></td>
</tr>
<tr>
<td>MSE/CCNY</td>
<td>Queens Sci./York</td>
<td>Stuyvesant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Queens Sci./York</td>
<td>Stuyvesant</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stuyvesant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Am. Studies/Lehman</td>
<td>Bronx Science</td>
<td>MSE/CCNY</td>
<td>Bronx Science</td>
<td>Brooklyn Tech</td>
<td>Queens Sci./York</td>
</tr>
<tr>
<td>Bronx Science</td>
<td>Brooklyn Tech</td>
<td>MSE/CCNY</td>
<td>Brooklyn Tech</td>
<td>Queens Sci./York</td>
<td>Stuyvesant</td>
</tr>
<tr>
<td>Brooklyn Tech</td>
<td>MSE/CCNY</td>
<td>Queens Sci./York</td>
<td>Queens Sci./York</td>
<td>Stuyvesant</td>
<td></td>
</tr>
<tr>
<td>MSE/CCNY</td>
<td>Queens Sci./York</td>
<td>Stuyvesant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Queens Sci./York</td>
<td>Stuyvesant</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stuyvesant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

10
EXAMPLES OF INCORRECT GRID 6

Grid 10 is labeled “STUDENT ID NUMBER.” This number is for New York City public school students only. You will find this number on your admissions ticket for the test. In the boxes in Grid 10, write your nine-digit student ID number. Below each box, fill in the circle containing the same numeral as the box. (See the example below.) If you are a private or parochial school student, leave this grid blank.

In Grid 9, print the name and borough of the school you are now enrolled at. Then indicate if this is a public or private school. Bubble in your school code exactly as it appears on the school list that you will receive on the day of the test. A bubbling error may delay your score. For example, a student who attends Abraham Lincoln JHS 171 in Brooklyn should bubble in the school number as shown in the example below.
When you are told to begin the test, mark your answers on the answer sheet by completely filling in the appropriate bubble (see example). Make your marks heavy and dark. Be careful not to make any stray marks on the answer sheet. If you change an answer, completely erase your first answer. Do not fold or tear the answer sheet.

There is only one correct answer to each question. If your answer sheet shows more than one mark in response to a question, that question will be scored as incorrect.

You may write in your test booklet or on the scrap paper provided to solve verbal or mathematics problems, but your answers must be recorded on the answer sheet in order to be counted. Information in the test booklet or on scrap paper will not be counted.

**SCORING, REPORTING, AND REVIEW PROCEDURES**

Your score is based on the number of correct answers marked. There is no penalty for wrong answers. If you are not sure of an answer, mark your best guess. Do not spend too much time on any one question. Answer each question as best you can or skip it and keep going. If you have time at the end of the test, you may go back.

Each answer sheet is scanned and scored electronically, and the number of correct answers, called a raw score, is determined for each test taker. Because there are several forms of the SHSAT, raw scores from different test forms cannot be compared directly. The test forms were developed to be as similar as possible, but they are not identical. To make valid score comparisons, a raw score must be converted into another type of score that takes into account the differences between test forms. In a process called calibration, verbal and mathematics raw scores are converted into scaled scores. The raw scores and scaled scores are not proportional. In the middle of the range of scores, an increase of one raw score point may correspond to an increase of three or four scaled score points. At the top or bottom of the range of scores, an increase of one raw score point may correspond to 10-20 scaled score points. The reason for this difference is that the scaled scores have been adjusted to fit the normal curve. Scaled scores are on a scale that is common to all test forms, making it possible to compare these scores directly. The composite score is the sum of the verbal and mathematics scaled scores. Your verbal and mathematics scaled scores and your composite score will be reported to the specialized high schools. The composite score is used to determine admission to a specialized high school.

**STUDENT NOTIFICATION**

Schools will receive information indicating student test results for those students who filed a high school application. You must have a high school application on file to obtain your SHSAT score. **Students who did not file a high school application will not be notified.** Students offered seats must indicate acceptance of the school to which they were selected by returning the signed letter to their guidance counselor.

Once students accept an assignment to a school, they must remain in that school for a minimum of one year. The specialized high schools are prepared to provide whatever assistance students need to succeed. The parent of a student who desires to transfer must make a transfer request in writing and participate in a guidance conference before a transfer can be approved. **Students whose transfer is approved will be transferred to another school.**

**REVIEW PROCEDURES**

After the schools, students, and parents are informed of the results, parents, accompanied by their child, may review the student’s answer document by requesting an appointment with a Department of Education testing expert. Appointments may be arranged by writing to the Office of Student Enrollment Planning and Operations, 52 Chambers Street, Room 415, New York, New York, 10007. **The request must be sent by certified mail with proof of delivery and postmarked no later than April 1, 2005.** An appointment date will be arranged within approximately three weeks of receipt of the letter.

**Discovery Program**

As stated in the State Law, the special schools are permitted to maintain a Discovery Program to give disadvantaged students of demonstrated high potential an opportunity to try the specialized high school program.

To be eligible, the student must:

1. have scored close to the admission cut-off score on the SHSAT; and
2. be certified as disadvantaged by his/her middle school according to any one of the following criteria:
   a. attend a Title I school and be from a family whose total income is documented as meeting federal income eligibility guidelines established for school food services by the NYS Department of Agriculture, effective July 1, 2004; or
   b. be receiving assistance from the Human Resources Administration; or
   c. be a member of a family whose income is documented as being equivalent to or below Department of Social Services standards; or
   d. be a foster child or ward of the state; or
   e. initially have entered the United States within the last four years and live in a home in which the language customarily spoken is not English; and
3. be recommended by his/her local school as having high potential for the special high school program.

Documentation supporting student eligibility must be attached to the recommendation form submitted to the specialized high school. Not all students recommended can be accepted into the Discovery Program. Those students who are successful in meeting the demands of the summer program will be retained by the school to which they were conditionally accepted. Those students who are not successful will attend the school to which they had previously been assigned. If you have questions speak to your counselor.
The Specialized High Schools Admissions Test (SHSAT) assesses knowledge and skills that are needed for success in a high school for high-achieving students. These skills consist of the ability to comprehend English prose, the ability to think through a verbal problem in order to reach a reasoned conclusion based on the given information, and the ability to use problem-solving skills in mathematics. It is a difficult test, and there are no easy tricks to guarantee a high score. Keeping up with your schoolwork throughout the year is the best possible preparation. Because the test measures knowledge and skills you have gained over the years, cramming usually is not effective. In fact, cramming may be counterproductive if it increases your anxiety or keeps you from getting adequate rest in the days before the test.

Study Tips

- The best way to improve your verbal skills is to read many books and articles. This helps you expand your vocabulary and improve your comprehension. While reading, ask yourself: What is the main point? What can be deduced? Why does the author use certain words? Is this article well written?
- “Cram books” that supposedly help you boost your score are probably not going to help much, but knowing what to expect on the test and having some practice in test taking is beneficial. This handbook describes each part of the test and contains two sample tests to use as practice. Each sample test contains questions from previous tests and has been updated to match the 2003 tests as closely as possible. A list of correct answers is provided for each test, along with explanations.
- It is helpful to simulate the actual testing situation. Find a quiet place with a clear work area, adequate light, a piece of scrap paper, and a comfortable chair. Remove all books and papers from the table. You have 150 minutes to complete the test. How you allot the time between the verbal and mathematics sections is up to you. You may start on either section. It is recommended that you do not spend more than 75 minutes on either section. You may return to one section, if you have time remaining after finishing the other section. Mark your answers on the answer sheet provided in the handbook.
- When time is up, check your answers against the list of correct answers. Read the explanations of the correct answers to see the kinds of mistakes you may have made. Did you read too quickly and misunderstand the question? Did you make careless errors in computation? Did you choose answers that were partially correct, but were not the best answers? Were many of your wrong answers guesses? You also should check to see whether there is a pattern to your errors. For example, did you get all the main idea questions wrong?
- Put this handbook away for a few days, then take the second sample test, following the same procedure. Be aware that how well you do on these sample tests is not an exact predictor of your score on the actual test. Also, your scores on the sample tests cannot be precisely compared. However, these tests will give you an idea of what to expect when taking the SHSAT.

Tips for the Test Day

- Get to bed early the night before and eat breakfast on the day of the test. Arrive at the testing center well before the test is to begin. Wear comfortable clothes and bring a watch to keep track of the time. Make sure that you have several sharpened Number 2 pencils and an eraser that erases cleanly. Do not bring books, papers, calculators, calculator watches, alarm watches, food, or beverages.
- It is normal to feel nervous, but try not to “freeze.” Taking deep breaths and closing your eyes may help you to relax and stay calm.
- Plan your time. Be aware of the total number of questions and the amount of time you have to complete the test. Work carefully, but keep moving at a comfortable pace and keep track of the time.
- Read all instructions carefully. Be sure you understand the task before marking your answer sheet. For each question, read all the choices before choosing one. Many questions ask for the best answer; it is important to compare all the choices to determine the choice that best answers the question. Do not select a choice just because it is true or sounds plausible.
- Mark your answers carefully. On a machine-scored test, it is easy to lose credit by marking the wrong answer bubble or marking the answers to two questions on the same line. Make sure the number on the answer sheet matches the number of the question in your test booklet. To change an answer, erase the original mark completely. If two bubbles are filled in for a question, that question will be scored as incorrect. You may write in your test booklet to solve verbal or mathematics problems. Avoid making stray pencil marks on your answer sheet.
Do not worry if you are unable to answer every question or if you run out of time. No one is expected to know all the answers! In general, the easier questions are at the beginning of each section. When you reach a question that seems especially difficult, do not spend too much time on it. Move on and go back to it, if you have time.

When you do not know the answer to a question, make an educated guess. Eliminate the answer choice(s) that are definitely wrong, then choose one of the remaining answers.

If you finish before time is up, go back over your work to make sure that you followed instructions, did not skip any questions, and did not make careless mistakes. However, before changing answers that you considered carefully the first time around, rethink the question and answer choices.

Your score is based on the number of correct answers marked on the answer sheet. There is no penalty for a wrong answer. Therefore, omitting a question will not give you an advantage, and wrong answers will not be deducted from your right answers. When the time limit is almost up, fill in any blanks. Random guessing probably will not change your score significantly; however, it does no harm.

Be considerate during the test. Do not chew gum, or make noises or movements that would be distracting to others.

VERBAL

SCRAMBLED PARAGRAPHS

The scrambled paragraph portion of the test measures your ability to organize written material according to the sequence of ideas and/or cues provided by transitional words and phrases. There are five paragraphs, each consisting of six sentences. The first sentence is provided, with the remaining five presented in random order. You are to arrange the sentences in the author’s original order using cues contained in the sentences. Only one arrangement of each set of sentences will form a well-organized, cohesive, grammatically correct paragraph. Each correctly ordered paragraph is worth double the value of a question in any other section of the test.

The sentences contain words and phrases that help to identify the flow of ideas from one sentence to the next, perhaps describing a procedure or tracing a historical event. The sentences may also provide grammatical cues as to how to construct the paragraph. For example, the pronoun “she” may refer to someone mentioned in a previous sentence. Transitional words such as “although” and “however” also provide cues about how the sentences relate to one another.

As you put the sentences in order, it may help to write the correct position of each sentence in the blank to the left. For example, write “2” next to the sentence that you think follows the first sentence, “3” next to the sentence you think follows “2”, and so on.

Read Example 1. After reading all the sentences, you should have an idea of what the paragraph is about. Now go back to the given sentence and determine which sentence should come next. The next sentence is S because it contains a transitional word, “however,” and a substitute for “banjo” (“stringed instrument”). Write “2” in the blank before S. S also contains a reference to stringed instruments in Arab countries, and Arab traders are mentioned in T, so T follows S. Write “3” before T. U begins with “at any rate,” a transition that moves the story along, and ends with the arrival of the banjo in North America, so U follows T. Write “4” before U. Q refers to “our continent,” which is North America, so Q follows U. Write “5” before Q. The final sentence, R, describes the changes mentioned in Q, so it is a logical concluding sentence. Write “6” before R.

Example 1
No one knows when or where the first banjo was created.

Q. Once on our continent, it has undergone many changes and appeared in various forms.

R. For example, the number of banjo strings has varied between two and five, with five strings being standard today.

S. However, similar stringed instruments have been played in Indian and Arab countries for thousands of years.

T. Arab traders may have brought the instrument from Asia to the west coast of Africa.

U. At any rate, in the eighteenth century, the banjo arrived in North America, along with African slaves.
Now write out the letters of the sentences in order—STUQR—and then read the sentences in this order to see if they form a coherent, grammatically correct paragraph. If they do not, ask yourself why. For example, suppose you ordered the sentences SQRTU. When read in this order, the paragraph seems to hang in mid air after the end of U, indicating that it may not be correct. Go back to see whether a sentence should come after U. Q is that sentence, for the reasons given above. Change the numbers to reflect your new order.

Five sentences are not very many with which to create a well-organized paragraph that can stand alone, without the context that a longer work provides. Thus, the position of each sentence within a relatively short paragraph is very important. When a paragraph is factual and explanatory in nature, as this one is, a good writer presents ideas, facts, definitions, and relationships in a precise and orderly way. Note that the correct ordering depends on the logical sequence of ideas and/or the grammatical cues provided by transitional words or phrases. A strict chronological ordering is incorrect if the grammatical cues are ignored. Base your ordering only on the information provided. Assume that the paragraph stands alone and is not part of a larger work.

Some sentence orders may be partially correct, with two or more sentences in proper order. Unless all five sentences are ordered correctly, however, the ordering is incorrect. **No credit is given for partially correct responses.**

LOGICAL REASONING

This section consists of 10 questions that assess your ability to reason logically, using the facts, concepts, and information presented. **You must guard against jumping to conclusions that are not warranted from the information given.** There are different types of questions: figuring out codes, determining the relative positions of things or people, identifying correct assumptions, and drawing valid conclusions.

The most important strategy is to read the information carefully and make no assumptions that are not supported by the given information. Certain words must be read carefully. For example, **between** cannot be assumed to mean between and right next to; other things may be between these two objects as well. The same may be true of words such as **above,** **below,** **before,** and **after.**

Another good strategy is to look for information that is definitely stated, such as, “The red box is the largest,” or “Jane is not standing next to Erik.” This information makes it easier to determine the relative relationships.

At times, drawing a chart may help you visualize how the parts of the problem are related. Example 2 shows how this strategy can be helpful. First, draw and number the five shelves. Then, look for information that is definite, such as statement 4, the yellow books are on Shelf 2. Write “yellow” next to “2.”

For Question 1, note that the blue books are above the yellow books (statement 2). From statement 3, either the red and orange books are both above the yellow books or both are below them. There is only one shelf below the yellow books. The red and orange books cannot both be below the yellow books. That leaves only the green books for Shelf 1. The correct answer is B.

For Question 2, note that the orange, red, and blue books must occupy Shelves 3, 4, and 5. Statement 3 says that the orange books are below the red books. No further information is given that allows us to determine the exact positions of the orange, red, and blue books. We know only that red or blue books are on Shelf 5. Hence the correct answer is K.

It is important to realize that more than one arrangement may satisfy the conditions. For example, this arrangement satisfies all conditions given in Statements 1-4. However, “blue” is not the correct answer because it is not the only arrangement that satisfies the conditions. Based on the information given, other arrangements could be possible.
Example 3

All of the officers at the air show were pilots. Some pilots at the air show wore their uniforms.

Based only on the information above, which of the following must be true?

F. All persons wearing uniforms at the air show were pilots.
G. Only pilots attended the air show.
H. If Zelda was an officer at the air show, then she must be a pilot.
J. All of the officers at the air show wore their uniforms.
K. If Peter was a pilot at the air show, then he wore his uniform.

To answer Example 3 correctly, it is important to understand the relationships among the groups of people who attended the air show—officers, pilots, and pilots who wore their uniforms. It is also necessary to realize that some people who attended the air show might not belong to any of these groups. The question says that all officers were pilots, and that some pilots (not all) wore their uniforms. This is the extent of the information given about the officers and pilots who attended.

Read each option and evaluate whether it must be true, based on the information given. Option F may or may not be true; the persons wearing uniforms may or may not be pilots. There is not enough information given to decide. Option G is incorrect because it is possible that people other than pilots attended the air show. The information given does not rule out that possibility. Option H says that an officer who attended the air show (Zelda) must be a pilot. According to the information given, this conclusion must be true. Options J and K can be ruled out because the officers and pilots may or may not have worn their uniforms.

It might be helpful to draw a diagram to illustrate the relationships among the groups of people at the air show.

People who attended the air show

- Wore uniforms
- Officers (pilots)
- Pilots in uniforms

The overlapping circles in the diagram show that some pilots (and officers) wore uniforms, but not necessarily all of them. It also shows that some people wearing uniforms may not be pilots or officers. The diagram can be used to rule out options F, G, J, and K, and to support option H as the correct answer.

Example 4

In the code below, (1) each letter represents the same word in all four sentences, (2) each word is represented by only one letter; and (3) in any given sentence, the letters may or may not be presented in the same order as the words.

R V Q N L means
“Ben wants to date Tasha.”
M R X N Q means
“Alicia wants to date John.”
N R P Q Z means
“Gabe wants to date Lori.”
Q V Y R N means
“Jaclyn wants to date Ben.”

Which letter means “Ben”?
A. R
B. V
C. Z
D. L
E. Cannot be determined from the information given.

When the question involves a code, as in Example 4, do not solve for all parts of the code. Solve only those parts that relate to the question.

Start by ruling out the letters that mean “wants to date,” since they are the only words that appear in all four sentences. “Wants to date” must be represented by the letters R, Q, and N. (We do not know which word corresponds to each letter, but it does not matter. We are interested only in solving for “Ben.”) Then go back to the first and fourth sentences (the only sentences that contain “Ben”) and eliminate those letters from consideration. The remaining letters are V, L, and Y. Only V appears in both sentences, as does only one word, “Ben.” Thus we can conclude that V means “Ben,” which is option B.
Example 5

In the 1940s and 1950s, millions cheered for the first and, so far, the only professional female baseball league in the United States. Concerned that major-league teams might be shut down because players were being drafted to serve in World War II, Philip K. Wrigley, owner of the major-league Chicago Cubs, chose the finest players from the amateur women’s softball leagues and established the American All-Girl Professional Baseball League (AAGPBL) in 1943. The quality of play in the women’s league was so high that the games attracted many loyal fans in a number of Midwestern cities. In fact, in the best year of the league, over a million spectators attended AAGPBL games. Public interest fluctuated over the years, however, and when television brought major-league baseball into people’s homes in the 1950s, it wiped out the AAGPBL and many other minor league operations as well.

That most people had sexist attitudes toward women’s athletics is evident from some of the team names, most of which alluded more to gender and appearance (Chicks, Peaches) than ballplaying skills. But in their six games a week (two on Sundays), the women demonstrated that they were true athletes. The league quickly advanced from a modified form of softball to a serious game of baseball. The women played hard and well, and major-league players and managers spoke highly of the league. One Hall of Famer called the thrilling, fourteen-inning championship game in 1946 the greatest he had ever witnessed, male or female.

When the league folded in 1955, the players went in many directions. Some pursued successful careers in business. Some took up other professional sports such as bowling and golf. The groundbreaking efforts of the AAGPBL paved the way for the success and popularity of women in sports such as tennis, golf, and track and field. These efforts also helped to increase the financial rewards available to women in professional sports. In 1989, a well-attended Baseball Hall of Fame exhibit brought the players of the league some much-deserved recognition for their contributions to baseball and to women’s sports in general.

In 1992, a feature film about the league, A League of Their Own, may have spurred new interest in women’s baseball. In 1994 the Colorado Silver Bullets became the first women’s professional baseball team to compete only against men, playing a full season of exhibition games against minor-league teams.
1. Which of the following best tells what this passage is about?
   A. why women no longer play professional baseball
   B. the early years of women in professional sports
   C. the history and significance of women's professional baseball
   D. attitudes toward women in professional sports
   E. the effect of World War II on professional sports

2. Which of the following is not true of the women in the AAGPBL?
   F. They replaced the male players in the major leagues.
   G. They played baseball with determination and skill.
   H. Some of them played in other sports.
   J. Their accomplishments were recognized by the Baseball Hall of Fame.
   K. Major-league players and managers admired their skills.

3. What was the major reason for the end of the professional women's baseball league?
   A. The AAGPBL began using male ballplayers during the 1950s.
   B. Women no longer competed against men after the war was over.
   C. All-male minor leagues cut into the AAGPBL market.
   D. People lost interest in baseball during the 1950s.
   E. Baseball fans lost interest in minor-league baseball during the 1950s.

4. What was Philip K. Wrigley's chief motivation in starting the league?
   F. a desire to publicize his major-league team
   G. a desire to keep wartime morale high among women
   H. a belief in the long-term future of women's participation in baseball
   J. a desire to keep baseball available despite the war
   K. a fear that fans would lose interest in professional sports

5. What is the major difference between the Silver Bullets and the teams of the AAGPBL?
   A. The Silver Bullets play baseball instead of softball.
   B. The Silver Bullets play only male teams.
   C. The AAGPBL played only a modified softball.
   D. The Silver Bullets are professional athletes.
   E. The AAGPBL games were on television.

6. The author described the AAGPBL's efforts as “groundbreaking” (line 41) because the league
   F. taught many women to play baseball.
   G. made professional baseball a popular sport.
   H. introduced baseball to cities that previously had no teams.
   J. inspired women to join major-league teams.
   K. showed that women could participate in professional sports.
**Question 1**

This question asks for the option that best tells what the passage is about. Look at each paragraph. The first paragraph describes the founding of the AAGPBL, its peak of popularity, and its end. The second paragraph contrasts sexist attitudes toward women's athletics with the women's excellent ballplaying skills. The third paragraph describes what the women did after the league folded in 1955. The last paragraph discusses renewed interest in women's baseball. Now look at the answer choices.

Option A cannot be correct because the fourth paragraph says that women still play professional baseball. Option B is too broad; the passage focuses on women in baseball, not professional sports in general. Options D and E can be ruled out because, while they are mentioned in the passage, they are details, not main ideas. Option C is correct because it is neither too narrow nor too broad, and it summarizes the main points of the passage—the history of the league and the effects of the league on women’s participation in professional sports.

**Question 2**

This question asks you to select the choice that is not true of the women in the AAGPBL. The best strategy for a question like this is to evaluate each option and determine whether it is true. Only one choice will not be true. Option F is not true; the women were in their own league (lines 4-11). Option G is true; the women played hard and well (line 31). Option H also is true, based on the third paragraph, which says that some players became professional bowlers and golfers. Option J is supported by the last sentence in the third paragraph. Option K also is true; major-league players and managers spoke highly of the league (lines 31-33).

**Question 3**

The end of the AAGPBL is described in lines 18-21: “...when television brought major-league baseball into people’s homes in the 1950s, it wiped out the AAGPBL and many other minor-league operations as well.” The option closest in meaning is Option E. The remaining options may sound plausible, but none are true.

**Question 4**

This question asks for an inference based on information in the passage, but which is not directly stated. The answer must be drawn from the first paragraph, the only place where Wrigley is mentioned. The passage says that Wrigley started the AAGPBL because he was “concerned that major-league teams might be shut down because players were being drafted to serve in World War II.” The inference to be made is that Wrigley started another baseball league, entirely composed of women who were not likely to enter the armed services, to help ensure that his business would continue if major-league baseball ended. Option J restates that inference and is the correct answer. Option F is not supported by the passage. While Option G may have been an outcome of Wrigley’s decision, it was not the motivating factor. Option H is incorrect; Wrigley’s concern was for the duration of the war, not long-term. Option K is unlikely, given the status of major-league baseball before the war and the lack of information about other professional sports during the war.

**Question 5**

The answer is found in the last sentence. The Silver Bullets are the only women's professional baseball team to have competed against men, as stated in Option B, the correct answer. The other options do not describe differences between the teams. The AAGPBL teams played baseball (lines 29-30), ruling out Options A and C; the AAGPBL players were professional athletes, ruling out Option D; and there is no mention of the AAGPBL teams or the Silver Bullets' games appearing on television, ruling out Option E.

**Question 6**

To answer this question, you must read more than the sentence containing the word “groundbreaking.” Reread the third paragraph to figure out how it fits into the passage. The passage implies that the league helped women attain the status of professional athletes for the first time. “Groundbreaking” is thus used in the sense of “pioneering.” The option that corresponds best to this idea is K.
This section includes arithmetic, algebra, probability, statistics, geometry, and, on the Grade 9 test, trigonometry problems. The technical terms and general concepts in these test questions can be found in the New York State Education Department Mathematics Resource Guide with Core Curriculum. Most problems involve application of topics covered in the Core Curriculum; however, since the Core Curriculum is just an outline, not all details of a topic are provided. Consequently, some aspects of a question may not be mentioned. Also, knowing how to respond to novel situations creatively is an important indication of mathematical ability. As one of the purposes of this test is to identify students who will benefit from an education at a specialized high school, the SHSAT contains many questions on unfamiliar topics.

The NYSED Mathematics Resource Guide with Core Curriculum can be purchased at Instructional Publications, 131 Livingston Street, Room 608, Brooklyn, NY 11201, (718) 935-3990, or downloaded from the New York State Education Department web site: www.nysed.gov.

**Tips for Taking the Mathematics Section of the Test**

- To improve your mathematics skills, **do many mathematical problems over a considerable period of time**. The best approach is to choose a mathematics textbook and solve five to ten problems every day. Do both routine and difficult problems. Routine problems reinforce basic mathematical facts. More challenging problems help you understand the concepts better. Do not give up if you cannot do some problems. Skip them and move on. You may be able to solve them after you have learned more. Also, do not limit yourself to problems that test what you have learned in your mathematics class. Go beyond what you have been taught and try new types of problems.

- You must **know the meanings of technical terms** such as “parallel” and “perpendicular” that are appropriate to your grade level, as well as the customary symbols that represent those terms. You also need to **know various formulas** such as those for the perimeter and area of different figures. You can find these technical terms, symbols, and formulas in your mathematics textbook or in the Core Curriculum. These terms, symbols, and formulas will **NOT** be given in the test booklet. Practice using them until you know them by heart.

- **Read each problem carefully and work out the answer on scrap paper or in your test booklet. Do not calculate on your answer sheet.**

- **Most problems should be done by working out the answer.** This is more efficient than trying out the options to see which one fits the question. The only exception is when you are explicitly asked to look at the options, as in, “Which of the following is an odd number?”

- If the question is a word problem, it often is helpful to **express it as an equation**. When you obtain an answer, look at the choices listed. If your answer is included among the choices, mark it. If it is not, reread the question and solve it again.

- The incorrect choices are often answers that people get if they misread the question or make common computational errors. For this reason, it is unwise to solve a problem in your head while looking at the possible choices. It is too easy to be attracted to a wrong choice.

- **If your answer is not among the answer choices, write your answer in a different form.** For example, 10 \((x + 2)\) is equivalent to \(10x + 20\).

- **You may draw figures or diagrams for questions that do not have them.**

- Some questions ask you to combine a series of simple steps. **Take one step at a time**, using what you know and what the question tells you to do.

- **The sample tests in this handbook are Grade 8 forms.** If you are a ninth-grade student, work the problems on pages 93-97 as well. These cover topics are introduced in the Core Curriculum for Grade 8.
Now you are ready to try sample test Form A. Begin by carefully reading the Directions on pages 22 and 23 and filling out side 1 of the Answer Sheet on page 24. For Form A, use side 2 of the Answer Sheet (page 25). When you are ready for Form B, use the Answer Sheet on page 59. You may tear out pages 24-25 and 59 to make it easier to mark your answers.

### Example 6
Tara flew her plane at an average speed of 310 km per hour for 4 hours. About how far did she travel?

- **F.** 300 km
- **G.** 500 km
- **H.** 1,500 km
- **J.** 3,000 km
- **K.** 4,500 km

In Example 6, multiply 310 by $4\frac{1}{2}$ to get 1,395 km. However, since the question asks for an estimate (“about how far”), you can round 310 to 300, and multiply 300 by 4.5 to obtain 1,350. Now look at the choices. We have rounded 310 down, so the correct answer should be slightly larger than 1,350. Option **H** is correct.

### Example 8
If $\frac{2m - 3}{9} = 7$, what is the value of $m$?

- **F.** 2
- **G.** 8
- **H.** 10
- **J.** 30
- **K.** 33

In Example 8,

$$\frac{2m - 3}{9} = 7$$

$$2m - 3 = 7 \cdot 9 = 63$$
$$2m = 63 + 3 = 66$$
$$m = 33$$

### Example 9
What is the smallest positive odd integer that is not immediately adjacent to an integer power of 2?

- **A.** 1
- **B.** 3
- **C.** 5
- **D.** 11
- **E.** There is no such number.

In Example 9, start by listing the positive powers of 2:

- $2^1 = 2$
- $2^2 = 4$
- $2^3 = 8$
- $2^4 = 16$
- $2^5 = 32$

The question asks for the smallest positive odd integer that is not immediately adjacent to one of the quantities on the right-hand side of the equations above. Start with 1, the smallest positive odd integer. It cannot be the answer, since it is immediately adjacent to 2. The next several positive odd integers, 3, 5, 7, and 9, are ruled out because they are immediately adjacent to 2, 4, 8, and 8, respectively. The smallest positive odd integer that meets the requirements is 11; it is between 8 and 16, but not immediately adjacent to either.