Northbrook Academy

Middle School Curriculum Guide
2011-2012

Our Philosophy

Northbrook Academy is dedicated to students' **personal success** through the development of mind, body & spirit. This holistic approach is ultimately what makes up the Northbrook Experience. We think of this goal as our educational triad, which happens to map to the three leaves of our school symbol, the shamrock.

Northbrook Academy believes that much learning goes on among peers and strives for a student population that is diverse in geographic, economic, social, and racial backgrounds.

Our community includes a population expected to:

- appreciate diversity
- embrace global thinking
- value inter-dependencies
- act in accordance with our honor code, with *fairness, justice, honesty, integrity, and respect*

Table of Contents

Mathematics

About Our Math Curriculum

Northbrook is proud to have adopted a Math 6 and Pre-algebra math program published by Saxon, an imprint of Houghton Mifflin Harcourt Supplemental Publishers. This Saxon math program is both **comprehensive and unique** because of its **continuous practice and repetition** of learned concepts. This revisiting of material empowers students; they KNOW their math skills and have confidence in their abilities. Also, under Houghton Mifflin Harcourt, we have adopted the excellent structure of the McDougal Little books for Algebra 1, Algebra 2, and Geometry and are thrilled with their online supplementary materials and books found at **classzone.com**

We use a placement exam to determine at which math level a student should begin study while at Northbrook. Students in 6th grade usually start with one of the Saxon math books for **Math 6** or **Algebra 1/2**. Seventh graders typically are placed into **Algebra 1/2** or **McDougal/Little Algebra 1**. Eighth grade students are usually studying **Algebra 1** or **Algebra 2**. These wonderful math books are only guides; our curriculum is customized to meet the needs of our students and is enhanced by the small class sizes

The study of Mathematics at Northbrook is incremental and steady. Lessons add new steps to previously taught material as well as review already learned material. Parental involvement in mathematics is crucial. It is essential that parents support the student's effort to complete daily assignments. Solving problems day after day is the key to success. Learning mathematics, like learning a foreign language, a musical instrument, or an athletic skill requires **long-term practice** to develop and maintain mastery of the requisite skills. A positive attitude and a commitment to long-term practice greatly improves a student's progress into higher-level mathematics courses.

Northbrook Academy has a history of enrolling some very high achieving mathematic students. Each year a number of Middle School students qualifies for John Hopkins National Talent Search for gifted and talented students.

Math 6

The Math 6 curriculum continues along the spiraling path of the Saxon Mathematics Program. Students will frequently review past concepts and explore concepts, both new and prior, on a more challenging level. Program goals are organized within the following content standards, as adapted from the National Council of Teachers of Mathematics (NCTM).

Number and Operations – students discover new meanings, uses and representations of numbers; they also work to understand equivalent names for number and common numerical relations (e.g. fractions, decimals, percents, whole numbers, integers).

Students will also work to compute accurately, make reasonable estimates, and understand the meaning of operations.

Algebra – Students work to understand patterns and use algebraic notation to represent and analyze situations and basic equations (e.g. missing number patterns, solving one-step and two-step equations)

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Geometry – students investigate properties of two and three-dimensional geometric figures (e.g. squares, parallelograms, circles, rectangles, triangles, rectangular prisms, cones, cylinders) and apply symmetry and transformations in geometric situations as well as develop a familiarity with the logic of proofs

Measurement – students understand systems and processes of measurement in both the U.S. Customary System and Metric System, use appropriate methods, tools, units and formulas in calculating measurements.

Data Analysis, Statistics and Probability – Students select and create appropriate graphical representations of collected or given data, analyze and interpret data, and understand and apply concepts of probability.

Additional process standards are addressed including problem solving (e.g. selecting appropriate methods to solve problems), reasoning and proof (explaining one's solution to a problem), connections (recognizing mathematics as a connected discipline within and outside the field), communication (being able to explain thought processes to fellow students and teachers), representations (use of tables, graphs, equations, verbal models).

Algebra 1 / 2

The Algebra 1 / 2 curriculum continues along the spiraling path of the Saxon Mathematics Program. Students will frequently review past concepts and explore concepts, both new and prior, on a more challenging level. Program goals are organized to address both the content and process standards proposed by the National Council of Teachers of Mathematics (NCTM).

The course begins with a review of arithmetic with fractions, decimals, whole numbers, order of operations and place value to strengthen and maintain basic skills. Students will be exposed to working with percents, with applications (with an emphasis on) emphasizing proportional reasoning, equation modeling, and or alternate representations.

Geometry and measurement are reviewed, strengthened and advanced (e.g. proportions in similar figures, Pythagorean Theorem, area, perimeter and volume of simple and irregular) figures. Data analysis, statistics and probability are strengthened through data representation (e.g. histograms, stem and leaf plots, box and whisker plots, other types of graphs) and understanding and applying probability toward independent and dependent compound events.

Students are introduced to and frequently use variables in evaluation of algebraic expressions and formulas as well as the solving and graphing of linear equations.

The course frequently uses supplementary materials beyond the textbook during the second half of the year, as students further develop problem solving skills, reasoning and proof, communication, and representation. During the third term there is a strong emphasis on signed numbers.

Prerequisite: Successful completion of Math 6, teacher recommendation, or success on placement test.

Algebra 1

The Algebra 1 course uses the McDougall-Littell series, which aims at developing a deep conceptual understanding of algebra. The year begins with an initial review of pre Algebra concepts, including operations with signed numbers, evaluating algebraic expressions, the real numbers and their subsets, and properties of real numbers. Much time is devoted to the solution of linear equations with a concentration on problem solving involving consecutive integer, geometry, and distance/rate/time problems.

The year progresses with an in depth examination of linear equations and functions, slope, and graphs, solutions of inequalities, systems of linear equations, laws of exponents, adding, subtracting, and multiplying polynomials, factoring quadratic equations, and an introduction to solving quadratic equations. Additional attention is focused on working with square roots, radicals, and rational equations.

Throughout the year, students apply algebraic modeling to problem solving and learn to examine algebraic patterns from multiple representations: situation, table, graph, equation / rule. The graphing calculator is introduced, and practiced because it becomes an important tool in later mathematics courses.

Prerequisite: Successful completion of Algebra 1/2, teacher recommendation, or through placement exam.

Algebra 2

The Algebra 2 curriculum also uses the McDougall-Littell series, (which aims at developing a deep conceptual understanding of algebra).

The year begins with an initial review of the tools of algebra (solving linear equations and inequalities, linear equations, functions and graphs, and systems of linear equation). Matrices and determinants are introduced and quadratic equations are examined more in depth. Students are introduced to imaginary and complex numbers. Later, students explore algebraic functions (quadratic, polynomial, square and cube root, exponential and logarithmic, and rational functions) from multi-representational perspectives (graphs, tables, rules).

Students are encouraged to start making conjectures and attempting to prove their ideas when examining various theorems, rules or patterns. Additional attention may be paid to right (and possibly oblique) triangle trigonometry and applications. The graphing calculator is used more often throughout this course.

Prerequisite: Successful completion of Algebra 1, teacher recommendation, or through the placement exam.

Summer Math Packets

Just as we encourage reading with our summer reading program, we also have a math packet requirement for students to keep their math skills active over the summer. These packets have a large number of problems that review the past years problem sets and encourage retention of material through long term practice throughout the summer.

English

The goal of English is to develop communication skills through reading and interpretation, writing and analysis, and thinking and discovering. There is a balance of opposites from classical literature, drama, and poetry to modern e-books, moves and the examination lyrics as poetry. Underneath it all is and emphasis on the fundamentals of grammar, vocabulary and spelling.

English 6

The goal in **sixth grade English** is to challenge the students to develop their communication and thinking skills beyond the elementary school level. Grammar is the foundation on which effective communication and thinking skills are built, and the focus this year is on the parts of speech. This knowledge enables the students to use the words presented in spelling and vocabulary lessons in context. Comprehension at both the literal and interpretive level is developed by reading selections from a literature textbook which exposes the students to a variety of literary genres. Select novels broaden their knowledge of the world and encourage them to think beyond their usual frame of reference. Writing assignments serve not only to present the opportunity to develop compositional skills, but also to become more analytical thinkers.

English 7

Expectations rise as the **seventh grade Englis**h course begins to prepare students for the challenges of high school. With the appropriate amount of guidance, students are encouraged to work more independently, taking responsibility for the quality of their work. The emphasis in grammar is on verb tenses and writing more complex sentences. Building upon this knowledge, students express themselves more accurately and employ a variety of sentence structures to express their thoughts in a more mature and interesting manner. Expanding their word knowledge, by exposing them to continued spelling and vocabulary lessons, results in less repetitiveness in their writing. The development of reading comprehension remains a major focus; in order to demonstrate their understanding of reading selections, students learn to write complete and clear responses to questions pertaining to their reading.

English 8

The objective of the **eighth grade English** program is to broaden and develop students' communication and thinking skills through an integrated study of grammar, spelling, writing, and literature. Students read more complex literature including: *Tom Sawyer, Romeo and Juliet, To Kill a Mockingbird, and A Tree Grows in Brooklyn*. These works not only challenge their comprehension skills and develop their vocabulary, but also expand their points of view. Students are exposed to the Harkness method and are asked to contribute to literature discussions in which they invoke inquiry and analysis supported by liberal use of quotations. Writing exercises focus on narrative, descriptive, and expository writings. Students also complete a literary comparative analysis. The year is culminated by using the MLA (Modern Language Association) methodology along with modern word-processing technology in order to complete a scholarly independent research paper.

Summer Reading and One Book One School

Northbrook's summer reading program serves three important purposes. First it encourages the love of reading and the practice of choosing quality literature. Our students are required to read one book of their choice off the list of Newbury Honor or Newbury Medal lists. The second purpose is to accelerate out English classes by getting students to read in advance one book that is to be taught in the fall. And finally the third purpose is to have all students participate in our One Book One School program which requires every student to read the same book over the summer.

The **One Book One School** program is one of the ways that our students and teachers all come together as a school. Each year one book is chosen that offers a topic or theme that lends itself to cross-curricula activities and learning opportunities. It allows the first month of school to have activities that bring all students together regardless of their grade or background. The topic surrounding the book offers a common thread for communication while building our community and culture in the new school year. This also offers a reference point for community discussions and activities throughout the year. Often our play or musical is linked to the book of the year.

Social Studies

The middle school social studies curriculum at Northbrook introduces students to world history, world geography and American history. At each level students are taught historical literacy skills. They become strong active users of historical texts, documents, maps, lectures and are asked to think critically. The students practice skills and concepts that apply directly to history, social studies and geography. The basic skills taught and reinforced are reading comprehension, note taking, critical thinking, outlining, essay drafting, MLA research and documentation, notebook organization, test preparation, test taking, public speaking, group work, reading and creating maps and graphs. Time is devoted weekly to discussing and learning about current events.

Grade 6: Social Studies / World History 1

World History in **grade 6** begins with an introduction to geology, geography and the reading of maps. In the second semester students are introduced to place and time starting with Prehistoric People, then to the River Valley Civilizations, finally the people and lands of Africa and the Americas. In the third semester these students study the Greeks and the beginning of the Roman Empire.

Grade 7: Social Studies / World History 2

World History in **grade 7** begins with the study of the rise and fall of the Roman Empire. Included in this unit is an examination of the origin of Christianity and how this faith impacted not only the Roman Empire, but also western civilization in general. The early Middle Ages are then introduced, and the focus is on the rise of the Germans, the Franks, and the Anglo Saxons. Throughout the year, students are learning to read carefully both for information and ideas and to speak effectively in class discussions. They are also continuing to improve their expository writing; they demonstrate their comprehension of the material taught by explaining it clearly, sequentially, and accurately in their own words.

Grade 8: American History 1

The focus of **eighth grade social studies** is the **history of the United States**. Since our students come from various public and private schools, they do not share a common background in American history. For this reason, we begin our instruction with a review of the periods of exploration and colonization. This is followed by the study of the events leading up to the War of Independence. A unit devoted to the Constitution examines the compromises made in its writing, the responsibilities of the three branches of government, and the Bill of Rights. The presidencies of Washington, John Adams, and Jefferson are then introduced. Skills essential to the study of history, such as reading comprehension and expository writing, are emphasized throughout the year. The development of the ability to comprehend cause and effect relationships in history and to approach the connection between current events and the past are major goals in our program.

Ethos Explored

Ethos Explored a part of our social studies curriculum and is also an essential part of the Northbrook Scholar Maker Classes that meet weekly. A Northbrook student is required to have completed at least one year of Ethos prior to graduation. Usually this is accomplished during their first year of matriculation.

Northbrook believes that producing good students is not just about textbook academic achievements, but should include subjects which help students get along in the world through the appreciation and understanding of diversity, culture, and media.

The word "ethos" is defined by Webster's' 9th New Collegiate Dictionary as meaning "the distinguishing character, sentiment, moral nature, or guiding beliefs of a person, group or institution."

Ethos Explored, is essentially **a look at viewpoints**. It is not just an examination of diversity and culture, but will also include an examination of economics and media which is known to affect viewpoints.

The Ethos Explored classes vary by trimester to examine:

- Local Experiences: What are the similarities and differences of the viewpoints of the members of the Northbrook community? What characteristics of the citizens of our local towns and communities are displayed in the media?
- National Observations: What distinguishes the people and major institutions across our country and what is the media's role in our observations?
- Global Explorations: What about people in various parts of the world...in what ways are their viewpoints similar and different from ours, and what is the media's role in our observations?

Science

Northbrook Academy believes in **hands on** learning and that science students should be able to get their hands dirty. Whether we are dealing with Life Science, Earth Science or Physical Science, we find that students that work on their own experiments are more likely to internalize information. You can lecture about density, but actually measuring out the volume and density using a triple beam balance to find mass leaves a more lasting impression.

Our science program uses many texts including those from the **Glencoe 15 Book Series**, but the curriculum only uses books as guides and is driven by **hands on** lab work. We might be collecting and analyzing water from a local lake or pond, or dissecting a bullfrog. Students get involved in as much as they can and very often learn important lessons from their mistakes. One thing is certain --in Northbrook science classes, students will have many opportunities to get their hands dirty!
The middle school science program stresses an inquiry based, hands on approach that focuses on the understanding of the scientific method. It requires building a set of study skills necessary to master the disciplines of science, including note taking, recording observations, and conclusions from data produced during experiments.

Science 6

Sixth grade students discover science by exploring the disciplines of Physical Science, Earth Science and Life Science. **Physical Science** covers scientific measurement and dimensional analysis, laboratory investigations enables students to safely use scientific hardware and develop the necessary skills to collect and analyze data. **Earth Science** covers weathering, causes and effects of soil erosion and effects of climate on the earth. Students also explain how geologic time can be divided into units, relate changes of earth's organisms to discussions on the geologic time scale, and describe how plate tectonics affects species. **Life Science** investigates the major systems of the human body, cell theory, and how organisms are classified.

Science 7

Grade 7 students study the **Life Science** of human development. They follow the process from fertilization to birth tracing the major changes in growth along the way. Students are exposed to important principles of genetics including genetic crosses, Mendel's experiments, interpreting human pedigrees, genetic engineering and multiple births. **Physical Science** includes the structure of the atom, experimentation emphasizing physical and chemical properties and changes, density, thermal expansion and characteristic properties of matter, and the gas laws. **Earth Science** deals with the changing role of hydrocarbons and petrochemicals as fuel sources, and the development of alternative energy sources.

Science 8

Grade 8 students continue their development in **Physical Science** with a study of the periodic table, the structure of matter, the Periodic Law, families of elements, properties of matter, chemical bonding and types of chemical reactions, solution chemistry, acids and bases and nuclear chemistry.

Hands on experiments enable the student to discover answers the way scientists do, and allow the student to share his findings with others in the class. Students develop the ability to write and balance formulas, name compounds, and write and balance **chemical equations**. Students also learn to separate an unknown mixture of solids and liquids by using techniques such as fractional distillation, filtration, fractional crystallization, and chromatography. Students learn to name the separated substances and list their characteristic properties. A study of speed, velocity and acceleration, in addition to Newton's Laws completes the year.

Ecology

Northbrook Academy offers ecology as part of the Scholar Maker program. This weekly course offers an additional science class that enhances the appreciation, practice, and understanding of science.

Ecology is the study of **living organisms** and how they interact with one another and with the physical and chemical environment. In this class, students will examine these interactions in order to better understand the natural world around them. Students will spend time in the classroom learning basic ecological principles and then apply these principles through a series of hands-on experiments. In good weather, students go outside to explore the various habitats in order to better understand the unique plant and animal communities that live in the area. As a result of this course, students become informed citizens who have the knowledge and the environmental sensitivity to help protect our fragile planet Earth.

Foreign Languages

Northbrook is proud to have a rigorous and comprehensive foreign language studies program which excels at preparing students for high school. This currently includes studies in both Spanish and Latin.

Spanish Studies

Our program includes using the *Realidades* series of textbooks that uses a standard-based approach to balance grammar and communication. The program offers technology designed to integrate language and culture to teach and motivate all students.

The Northbrook Spanish program meets or exceeds the **five standard goals** for learning a foreign language including:

1. Communication in a language other than English.
   - 1a. Students engage in conversation, provide and obtain information, express feelings and emotions, and exchange opinions
   - 1b. Students understand and interpret written and spoken language on a variety of topics
   - 1c. Students present information (in Spanish), concepts and ideas to an audience if listeners or readers on a variety of topics.

2. Gaining knowledge and understanding of other cultures
   - 2a. Students demonstrate an understanding of the relationship between practices and perspectives of the culture studied
   - 2b. Students demonstrate an understanding of the relationship between the products and perspectives of the culture studied.

3. Connecting with other disciplines and acquiring information
   - 3a. Students reinforce and further their knowledge of other disciplines through the foreign language
   - 3b. Students acquire information and recognize the distinctive viewpoints that are only available through the foreign language and its cultures.

4. Gaining insight into the nature of language and culture
   - 4a. Students demonstrate understanding of the nature of language through the comparisons of the language studied and their own.
   - 4b. Students demonstrate understanding of the concept of culture through comparisons of the cultures studied and their own.

5. Participating in multilingual communities at home and around the world.
   - 5a. Students use the language both within and beyond the school setting
   - 5b. Students show evidence of becoming life-long learners by using the language for personal enjoyment and enrichment.

Spanish 1

The Northbrook Spanish program of study begins with the Spanish 1 course which uses *Realidades A* textbook and online classroom. This is a full year 4 days per week course. It is for students with limited (or no) previous Spanish classes.

The Spanish 1 program follows the foreign language standards across five units. These units serve to introduce a new student to the language and culture. Some topics covered include fundamentals such as numbers, weather, seasons, dates, greetings, instructions, time, and body parts. While adding verbs, adjectives and grammar skills, students also learn about describing friends and activities, school and locations of items, food, preferences, hobbies and pastimes.

Prerequisite: None. Students who have had some Spanish prior to Northbrook are required to take the placement exam.

Spanish 2

Spanish 2 (A or B) builds upon the work in Spanish I and uses the *Realidades 1* or *Realidades B* textbook and online classroom. It is a full year 4 days per week course. Spanish 2B is for students who have had a Spanish class outside of Northbrook, but who have not completed the *Realidades A* curriculum. Spanish 2A is for students who completed the *Realidades A* curriculum.

The Spanish 2 program follows the foreign language standards across five units. These units serve to continue a students understanding of the Spanish language and culture. Some topics covered include a review of the fundaments of Spanish 1 as well as celebrations and family life, the home, shopping, vacations and experiences and television and media. The grammar in this course covers superlatives and comparisons, possessive adjectives, stem changing verbs, preterite verbs, and verbs which help infinitives.

Prerequisite: Successful completion of Spanish 1 (with a grade of a C or above), the recommendation of a teacher, or through the placement exam.

Spanish 3

Spanish 3 brings the students into more complex vocabulary and grammar and uses *Realidades 2* textbook and online classroom. This is also a full year course, though the amount of material covered may vary from year to year. The Realidades Spanish curriculum used by Northbrook is designed for Middle School students. However, its content combines to equal a high school level course. It is usually possible for Northbrook middle school students to test out of Spanish 1 and sometimes Spanish 2 at the high school level when they have completed Spanish 3 at Northbrook Academy.

The Spanish 3 program follows the foreign language standards across ten units. These units serve to continue students' understanding of the Spanish language and culture. This fast-paced course has a heavier emphasis on grammar, particularly the many conjugations and tenses of verbs and irregular verbs, commands, but many of the

vocabulary words are recycled from Spanish 1 and Spanish 2. This course includes learning about being a tourist and the language needed to travel to a Spanish speaking country.

Prerequisite: Successful completion of Spanish 2 (with a grade of a C or above), the recommendation of a teacher, or through a placement exam.

Latin 1

Latin 1 includes using the Ecce Romani textbooks and workbooks which offer a reading-based approach that immerses and engages students by bringing the history of the Roman civilization to life with interesting subjects and a continuous storyline about the life experiences of a typical Roman family living in A.D. 80. This is complimented with Jenny's First Year Latin textbook which offers a comprehensive progressive study and practice with Latin grammar.

The objectives of offering Latin at Northbrook Academy is grounded less in the acquisition of oral skills than in the recognition and generation of the written language, familiarization with classical civilization and mythology, and developing awareness of the primary role of Latin in the formation of English vocabulary

The benefits of studying Latin in the Middle School are evident with improved English comprehension, grammar and vocabulary skills as measured by common High School entrance exams such as the SSAT. In addition the practice of studying this foreign language requires that students develop and use excellent, scholarly study skills.

Skill Builders and Scholar Makers

Skill Builders and Scholar Maker class are courses that meet only one day a week. The Skill Builder Program includes our Study Power and Subject Aid in addition to individual practice using academic achievement skills such as drills, researching, and test taking techniques and practice. The Scholar Makers Program includes classes that meet once a week to offer additional focus on reading, writing, math, technology, science (Ecology) or social studies (Ethos).

Study Power

To further develop their study skills, all students take at least one semester course of Study Power in which they are taught basic study skills, organizational tools and methodologies that will help them excel in their academic pursuits.

This course is based upon the *Study Power* book and workbook written by William Luckie & Wood Smethurst which is based upon the study skills taught at Harvard and Emory Universities. A quote from the book: "It turns out that school success is not related in any direct way to intelligence, quickness, ambition, or any other such characteristics. Primarily, it comes from the ability and desire to manage work and time effectively. . .It's as if you could, by practice, make yourself smart."

Subject Aid

Every day all students have a period in which all primary teachers are available on campus to offer **personalized aid** in their subjects. This period is similar to the "office hours" conducted by professors in universities. Utilization of this time is the key to the rigor of a Northbrook course. If a student has any trouble at all understanding a concept or subject, they can use this time enables him or her to seek the assistance they needed to succeed.

This also allows teachers to teach to the higher level of students, knowing they can address slower learners' needs during a subject aid period. Students may also utilize this time to work with **peer tutors and study buddies** to collaboratively enhance their comprehension and to study for pending exams. It is a period in which students study skills are reinforced and monitored.

Research and Study Skills

The Study Skills curriculum is embedded within the daily Subject Aid period. Teachers in each of the primary subjects use a study skills program to set student's expectations on how to prepare for exams in their classes. Study skills topics include: note taking, locating main ideas, outlining, understanding tables and graphs, and library skills such as use of computers, indexes, card catalog, reader's guide and atlases. The culmination of work in this course in grade eight is a fully annotated independent research paper prepared on their own topic and in close cooperation with the teachers.

Math Lab

Our Math Lab is run within our Subject Aid period and it provides individualized remediation or enrichment for all students. Small groups work on a particular problem set either with a peer tutor (from an upper level math class) or a teacher.

Scholar Maker: Reading

In order to encourage **a love of reading**, Northbrook's reading program requires students to always have an independent reading book of their choice so that they may use their unscheduled time for reading. .The Reading Scholar Maker Course meets weekly to monitor students' progress with their independent reading. The meeting is also an opportunity to enhance the comprehension of novels that are taught in English class and to read and discuss short stories within **a literature circle** and discussion group.

Scholar Marker: Math Tech

Math Technology is a course which begins by covering the fundamentals of using the Tech Lab at Northbrook Academy. It covers all the tools needed to be a successful Northbrook student. This includes review of Internet Acceptable Use Policy and how to use the Northbrook Network for document sharing and printing. Students learn the Northbrook Format for all typed written papers while practicing word processing. They also learn the basics of presentation software which is a common format required for school projects and presentations. A number of lessons are spent working with spreadsheets to apply principles and operations learned in Math. Understanding the

basics of computers is also necessary; and students enjoy dissecting old computers to discover the relationships of internal hardware devices. While we offer a state of the art Tech Lab that is PC based utilizing desktops, students are allowed to use their own laptops and learn how to follow lab rules while being device independent.

Scholar Makers: Writing

Through our writing program students become aware of the omni-presence of writing and develop the scholarly skill of seeking continuous improvement in their own writing. One day a week, English class is dedicated to writing instruction based upon the John Collins methodology (plan, draft, review, rewrite). However writing skills are emphasized throughout the Northbrook curriculum. Teachers work with students to "write to learn," not just to "learn to write."

Primary and secondary subjects (including art) present a written assignment (as class work or as homework,) that requires a thoughtful written answer. While many interesting questions are covered as class discussions; (a luxury made possible by our small classes) writings becomes the prompts for more in depth discussions because they force the writer to clarify ideas and to organize thoughts-- where as verbal responses can be more impromptu and colloquial. An individual student has a writing portfolio that collects works across the curriculum and shows development over time.

Scholar Maker: Ethos (See description under social studies curriculum)

Scholar Maker: Ecology (See description under science curriculum)

GRASP (Grow, Reach, Achieve, Succeed, Prevail)

Northbrook acknowledges that not all students find the academic world easy to navigate. GRASP puts academic success back into the hands of students. The mission of GRASP is to offer all Northbrook Academy students the full experience of a challenging college preparatory academic environment by **providing proven supports necessary for success**. Students admitted to the GRASP program will work under the guidance of the Director of Enhanced Learning. The **GRASP** program includes:

1. Weekly meeting with a personal advisor to:

- learn about personal strengths and weaknesses as well as strategies for improvement
- discuss individual course challenges
- improve organizational skills
- facilitate time management
- ensure academic and social adjustment
- review progress and assessments
- offer any additional support needed
- facilitate as liaison between student , teacher and parents

2. Weekly small group meeting with other students and a personal advisor to:

- share experiences
- celebrate successes
- discuss struggles

- develop strategies
- express concerns
- receive support

3. Small group, supplemental written language program for qualified students using a researched based, multi-sensory program from **Project Read**, to improve understanding of written language rules and use of English sentence structures. "This (Project Read) written expression curriculum and instructional strategies inspire and energize students as they learn the fundamentals of writing."

> "This curriculum teaches written language sequentially and systematically coupling creative freedom with direct multi- sensory skill instruction. Instruction moves from barebones sentences through five kinds of paragraph development. Knowledge gained gives wings to creativity and independent thought."

Additional learning services beyond the **GRASP** program are available through a private contract. These include (but are not limited to):

1. **Fast ForWord** program by Scientific Learning. This unique computer software develops adolescent literacy. When it is used regularly and frequently it provides learners with measurable language improvements.
2. **Private Instruction**
3. **Diagnostic Testing**

Visual and Performing Arts

The Visual and Performing Arts are essential components of the Northbrook curriculum because they encourage creativity and self expression, require self discipline, and develop self confidence,.

Visual Arts

Visual Arts instruction includes: Studio Art and Sculpture, Digital Photography, PhotoshopArt, Sewing/Costuming, Graphic Arts and Video Production. Each spring there is a Student Art Show within our annual Variety Show. Students are expected to complete at least one visual art class each year.

Studio Art and Sculpture

This course meets once per week. It is offered throughout the year and may combine students across various grades. While the content varies year to year, the components remain similar. Each year there is one unit on a period in art history, one on sculpture and 3d art and many lessons on drawing (using various tools) and a unit on painting with canvas and acrylics.

Prerequisite: none

Digital Photography

This course meets once per week. It is offered throughout the year and may combine students across various grades. Students begin by becoming more comfortable working their cameras. They learn about the viewfinder and lenses and how to frame and to "see" their subjects differently. With weekly assignments students are challenged to photograph things from different perspectives and close up, concentrating on details, textures, shape, colors and contrast. They learn about studio photographic lighting and take photos of still life compositions. They learn about the challenges and requirements of portrait photography. Throughout the course they practice basic skills and learn the language of photography.

Prerequisite: Access to a digital camera and the ability to turn in assignments on portable media such as a CD or memory stick.

Photoshop Art

This is a single semester course offered on alternative years. It meets once a week. The fundamentals of Photoshop are taught and students choose a photo to manipulate and modify in order to meet an artistic objective. Students learn the differences between digital images and printed images and must produce a printed work for display in the school. This course usually includes a trip to a professional photography laboratory to study photographic output from their digital works.

Prerequisite: Successful completion of Digital Photography or recommendation from a teacher. Students need a license to Photoshop software and a laptop.

Graphic Arts

This is a single semester course offered in the spring semester each year. It meets once a week. This class begins with the basic principles of good design and moves on to support independent projects such as programs and poster designs for Northbrook performances. Students are also challenged to learn the language of graphic art such as visual elements (of line, shape, color, hue, value, intensity texture, direction and size) movement, balance, emphasis and unity.

Prerequisite: Successful completion of one semester of Math Tech or recommendation of a teacher.

Video Production

This is a single semester course offered in alternate years. It meets once a week. This class is for students who have had at least one term of theater. Students examine issues with film compared to stage. They work using basic home digital video cameras. Students work in teams and are responsible for creating video shorts to be presented at the Northbrook Annual Variety Show. Students create PSAs (Public Service Announcements) or commercials and may work with the Music Tech class to prepare a music video. In the tech lab, students use readily available software, such as Microsoft Movie Maker, to do simple post production video editing.

Prerequisite: Successful completion of one semester of Math Tech and Theater or recommendation of a teacher.

Performing Art

Music

All students take at least one music class each year. In addition to teaching the basics of notation, music theory and music history, Northbrook students also have a number of opportunities to explore their ability to create music.

Ensembles

Northbrook Academy has had various ensembles as large as a concert orchestra and a string chamber group to small quartets, trios and duets. Most students who have played an instrument longer than one year are encouraged to complete at least one semester of ensemble work because the skills learned are important for any musician. Students in ensemble learn how to play in a group and to follow a conductor. This class sets expectations of musicianship which include: set-up and preparation for rehearsals, rehearsal behavior, working with a stand partner, understanding direction of a conductor, and performance etiquette.

Prerequisite: One year of instrumental lessons, or recommendation of a teacher

Rock Band

Northbrook Academy's rock band is another form of ensemble. The difference is that the band has a director but not a conductor and it has vocalists in addition to instrumentalists. Also, the electronic component of a rock band (such as microphones, mixers, speakers, and amps) requires members of the band who are not performers but who work on the sound behind the scenes. In addition to preparing for a performance, the Rock Band learns about recording and produces at least one recording a year.

Prerequisite: None

Show Choir

Northbrook's Show Choir is a singing group centered upon performance. Students learn to mix solos with choral harmonies and all songs are choreographed. This group performs not only at school events but also when invited to sing in our local community such as at nursing homes and fundraising events.

Prerequisite: One year of vocal experience, or recommendation of a teacher

Music Fundamentals

This is an introductory music course that teaches (or reviews) the elements of music such as tempo, meter, intonation, and tone. Notation for the bass and treble clef is also taught along with the basic motions of conducting. Some elements of music theory are also discussed though the emphasis of this course is on fundamentals. Students do

project work, each studying and presenting a different composer.

Prerequisite: none

World Music

This semester long course reviews music from all over the world. Students research various countries and watch video performances of various music types. There is a particular focus on recognizing how themes and rhythms from certain cultures traveled into other cultures, such as how African rhythms arrived in America. Students listen for drumming rhythms throughout the music and watch for uses of similar instruments such as violins and guitars. Students are asked to try to interpret songs of other languages and to decide which emotions are evoked (without translating the words). This exploratory course opens up the giant world of music and at the same time makes the world smaller through recognizing similarities and how music is a universal language.

Prerequisite: none

Music Technology

This course teaches students: Audio Basics, Live Show Engineering, Multi-track Recording, Audio Editing, Digital Music Production. Students work to learn to answer some very technical questions about music, such as: What is a sound wave, frequency spectrum, or decibel? Can you tune a guitar or repair an xlr cable? In this class, students work to build the knowledge it takes to be a good Soundperson. There is also be lots of hands-on experience as students learn to set up equipment from microphones to mixer, amp to speakers for a great sounding live event.

In the Northbrook Studio, students learn the exciting art of professional recording, mixing, and mastering. On the computer, it's editing of speech and sound effects, while musically, we will each get to create an original song for our own digital CD project using drum machines, synthesizers, samplers, and a multitude of audio effects. In addition there is a group project which requires students to invent, record, and import sound effects to create the background sound in an old slapstick comedy clip.

Prerequisites: none

Dance

All students take some dance as part of the Northbrook curriculum. At Northbrook, dance is both a part of Physical Education (PE) as well as the fine arts.

Dance is an art as well as an athletic endeavor. At Northbrook, dance is an important way for students to develop poise and confidence with their rapidly growing bodies. It is also a very fun way to exercise to music.

Northbrook's dance program is for beginners as well as students who have studied dance for many years. The class meets one to three times a week.

During the beginning of the semester students develop basic skills and confidence in their ability to move to music. Very quickly students begin to work on routines that will be featured in the Annual Northbrook Variety Show. Students who take dance outside of school are also invited to perform their routine in the Variety Show. This gives advance students the opportunity to do solo work and hone their individual performance skills. Work done in third term is incorporated into the spring musical as a dance number.

Northbrook has been open to a variety of dance styles. Dance classes have included instruction in modern dance/ hip-hop as well as classic dance/ ballet. For the 2009 production of "The Green Teen Group" students were able to perform three unique styles of dance: a **"Stomp"** routine using basketballs and masks, a **"Poi"** routine spinning glow lights to music, and a **"Black Light Theater Stick-figure**" routine.

In PE **all students learn to waltz** in the spring. It has become a tradition at graduation to have "the white gloved gentlemen escort their fellow ladies" in a grand waltz that culminates the year and begins the graduation celebration. *While this tradition may seem "old fashioned", many of our alumni have remarked how thankful they were to at least have some experience partner dancing before attending their semi-formals, proms, and family weddings.*

Prerequisite: none.

Performance Choreography

Advanced dance students may choose to work with a director and create the choreography for an upcoming Northbrook performance.

Prerequisite: Three years of dance and recommendation of a teacher.

Public Speaking, Debate and Theater

Public Speaking

Northbrook students are expected to complete at least one semester of public speaking. This course prepares students to speak in public through a number of small speeches (starting at one minute) and a final five minute presentation. Students learn about vocal inflection, body language, and posture while speaking. In addition this class offers students a chance to research and prepare to speak on personal or controversial topics as well as current events.

Prerequisite: none

Debate

Debate is offered to students who have completed at least two semesters of public speaking. Students learn the basic concepts of debate and practice excellent research skills in their debate preparation. The semester ends with a "Great Debate" competition.

Prerequisite: Two semester of public speaking.

Theater

All students take theater as part of the Northbrook curriculum. Students learn self confidence while paying theater games to develop improvisation techniques. They learn to appreciate theater by attending a local performance. They pay attention to the "world beyond the actors" by trying their hands at direction, scenery, props, stage management, sound and promotion. Theater is not just about performances. At Northbrook, theater extends beyond the stage and flows equally into many other subjects.

For example, Northbrook students visited Framingham State College to participate in the "Bose In Harmony with Education" Program where they studied the **science of sound** before building their own instruments for their 2008 musical production of "The Green Teen Group." In **math class the** Northbrook students predicted the length of a tube needed to produce each note on the musical scale (a measurement needed to build their Tubulum).

The 2009 musical, "Annie Jr." highlighted some of the issues of poverty in New York City that 8th grade **English Literature** students also read about in *A Tree Grows in Brooklyn*

The 2010 play, "A Load of Rubbish", tied intimately into the students' CoastSweep beach cleanup, and their **ecology class** studies of recycling and waste management. Throughout the year the play will act as a point of reference for all students as they participate in Earth day projects, and study the **science of water.**

The 2012 musical, "Northbrook's Little Mermaid" was tied to our **One Book One School** study of *The Music of the Dolphins,* and a reading/writing assignment which was a comparative study of Hans Christian Anderson's *Little Mermaid* with the Disney version. In addition the school enhanced this study with and a field trip to whale watch in Plymouth.
Prerequisite: none. *Performances require auditions by all actors and actresses; a commitment to rehearsal and performance dates is required to hold a role in a show.*

Musical Theater Performance and Production

During spring term every year the Northbrook community comes together for its musical production. This performance is also the center of other arts classes in the spring. For example, studio art classes work on props, scenery and costumes. Dance classes work on choreographed routines for the show. Ensemble work is focused on musical songs and chorus is made busy preparing songs for the choral numbers. Students are involved in all aspects of the productions both on stage and back stage, pre-production and post- production including: set building and striking; lighting and sound; curtains, sets and drops; marketing, ticketing, programs and box-office; and

costume management. Each show also has a student stage manager and student assistant director in order to allow students to develop these important management skills.

We cycle our style of productions over three years in order to allow students to explore unique performance opportunities. One year we will write our own show, the next perform a well known Broadway style show, and the next a lesser known show

Prerequisite: none. *Performances require auditions by all actors and actresses; a commitment to rehearsal and performance dates is required to hold a role in a show.*

Health and Wellness and Athletics

Northbrook Academy takes its focus on mind, body and spirit very seriously. In addition to rigorous academic studies, Northbrook students benefit greatly from plenty of physical exercise and from the lessons learned by challenging themselves physically and mentally through participating in a team sport. All students are required to participate in the health and wellness program throughout the year.

Our varied program includes offering some form of exercise or instruction every day of the week during our co-curricula time. In addition to using the Pierce Fields as part of our extended campus, we enhance our offerings by utilizing the Lindsay Gymnasium during the cooler fall and winter weather. Students may earn Health and Wellness credits through participation in health and wellness classes, intramurals and fitness as well as through dance and our competitive athletic sports of cross-country, basketball and lacrosse.

Promoting health and wellness for all students is the shared responsibility of families, schools, communities and students themselves. To that end, the Health and Wellness effort at Northbrook Academy strives to help create programs and educational strategies for all constituencies on a regular basis to address any matter that might enhance or improve the well-being of the student. The program recognizes that coaches, activity advisors, health educators, athletic directors, team captains and other athletes are powerful role models for youth. These potential leaders have a unique opportunity to set a positive example and help students make healthy life choices.

Intramurals and Fitness

Northbrook Academy has created many opportunities for students to develop their personal fitness through participation in sports through a variety of Health and Wellness programs which include a variety of intramural sports/activities throughout the year, such as:

- Fitness Running: Not all students can commit the time to run as part of the cross-country team, but most anyone can run for fitness. There is a great deal of pride when a student watches their times and performance improve when focused on fitness running.

•Basketball: Instructional ball games and the rules of the sport are taught at the gym and students enjoy playing games.
Kickball: Students form teams and play spirited games out in the ball fields.
• Tennis: In the spring, when Northbrook utilizes the Pierce Fields for Health and Wellness, they use the tennis courts to teach basic tennis rules and to encourage intramural game play.
• Street / Floor Hockey: The game plays and basic rules are taught as part of Health and Wellness classes and many students enjoy playing hockey indoors and outdoors in the spring.