

Grade 7

Overview

History lessons explore the dramatic shift in human consciousness from the concept of an earth-centered universe to that of a planetary system with the sun at its center.

Students study biographies of people who struggled with existing authorities and social institutions to bring about the changes that led to the birth of modern art and science in the Renaissance. They sail with explorers out of known lands into unknown.

Art and science flourish in the seventh grade classroom as they did in the Renaissance.

Students enter into perspective drawing and study the human body along with masters Leonardo, Michelangelo, and Raphael. Physiology lessons cover digestion, circulation, respiration, and reproduction. Discussions on topics of nutrition and hygiene raise students' awareness to the benefits of positive body image and healthy life style.

In astronomy main lessons, students examine the solar system, learn to recognize constellations, and study star development from nebulae to black holes. First classes in chemistry examine combustion. Students see the transformation of substance and notice the remaining ash. In experiments, phenomena are presented, apparatus introduced, and precautionary procedures followed.

Seventh grade physics classes may cover a number of topics. Studies in acoustics and optics may be continued from grade six, electricity and magnetism introduced. The main theme in seventh grade physics, however, is the study of mechanics. As seventh graders experience gravity in their own bodies they learn that it can be manipulated to get work done. They examine simple machines such as the lever, pulley, wheel and axle, and inclined plane. They see how the principles working in these mechanical devices also work in the human body.

In mathematics, students are introduced to negative numbers and algebraic expressions and they balance equations. The study of geometry continues with parallel lines, angles, similar figures, and area.

As seventh graders become increasingly aware of the life of feeling stirring within them, they become more capable of describing it in writing. It may appear in assignments that allow for an imaginative participation in historical events or in a main lesson block devoted to creative writing. Students are also challenged to write accurate descriptions of what they observe without the tint of their attachment to the topic. English classes focus on essay writing, creative writing, grammar, and research skills.

Daily life in the seventh grade has its moments of turbulence and discovery. As students assert their independence, they look for examples of earnest striving in the adults around them. Teachers guide seventh graders toward the recognition of their own talents and capacities

Work Habits and Attitude:

- Assume responsibility for self and work
- Maintain an organized assignment planner and complete homework assignments in timely fashion
- Work independently and quietly with focus on a task for up to 45 minutes
- Work collaboratively and do fair share of the task
- Work independently and collaboratively with minimum adult intervention
- Work neatly with desire to do best work
- Respect teachers, classmates, property, and materials
- Keep personal and school belongings well organized
- Have appropriate materials needed for class
- Be prepared and ready for class on time
- Maintain a positive attitude
- Work constructively with feedback from teachers and classmates
- Support classmates and the group
- Practice social inclusion and be included in social activities
- Use group process and discussion to work through social issues and class projects
- Participate in class discussion
- Participate in choral recitation and singing

Language Arts

In grade seven, students should be able to:

- Show acquisition of verbally presented material through artistic rendering, daily recall, self-generated reports and essays written for main lesson books
- Recite poetry, read prose both individually and in group
- Speak clearly with good diction, proper inflection, fluency
- Develop confidence to stand before classmates in oral presentation of reports
- Read for information
- Read for sustained length of time, with good comprehension and recall
- Generate writing that reflects sequential organization, organized ideas, and complete thoughts with appropriate syntax
- Use capitalization, punctuation, and parts of speech correctly
- Use active/passive voice
- Use subordinate clauses
- Write compositions in expository, narrative, and descriptive styles
- Use dictionary and thesaurus on regular basis
- Take dictation with ease, use spelling rules, sight vocabulary and phonetics to spell unknown words
- Continue sentence diagramming
- Develop appreciation for poetry through reading and writing
- Express contrasting moods
- Use subjunctive mood (might be introduced in grade six)
- Correctly identify and use objective and subjective tone

- **Generate research projects: use library, note-taking skills, outlines, writing and editing to arrive at final draft**
- **Practice note-taking**
- **Summarize main lesson content in writing for main lesson books**
- **Demonstrate reading-for-information skills in research projects, class discussion, and mastery of material**
 - **Acquire appreciation for the English language through reading a variety of literature in different artistic styles**
- **Read aloud with expression, fluency**
- **Recall what was read in discussion, book reports, and summaries**
 - **Use basic keyboarding skills to type papers**
 - **Use library and internet resources for research: books, digital catalogue, and online databases**
- **Summarize larger works in students' own words**
- **Write a research paper with appropriate citations and bibliography**
- **Write stories that build to a climax and resolve the plot, using both first and third person narrative, with focus on detail and description**
- **Understand and use analogies**
- **Understand and use vocabulary and etymology with focus on Latin and Greek roots**
 - **Write literary analysis essays on reading material (stories, books, and poetry) identifying and discussing mood, tone, and characterization, and types of conflict**
- **Identify metaphor and simile as well as use in their own poetry**
 - **Use punctuation correctly, including serial commas, colons, and semi-colons**
 - **Recognize and use iambic pentameter**
- **Be able to analyze as well as write villanelles and sonnets**
 - **Perform in class plays**

Mathematics:

By the end of grade seven, students should demonstrate proficiency in the following areas:

- **Number sense with more challenging numbers (puzzles, patterns, etc.)**
- **Measurement conversions: U.S. and metric systems**
 - **Continue work with percentage: basic problems, percent increase/decrease, simple and compound interest, word problems**
 - **Continue business math skills**
 - **Continue word problems with applications**
- **Ratio and proportion: set up ratio problem, find the total, similar figures, rate problems**
 - **Students recognize more complex number patterns, discuss and understand alternate solutions to a problem, and work independently with a partner or in small group**

- Familiarity with rate problems
 - Test-taking skills, test preparation, and self-correction

- Algebra:

- o Positive and negative numbers
- o Using four processes on positive and negative numbers
- o Equations: the golden rule
- o Translation of verbal expressions into algebraic expressions
 - order of operations
 - combining like terms
 - powers and roots of numbers

- Geometry:

- o Area and perimeter of parallelograms, trapezoids, non-right triangles, circles, etc.
- o Angle theorems: arising when two parallel lines are cut by a transversal, angles in a triangle
- o Pythagorean Theorem: visual proofs, calculation of missing sides of triangles

Science:

In grade seven, students should achieve a working knowledge of the following:

- Physics

- o Basic Acoustics: ratio for tones of the scale
- o Optics: reflection/refraction
- o Simple machines: lever, pulley, wheel, inclined plane, wedge and screw

- Inorganic chemistry

- o Chemistry of a candle
- o Combustion: as observed in the burning of a variety of materials
- o Role of oxygen and carbon dioxide in human, plant, and animal bodies o Properties of acids and bases, salts
- o Indicators
- o Lime cycle

- Physiology

- o Respiration, digestion-nutrition, heart-circulation, reproduction
- o Habits that support good health

- Astronomy

- o Solar system and sun

- o Planets
- o Biography of a star
- o Lunar cycles
- o Cosmic phenomena
- o Recognition of constellations
- o Seasons of the year (earth in relation to sun)
- o Historical perspectives on the universe

History

In grade seven, students achieve working knowledge of the following:

- Age of Exploration: Marco Polo, Columbus, Magellan (or others at teacher's discretion)
 - The Renaissance period in northern and southern Europe, including notable personalities of the time in politics, art, and science
 - The Reformation, including biographies of leading historical figures

- Geography

In grade seven, students should:

- Understand geographical regions of the world/contrasts in landscape and climate
- Understand latitude and longitude, relationship of longitude to time
 - Explore geography of South America (or Europe, whichever was not covered in 6th grade), physical and political boundaries, capitals, cultures, and livelihood of peoples