

# Guide to Student Learning in Sixth Grade



*The student learning guide provides valuable information on what students learn in sixth grade.  
Use this information to support and reinforce learning at home.*

At intermediate schools, all students will strengthen essential literacy and math skills through integrated learning experiences. The intermediate-school program provides a learning experience that encompasses all aspects of a comprehensive literacy community and prepares students for independent application of literacy skills and content understandings at the secondary level.

Classroom instruction is shaped by the guiding principle that all students are strategic readers, thinkers, and writers. Literacy skills are explicitly taught during English Language Arts instruction, and embedded within content instruction. This reinforcement model provides meaningful and consistent opportunities for the application of targeted literacy skills.

Information and Communication Technology (ICT) instruction is embedded into all content areas. The district provides each student with a device to introduce students to the use of technology tools for communication, collaboration, creativity, and critical thinking.

---

## English Language Arts (ELA)

In grade six, students apply skills they learned in earlier grades to make sense of longer, more complex text. Students will continue to develop their reading, writing, listening, and speaking skills through a balanced-literacy approach that includes instruction focused on modeled, shared, guided, and independent reading and writing experiences. In addition, literacy skills will be integrated into science, social studies, and health instruction. Students will have ample opportunities to read and write in order to better understand grade-level content. Students compare text at deep levels and are able to synthesize main ideas and themes.

**READING:** Students in grade six will reinforce and build upon their advanced reading skills as they interpret, synthesize, and analyze text. A variety of texts and genres will continue to be used, including fiction, informational text, online resources, and poetry. Students will closely analyze the difference between a text summary and an interpretation of a text and will use these skills frequently as they explore text at a more advanced level. Foundational skills will continue to be built upon, including the study of Greek and Latin roots, conventions, and the use of unknown/multiple meaning words.

**WRITING:** Students will use the writing process to write for different purposes and audiences in a variety of genres including narrative, informational, and opinion. They will have opportunities to expand their writing and will apply their skills to refining technique including pacing, dialogue, and description in fictional works. In addition, they will become proficient in writing arguments and supporting informational claims.

**SPEAKING AND LISTENING:** Students will understand that being competent in speaking and listening will allow them to take advantage of new opportunities for communication. Students will listen and speak to understand, interact socially, extend discussion, and discuss content.

---

# Mathematics

In sixth grade, instructional time is focused on four critical areas that will enable students to:

## **Connect ratio and rate to whole number multiplication and division and use concepts of ratio and rate to solve problems**

- Students use reasoning about multiplication and division to solve ratio and rate problems about quantities.
- Students connect their knowledge of fractions to the concepts of ratios.
- Students solve a wide variety of problems involving ratios and rates.

## **Deepen their understanding of the division of fractions and extending the notion of number to the system of rational numbers, which includes negative numbers**

- Students use the meaning of fractions, the meanings of multiplication and division, and the relationship between multiplication and division to understand and explain why the procedures for dividing fractions make sense.
- Students extend their previous understandings of number and the ordering of numbers to the full system of rational numbers, which includes negative integers.
- Students reason about the order and absolute value of rational numbers and about the location of points in all four quadrants of the coordinate plane.

## **Write, interpret, and use expressions and equations**

- Students understand the use of variables in mathematical expressions.
- Students write expressions and equations that correspond to given situations, evaluate expressions, and use expressions and formulas to solve problems.
- Students understand that expressions in different forms can be equivalent, and they use the properties of operations to rewrite expressions in equivalent forms.
- Students learn that the solutions of an equation are the values of the variables that make the equation true.
- Students use properties of operations and the idea of maintaining the equality of both sides of an equation to solve simple one-step equations.
- Students construct and analyze tables, such as tables of quantities that are in equivalent ratios, and they use equations (such as  $3x = y$ ) to describe relationships between quantities.

## **Develop an understanding of statistical thinking**

- Students recognize that a data distribution may not have a definite center and that different ways to measure center yield different values.
- Students learn that the median measures center in the sense that it is roughly the middle value.
- Students learn that the mean measures center in the sense that it is the value that each data point would take on if the total of the data values were redistributed equally, and also in the sense that it is a balance point.
- Students learn that statistics can be used to gain information about a population by examining a sample of the population. Samples that are representative of the population can be used to make generalizations about the whole population.
- Students will begin to investigate chance processes and develop, use and evaluate probability models.
- Students learn to describe and summarize numerical data sets, identifying clusters, peaks, gaps, and symmetry, considering the context in which the data were collected.

---

## Science

In sixth grade, science instruction relies heavily on the use of technology to assist students in making connections with the content presented to them. Students will continue to develop their interdisciplinary problem-solving skills as they further solidify their knowledge and understanding of the relationships and common themes that connect science, mathematics, technology, and literacy. Students will participate in a variety of hands-on activities to deepen their understanding of the following scientific **core ideas**:

### **Waves and Electromagnetic Radiation**

- Modeling the different properties used to describe waves
- Exploring how waves travel through various materials
- Comparing the reliability of digital and analog signals

### **Energy**

- Exploring the factors that impact the kinetic and potential energy of an object
- Designing a device to limit the amount of thermal energy transferred between objects
- Comparing the design and uses of series and parallel electrical circuits

### **Structure and Properties of Matter**

- Modeling the atomic composition of various materials
- Identifying unknown substances based on their densities
- Designing a method to separate a complex physical mixture

### **Structure, Function, and Information Processing**

- Describing the structure and function of small components of larger organisms
- Exploring the structure and function of various cell organelles
- Connecting cellular structure and function to tissue, organs, and body systems

### **Human Impact (*The Intermediate ISTE Capstone Unit*)**

- Investigating the various natural resources humans consume
- Designing a solution to a problem caused by humans interacting with their environment
- Communicating the solution to an audience using a technology-enhanced platform

### **Matter and Energy in Ecosystems**

- Recording and analyzing the transfer of energy as it flows through natural systems
- Recording and analyzing the transfer of matter as it flows through natural systems

**The crosscutting concepts** of pattern, cause and effect, scale/proportion/quantity, energy and matter, structure and function, interdependence, and stability and change are identified as organizing concepts for the core ideas listed above. The sixth-grade performance expectations rely heavily on students' abilities to utilize grade-appropriate **science and engineering practices**, such as asking questions and defining problems, using mathematical and computational thinking, engaging in arguments from evidence, developing and using models, planning and carrying out investigations, analyzing and interpreting data, and obtaining, evaluating, and communicating information. Students are expected to use these practices to demonstrate their understanding of the core ideas listed above.

---

## Social Studies

Grade six Social Studies is based on the world history of the Eastern Hemisphere. Students will learn about the development of cultures, civilizations, and empires of the Eastern Hemisphere (Europe, Asia, Africa and Australia). Students will investigate interactions between societies, and the comparison of trends in government and economics of nations of the Eastern Hemisphere. The course begins with an examination of the Eastern Hemisphere today, using geographic skills. This provides the foundation for making connections between the past and the present throughout the course.

Unit topics for 6<sup>th</sup> grade social studies include:

- The Neolithic Revolution
- Early river valley civilizations
- Classical civilizations Greece and Rome
- Feudalism and Medieval Times
- World religions and belief systems
- Interactions across the Eastern Hemisphere
- Trade networks and cultural diffusion

---

## Health

In sixth grade, the health curriculum will reinforce with students the importance of healthy behaviors.

There are four units of study.

- Respecting Myself & Others (Violence Prevention Strand, and core elements of Mental Health)
- My Immune System (HIV/AIDS)
- My Family, My Self (Family Life & Sexual Health)
- Tobacco, Alcohol & Other Drugs

Students also will continue to be encouraged to demonstrate effective communication and identify the people or systems they should turn to for support during emotional or physically harmful situations.

Helping students learn to respect themselves and to respect others is an important component of health education at all grade levels.

---

## Physical Education

During physical education class in sixth grade, students will participate in physical activities to improve cardio-respiratory endurance, flexibility, muscular strength, endurance, and body composition. Students will engage in:

- |                  |                          |                          |
|------------------|--------------------------|--------------------------|
| • Fitness        | • Floor Hockey           | • Track & Field          |
| • Football       | • Recreational Games     | • Whiffle Ball/Softball  |
| • Movement Games | • Bowling                | • Basketball             |
| • Soccer         | • Lacrosse               | • Team Handball          |
| • Orienteering   | • Educational Gymnastics | • Wrestling/Self Defense |

It is important for children to develop regular exercise habits and activities at an early age that will be continued throughout their lives. In order for your child to become truly fit, these activities need to continue beyond the school day.

---

## **Music**

Sixth-grade music develops students' identity as a musician. By this grade, they are able to do many things with music - create, perform, respond, and connect at many levels. They are able to synthesize the content and skills and select their preferred mode of experience. They continue to build skills with reading and writing notation, analyzing compositions and performances, and expand the repertoire of music in their experience. Students in sixth grade music will continue to sing, play instruments, and move to music. They will continue to develop their music literacy skills and grow as independent music makers. They will design performance opportunities and consider the audience experience from the perspective of the performer and audience. They may even assume some of the roles traditionally performed by their adult music guides.

---

## **Art**

Sixth-grade art develops students' sense of self as they are encouraged to take risks and make artistic choices in their creation of art. They are encouraged to analyze and interpret works of art and to form opinions about the work based on their own criteria. A sound foundation in drawing skills is developed as students enter the stage of dawning realism, working to develop a skill set that enables them to render realistic images. Students learn the importance of craftsmanship, setting personal goals, and are able to complete more in-depth projects. Students in this grade visit the Memorial Art Gallery, providing them with a unique opportunity to explore its reflection of the history and values of the community. Students will build on this experience to design a plan for displaying works of art in a display space for their own work.

---

## **Performing Arts**

Sixth-grade students may elect to participate in chorus, band, or orchestra. Chorus students may also participate in either band or orchestra. Students in band and orchestra will attend one lesson each week, in addition to their regularly scheduled ensemble rehearsals. Students in performing ensembles will learn how to apply the music elements to increasingly difficult levels of music and will be required to participate in at least two concerts each year.