

Middle School

Grade 6

Language Arts/Reading

Prerequisites:

Before entering 6th grade, students should be able to

- Read alone for a sustained period of time.
- Use a variety of strategies to read words and figure out what they mean.
- Read and understand grade-level materials with fluency.
- Gather, locate, and present important information using various reference sources and technology.
- Write fluently and legibly, in both cursive and manuscript, for various purposes.
- Use the writing process to create a variety of products that apply standard spelling, punctuation, grammar, and usage with increasing accuracy.
- Produce well-developed written products in a variety of formats, including informative reports and persuasive and narrative writing.
- Listen to, evaluate, and assess oral information.

Competencies:

During 6th grade, students will

- Listen and speak for a variety of purposes and audiences, adjusting content and delivery to fit.
- Use word recognition/definition strategies to learn new words found in their reading of fiction and nonfiction.
- Read to develop higher-level thinking skills by using a variety of strategies to comprehend when reading.
- Recognize the unique features of various kinds of literature and other reading materials.
- Respond to, apply, and evaluate various types of literary devices.
- Read about, describe, compare/contrast, and talk about themes and connections within and across cultures and texts.

- Use all stages of the writing process (prewriting, drafting, revising, proofreading, and editing) to compose for a variety of purposes (to inform, to influence, to entertain) and audiences.
- Use revision and editing strategies to produce a clear, well-developed, error-free final product.
- Use research skills to formulate questions, to summarize and organize information, and to create graphic organizers.
- Use correct grammar in speaking and writing.
- Use several media (including technology) to interpret, analyze, and produce visual images and messages.

Outside of School:

As parents, you can provide opportunities for your 6th grader to

- Read aloud with you on a regular basis.
- Observe and talk about your real-life applications of reading and writing.
- Read from an ample supply of magazines, newspapers, and books.
- Visit the library and bookstores.
- Communicate in writing (letters, thank-you notes, to-do lists, etc.).
- Keep a journal or personal diary.
- Talk about the plots of movies and TV shows to enhance the sense of story.
- Use television program listings for examples of summaries.
- Use news headlines for examples of main idea.

Mathematics

Prerequisites:

Before entering 6th grade, students should be able to

- Know and instantly recall all basic facts: addition, subtraction, multiplication, and division.
- Read, write, compare, and order whole numbers to the hundred-billions place.
- Read, write, compare, and order decimals to the thousandths place.
- Explain the concept of a fraction.
- Make equivalent fractions.

- Show where fractions go on a number line.
- Add and subtract fractions with the same denominators in a problem-solving situation.
- Add, subtract, multiply, and divide all whole numbers.
- Add and subtract decimals.
- Choose from among addition, subtraction, multiplication, and division to solve word problems with whole numbers.
- Identify prime factors of whole numbers and common factors of groups of numbers.
- Round to the nearest tenth and to the nearest whole number.
- Identify types of angles: right, acute, and obtuse.
- Distinguish from among these transformations: rotation (“turn”), translation (“slide”), and reflection (“flip”).
- Recognize and draw lines of symmetry.
- Identify parallel and perpendicular lines and congruent parts of geometric shapes and solids.
- List features that define geometric shapes and solids.
- Measure objects with a ruler.
- Find perimeter by counting units of length.
- Figure out the area of a square or rectangle by counting square units.
- Figure out volume by using cubes to build a solid figure.
- Make bar, line, and picture graphs.
- Identify, explain, and use problem-solving strategies.
- Figure out the probability of simple events (examples: flipping a coin, rolling a die).
- Use objects to show understanding of addition and subtraction of fractions.
- Add and subtract fractions with unlike denominators, using regrouping.
- Solve problems using addition and subtraction of decimals.
- Use multiplication to find equivalent ratios.
- Use division to calculate rates.
- Estimate solutions to real-life problems involving fractions, decimals, and whole numbers.
- Create proportions in a problem-solving situation.
- Match ratios, percents, fractions, and decimals.
- Create tables to represent data.
- Use tables to develop formulas for perimeter, area, and volume.
- Simplify expressions using the proper order of operations.
- Measure and draw angles using a protractor and classify them as acute, obtuse, or right.
- Identify and analyze the features of quadrilaterals and triangles.
- Identify parts of a circle and understand their relationships (example: $2 \text{ radii} = 1 \text{ diameter}$).
- Calculate circumference.
- Plot points on a graph and record coordinates of a given point (using positive numbers only).
- Estimate units of length, weight, and volume.
- Calculate perimeter and area of squares, parallelograms, rectangles, and triangles.
- Convert measurements within the system of customary units.
- Convert measurements within the metric system.
- Arrange data into lists, tables, and tree diagrams to represent combinations resulting from experiments (example: rolling a die, spinning a spinner, flipping a coin, etc.).
- Determine simple probability and its complement.
- Collect, organize, display, and interpret data using various kinds of graphs.
- Determine the mean of a set of data using models.
- Determine median, mode, and range.
- Sketch circle graphs.

Competencies:

During 6th grade, students will

- Compare and order fractions and decimals.
- Make fraction, decimal, and whole-number equivalencies, and show how they relate.
- Change mixed numbers to improper fractions and vice versa.
- Read, write, and compare integers on a number line, and use them to represent real-life situations.
- Write the prime factors of a number, using exponents.
- List common factors and common multiples for a set of numbers.
- Identify prime and composite numbers.

Outside of School:***As parents, you can provide opportunities for your 6th grader to***

- Find practical applications of math concepts.
- Explain his or her thinking or processes for problem solving (ideas, steps in a process, and memory-aids).
- Practice doing things in sequence (reading maps, following recipes, assembling products).
- See you using math in daily living (estimation, shopping, budgeting, checking, measuring, applications at work, etc.).
- Review and practice basic facts.

Science***Prerequisites:******Before entering 6th grade, students should be able to***

- Conduct investigations.
- Collect and analyze data using metric units.
- Interpret and label graphs.
- Classify matter according to its physical properties.
- Identify the significance of the rock cycle, and explain how forces change the earth over time.
- Explain the advantages and disadvantages of using various forms of energy.
- Determine the characteristics and adaptations that help plants and animals survive.
- Understand and identify parts of a system and their interdependent relationships.
- Use effective communication skills in speaking, listening, reading, and writing appropriate responses.

Competencies:***During 6th grade, students will***

- Conduct safe field and laboratory investigations using scientific methods to solve problems.
- Choose and use a variety of tools to conduct scientific investigations.
- Explain the interactions that occur between matter and energy.
- Research and describe how obtaining, transforming, and distributing energy affects the environment.

- Recognize the relationships between force and motion.
- Construct and label bar and line graphs.
- Design experiments using control, manipulated, and responding variables.
- Recognize the interactions of systems and their parts (Earth science systems may include ecosystems, weather, plate tectonics, and the water cycle.).
- Investigate the relationship between structure and function in living systems (cell parts).
- Identify substances by their physical and chemical properties.
- Recognize that traits of species can change through generations and that the instructions for traits are contained in genetic material.
- Describe the components of the solar system and equipment needed for space travel.

Outside of School:***As parents, you can provide opportunities for your 6th grader to***

- Develop time-management and organizational strategies.
- Visit science-oriented exhibits at NASA, museums, etc.
- Discuss current science and technology events in the news.
- Read and interpret graphs and charts in the newspaper.
- Attend science activities offered through summer school programs, scouts, YMCA, community colleges, museums, etc.
- Read scientific publications such as *Popular Science*, *Ranger Rick*, *National Geographic World*, etc.
- Watch the Discovery Channel, PBS, and nature and science programs on television.
- Investigate science-oriented Web sites.

**Social Studies:
World Cultures*****Prerequisites:******Before entering 6th grade, students should be able to***

- Read and interpret a variety of graphic organizers (tables, timelines, flow charts).

- Make oral presentations about social studies information to a group.
- Locate and use a variety of sources when doing research.
- Demonstrate basic geographic knowledge such as the seven continents and five oceans.
- Read and interpret maps.
- Read and comprehend on grade level.
- Write a complete sentence using standard grammar, spelling, and punctuation.
- Listen and follow directions.
- Demonstrate organizational skills.

Competencies:

During 6th grade, students will

- Analyze characteristics of various contemporary cultures and societies.
- Explain how changes in technology, communication, and transportation have influenced societies of select regions of the world.
- Identify and analyze ways people have adapted to and modified the physical environment.
- Describe the nature of citizenship in various societies.
- Compare/contrast different ways of organizing economic and governmental systems.
- Continue to practice reading skills appropriate to the grade-level, such as locating the main idea, sequencing, comparing/contrasting, etc.
- Write for a variety of audiences and purposes, using on-level standard grammar, spelling, sentence structure, and punctuation.
- Use social studies terminology correctly.
- Use critical-thinking skills appropriate to the content and grade level, including problem-solving and decision-making skills.
- Analyze information by comparing and contrasting.
- Transfer information from statistical to written or visual forms (using computer software as appropriate).
- Demonstrate basic computer proficiency.
- Use main and supporting ideas in oral and written communication.
- Identify different points of view about an issue or topic.

- Locate and use a variety of primary and secondary sources to create oral, written, and visual presentations on social studies topics.
- Continue to practice reading and interpreting a variety of graphic organizers (examples: tables, timelines, flow charts).

Outside of School:

As parents, you can provide opportunities for your 6th grader to

- Watch the news, read newspapers, and discuss current issues and events with you.
- Visit historical Web sites such as virtual tours of museums, libraries, and historical sites.
- Watch the weathercast, and discuss the impact of climate and weather in the regions of the world.
- Observe appropriate civic responsibilities, such as voting, writing letters to the editor, completing jury duty, and having civic pride.
- View history-oriented television programs, and discuss them with you.
- Interview various family members about their life experiences and family history.
- Visit historical sites, and attend cultural activities in your area to understand cultural diversity.
- Use social studies software on your home computer.
- Read historical and cultural novels and biographies.

Grade 7

Language Arts/Reading

Prerequisites:

Before entering 7th grade, students should be able to

- Use additional word-recognition strategies such as language structure and context clues.
- Read and understand a variety of grade-level materials with fluency.
- Use the writing process to create a variety of products that apply standard punctuation, spelling, grammar and usage with increasing accuracy.