

# Math

---

## 6th Grade (36 weeks)

### Number and Operation

- Represent, compare and compute with positive fractions, decimals and percents.

### Algebra

- Recognize and represent relationships between varying quantities.
- Understand equations involving variables and positive rational numbers.

### Geometry and Measurement

- Calculate perimeter, area, surface area and volume of 2-D and 3-D figures.
- Understand and use relationships between angles in geometric figures.
- Convert within measurement systems to solve problems.

### Data Analysis & Probability

- Use probabilities to solve problems using fractions, decimals and percents.

## 6A and 7th Grade (36 weeks)

### Number and Operation

- Represent, compare and compute with positive and negative rational numbers.

### Algebra

- Represent and solve problems involving proportional relationships.
- Represent and solve problems using equations.

### Geometry and Measurement

- Use proportions to solve problems involving circles and related geometric figures.
- Analyze the effect of change of scale, translations and reflections on the attributes of two-dimensional figures.

### Data Analysis & Probability

- Display and use data to draw conclusions and make predictions.
- Calculate probabilities and reason about probabilities using proportion.

## 7A and 8th Grade (36 weeks)

### Number and Operation

- Represent, classify, compare and compute using real numbers.

### Algebra

- Understand the concept of function and distinguish between linear and nonlinear functions.
- Represent and solve problems involving linear functions using tables, verbal descriptions, symbols and graphs.
- Solve equations and inequalities involving linear expressions.

### Geometry and Measurement

- Use the Pythagorean Theorem to solve problems involving right triangles.
- Solve problems involving parallel and perpendicular lines.

### Data Analysis & Probability

- Interpret data using scatter plots and approximate lines of best fit.
- Use lines of best fit to draw conclusions and make predictions.

## Intermediate Algebra (Math 8A)

### Algebra

- Understand the concept of function, and identify important features of functions and other relations using symbolic and graphical methods where appropriate.
- Sketch graphs of linear, quadratic and exponential functions, and translate between graphs, tables and symbolic representations. Know how to use graphing technology to graph these functions.
- Solve equations that contain radical expressions.

### Geometry and Measurement

- Calculate measurements of plane and solid geometric figures.

### Data Analysis and Probability

- Display and analyze data; use various measures associated with data to draw conclusions, identify trends describe relationships.
- Explain the uses of data and statistical thinking to draw inferences make predictions and justify conclusions.

# Science

---

## Science - 6th Grade (36 weeks)

The 6th grade science program focuses on physical science. Scientific method and critical thinking are emphasized in the exploratory activities. Objectives/outcomes: Use scientific method to explore topics; work cooperatively in groups on all labs; connect classroom activities to daily life; learn proper use of lab materials and equipment; safely complete all activities.

Major topics addressed: chemistry, physics, density, heat, light, sound and energy.

## Science - 7th Grade (36 weeks)

The 7th grade Life Science course is an overview of all living things beginning with microscopic life and culminating with anatomy and physiology of the human body. It is an introduction to the principles of biology and designed to prepare students for high school biology.

Topics: Learn and study scientific method which include observation, data collection/analysis, and models. Apply the scientific method while studying cells, diversity of organisms, ecology, heredity, and human anatomy.

## Science - 8th Grade (36 weeks)

This class emphasizes the earth's structure including the geosphere (plate tectonics, volcanoes, earthquakes, and earth layers), the hydrosphere (water cycle, erosion, and water bodies), and the atmosphere (weather and climate). Students also start to understand the solar system through study of the moon phases and tides, the seasons, eclipses, gravitational force, and planetary motion. Through systematic observation, data analysis, field studies, and models, students develop scientific skills to enable them to recognize concepts and evaluate how earth/space systems interact and how this affects human life.

Topics: Scientific Procedures, Scientific Method, Matter & Energy, Rocks & Minerals, Weathering & Erosion, Plate Tectonics, Earthquakes & Volcanoes, Earth History, Astronomy, and Weather.

# Language Arts / Reading

---

## Language Arts - 6th Grade (36 weeks)

The sixth grade Language Arts curriculum focuses on reading, writing, speaking and listening. Reading from textbooks, newspapers, educational magazines and content area materials make up the nonfiction component. The fiction section consists of poetry, short-stories and novels from a variety of genres. The seven writing traits, the writing process, and grammar will be taught in the following forms: paragraph construction, letters, poetry, informative reports, memoirs and essays. Language Arts students will learn skills associated with being good listeners as well as practicing public speaking while expressing prose and/or poetry.

Topics: Reading & Literature: Word Recognition, Analysis, Fluency; Vocabulary Expansion; Comprehension (Nonfiction Reading); Literature; Writing: Types of Writing (informative, memoir, poetry, expressive, persuasive); Elements of Composition; Spelling, Grammar & Usage; Research; Handwriting & Word Processing; Speaking and Listening: Speaking & Listening (Oral Presentations)

## Language Arts - 7th Grade (36 weeks)

7th grade Language Arts/Reading will focus on genres/sub-genres in literature, vocabulary expansion, nonfiction reading strategies, public speaking, and reading for enjoyment. 7th grade students will improve their writing skills through journals, essays, research based reports, and technical writing.

Topics: Non-Fiction - biography, autobiography, memoir, technical reading; Reading & Vocabulary - analogies, similes, metaphors, fact & opinion, author's purpose/point of view, fictional elements; Literature - historical fiction, realistic fiction, documentary novel; Writing - informative report (5 paragraph essay), basic essay structure, journals; Grammar & Usage - nominative, reflexive, objective & possessive pronouns, pronoun/antecedent agreement, sentence types; Speaking & Listening - oral presentations w/self-evaluations; Research - plagiarism (word process); Media Literacy - search techniques, accuracy and credibility of information on Internet.

## Language Arts - 8th Grade (36 weeks)

Students in 8th grade Language Arts will receive instruction in the following areas: Non-Fiction (media, advertising, newspapers, editorials), Vocabulary (roots), Literature (drama, short stories, novel selections, fantasy, poetry), Writing (essay, research paper with citation of sources [MLA format], editorial, constructed response), Grammar (sentence structure, mechanics, parts of speech), Speaking and Listening (drama expression, note-taking on oral presentation, evaluate credibility, literature circles), Poetry.

Topics: Short Story (introduction to famous authors; interpretation and understanding of literature); Writing Analytical Essays (understanding multiple paragraph essay format; using facts, opinions, and research to support a thesis; incorporating correct mechanical elements; developing self-assessment skills); Media Literacy Unit (propaganda, bias, credibility, and editorials, newspaper); Drama Unit (read and analyze dramatic literature); Poetry Unit (elements of figurative language, analyzing and writing poetry); Fantasy Unit (introduction to Fantasy literature, read and analyze novel); Silent Sustained Reading.

# Social Studies

---

## **Social Studies - 6th Grade (36 weeks)**

The sixth grade social studies program focuses on the study of Ancient Civilizations. All teachers teach Ancient Mesopotamia, Ancient Egypt, Ancient Greece, and Ancient Rome. If time permits, teachers may include Ancient China, Ancient India, and the Maya Civilization. In each civilization, students will learn about land forms, major cities, religion, government, daily life, legacies and contributions unique to each culture. Students will also learn skills essential to Social Studies such as reading and understanding maps and timelines and making inferences as to how the past impacts modern civilization.

## **Social Studies - 7th Grade (36 weeks)**

This course will examine the major highlights of our nation's history through several broad time periods beginning with early exploration or migration and concluding with the Civil War era. Attention is given to the factors of geography, economics and sociology and their impact on history. In studying the sequence of the periods and their interrelationships, certain recurring themes such as migration, values and beliefs, cooperation and conflict emerge as an important part in the shaping of our culture and national character.

Topics: Colonization / Regional Comparisons - French, Spanish, English, Portuguese); British Colonies - Slave Trade (West African Culture, Roots); Conflicts with Europe - French & Indian War, American Revolution; Declaration of Independence - Articles of Confederation; Constitution - Separation of Powers, Checks & Balances, Branches of Government; Westward Expansion - Battles for the Northwest Territories, Louisiana Purchase, Lewis & Clark, War of 1812; Manifest Destiny - Conflicts with Spain & Mexico, Gold Rush; Sectionalism - Civil War, Reconstruction

## **Social Studies - 8th Grade (36 weeks)**

Geography describes and explains the past, present, and future locations and spatial patterns of humans and their settlements, cultural and economic traits, and natural environment and resources. The language of maps is a distinctive language of geography, and an ability to use and interpret maps is fundamental to the study and practice of the discipline. 8th Grade Geography is designed as an introduction to the study of physical and cultural features of the earth and their distributions, causes, and consequences to humans. Topics include landforms, climate, natural resources, population, and human behavior in spatial context, economic growth, urbanization, and political systems. Major units are Physical Geography, Human Cultural Geography, Minnesota Geography and a Regional study of the United States Geography.

# Encore Class Descriptions

---

## **Health (9 weeks - 8th Grade)**

Each student will learn to make informed decisions about their personal health & wellness. The following units of study are implemented at the appropriate age and developmental level: Mental & Social Health: Parent/ Teen Conflict, Defense Mechanisms, Stress Management, Depression and Suicide; Chemical Awareness: Use, Misuse and Abuse, Drug Classification of prescription, OTC and illegal drugs, Drug Laws, Refusal Skills; Body Image & Composition; Sources of negative body image, Eating Disorders, Body Fat %, Body Mass Index (BMI), Metabolism, Fad Diets, Safe and effective weight loss/gain; Human Sexuality: Individual Sexuality, Healthy /Unhealthy Relationships, Reproductive System & Anatomy, Pregnancy Prevention, Sexual Conduct Laws, Sexually Transmitted Infections

## **Physical Education (9 weeks - 6th, 7th & 8th Grade)**

Physical education serves the entire student population delivering a wide range of movement experiences that develop physical fitness, wellness, and motor skills through physical activities. Our mission is to foster living a healthy life-style. Athletic programs are essentially designed for youngsters who are eager to specialize in one or more sports and refine their talents in order to compete with others of similar interests and abilities. Developmentally appropriate physical education programs, in contrast are designed for every child. The intent is to provide children of all abilities and interests with a foundation of movement experiences that will eventually lead to active and healthy life-styles. Athletic competition may be part of this life-style, but not the only part.

## **Family & Consumer Science (9 weeks - 7th & 8th Grade)**

The mission of FACS is to build and reinforce academic skills through an interactive curriculum where students apply learning toward real world situations to become better prepared for life. Students will rotate between two FACS Units during 7th and 8th grade.

Grade 7 Units - Consumer Science Unit: Advertising strategies, decision making, unit price, consumer rights and responsibilities, financial payment options, credit card basics, and budgeting; Foods & Nutrition Unit: Portion size distortion, creative cutting techniques, kitchen math, food labels, and healthy food labs.

Grade 8 Units- Child Development: Infancy, Toddler & Preschooler development (PIES), guiding children's behavior (discipline), and Playschool Day. Food & Nutrition Unit: Diet Analysis, main nutrients and their impact on the body, diet related illnesses, meal planning and advanced food labs.

## **Visual Arts (9 weeks - 6th & 8th Grade)**

Students will explore a variety of artistic styles and design. They will develop projects using various mediums: paint, marker, colored pencil, pastels, collage, creative masks, book making, air brush and kiln fired clay sculpture. The students will use the language of art: elements and principles to make aesthetic decisions that influenced their work, explore the relationship between art history, culture and our society. Art curriculum design will tie into and support core curriculum.

### **Technology Education (9 weeks - 6th & 7th Grade)**

The mission of technology education is to create a student-centered “hands-on/minds-on” environment that challenges and motivates students to apply tools and resources to solve real-world problems and become lifelong learners. Students will be exposed to the Smart Lab and the Materials & Process Lab as they explore the Technology Education curriculum. The students are asked to become independent learners and are expected, using their own interests and motivation, to create their own projects. In each environment there is no limit to what the student can learn or experience.

6th Grade - Students will be instructed through three different activities. Students begin with a community building project focused on how a community functions and what their responsibilities involve. We will then rules and guidelines for the classroom. Rotation one will focus how to use Power Point to create a presentation using animation and automation showing off what they will learn and experienced while in technology education. Activity 1 Students will focus on learning how to use Corel Draw to design, print, and transfer an image to a variety of projects which will then be created using a laser engraver, heat press, photo printer, vinyl cutter, etc. Activity 2 will focus on; digital movie editing from scratch. The will develop a movie from the ground up, exploring the complete process of video development. In the third activity, students will learn one of the following; digital photography; architectural design; computer animation; and computer gaming. The students will learn to use a variety of equipment like: Digital Cameras; scanners, vinyl sign cutting machines; poster printers; and a laser engraver.

7th Grade - One environment, called the SmartLab. In the other environment, called the Materials and Processing lab, students will focus on: Machine safety (Students will learn how to safely operate and apply machine tools to construct projects in an appropriate manor); drafting and fabrication of a crash test vehicle; a lamp or clock; and a CO2 dragster which will be raced in a tournament. The students will learn to use: band saws; drill presses; sanders; and a laser engraver. Students will be given an opportunity to design and build individual projects.

### **Investigations (9 weeks - 6th & 7th Grade)**

6th Grade - This course is designed to incorporate a hands-on (experiential) approach science class. 6th grade investigations will emphasize geography, life and physical sciences. First unit: Students will learn the processes necessary to engineering. This will be done by designing, building, testing, and eventually utilizing structures according to a goal. Examples of engineering projects can include: paper structures, mouse trap cars, trebuchets – catapults. Second unit: Students will be outside learning forestry. This unit will teach forest measuring techniques (tree height, tree diameter, and crown width), use of GPS tools, and uses of keys for identifying different species of trees.

7th Grade - In an effort to help students come to a closer understanding of the natural environment the focus of the seventh grade investigations course will be on outdoor exploration. During the course students will participate in a variety of outdoor recreation activities and ecological investigations. The course will emphasize the benefits of teamwork and the inquiry process to better understand of the natural world and to find solutions to situational problems posed to small groups.

## **Elective Class Descriptions**

---

### **Music - Band (36 weeks)**

Students have the opportunity to select band in the 6th grade where large group rehearsals meet every other day for 40 minutes. Band is an elective class in 7th and 8th grade that is offered every day. The bands perform in concerts at various times throughout the school year. Other opportunities for 7th and 8th grade students exist in Symphonic Band, Jazz Band, Brass Ensemble, Woodwind Choir, Brass Ensemble and Percussion Ensemble which meet outside the school day.

Topics: Band - A performance based class with emphasis on development of individual playing skills as well as group participation. A wide variety of musical styles will be covered. Students will receive a small group lesson once every eight school days.

### **Music - Choir (36 weeks)**

Students have the opportunity to select choir in the 6th grade where large group rehearsals meet every other day for 40 minutes. Choir is an elective class in 7th and 8th grade that is offered every day. The choirs perform in concerts at various times throughout the school year. Other opportunities for 6th, 7th, and 8th grade students exist in City Lights Choir, which meets outside the school day and serves as a community outreach choral group.

Topics: Choir - A performance-based class with an emphasis on quality choral singing (tone, intonation, rhythm, expression), quality listening (styles of choral & other literature), music reading, and choreography. Special attention is given to the voice change experienced in middle school years. A wide variety of musical styles will be covered.

### **Technology Education (36 weeks)**

This elective opportunity in 6th, 7th and 8th grade will focus on Science, Technology and Math applications (STEM). In 6th grade students will study air, ground and water transportation and build a model rocket, an experimental boat hull, and other hands-on projects. Students will be required to prepare a presentation of what they learned using Microsoft PowerPoint. In 7th & 8th grade students will be introduced to problem solving and the design process, leading them into a team competition using Legos to design and build a robot. Other areas explored will be video production, manufacturing, photography and to create a presentation of what they learned using Microsoft PowerPoint.

Note: Students will also be taking Technology Education in 6th and 7th grade as part of the required 9-week encore rotation.