



## Seventh Grade Curriculum Overview

### English Language Arts – Grade 7

In seventh grade, students will acquire skills and abilities in six domains of English Language Arts:

#### Reading Literature

- Identify and cite evidence from text to support analysis about
- Themes, central ideas, conflicts, plot development, as well as character
- Motivations and change over time
- Write an objective summary of a text
- Understand the similarities and differences between literary genres: narrative fiction, historical fiction, fantasy, poetry, literary nonfiction, etc.
- Analyze how an author develops and contrasts the points of view of
- Different characters and narrators in a text
- Compare and contrast a written story, drama, or poem to its audio, filmed, staged, or multimedia version analyzing the effect of techniques
- Interpret a literary work by analyzing how the author uses literary elements (e.g., mood, tone, point of view, personification, symbolism)
- Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history.
- Read and comprehend literature, stories, drama and poetry in the range of complexity from grades six to eight

#### Reading Informational Text

- Determine the central idea of a text and use textual evidence to determine an author's purpose and point of view in a text
- Analyze how two or more authors writing about the same topic shape their presentations of key information by emphasizing different evidence or advancing different interpretations of facts
- Determine and evaluate the argument in a text and provide evidence and reasoning that support a specific claim
- Develop content specific vocabulary using the context to determine the technical as well as connotative and figurative meaning
- Read and comprehend complex text in the grades 6-8 text band

#### Writing

- In school and at home, write routinely to respond to reading and to develop ideas, fluency, stamina, volume of writing, independence, and a love of writing
- Write across a variety of text types using the form and conventions of the genre: (i.e., opinion/argument, informational, narrative: personal, imaginative, historical, and traditional, as well as poetry, speeches, and scripts
- Write arguments that include claims supported with relevant evidence and clear reasoning
- Demonstrate an understanding of mood, tone, point of view, personification, and symbolism in written pieces
- Approach writing as a process that includes planning, drafting, revising, conferring with others for feedback, revising and editing for final copy
- Produce clear and coherent writing pieces for a variety of purposes and audiences

### **Research and Expository Writing**

- Conduct short research projects to answer an inquiry question, gathering relevant information from multiple print and digital resources
- Generate additional focused questions to deepen research and investigation
- Introduce and develop a topic selecting relevant facts, definitions and concrete details using precise language and content specific vocabulary classification, cause and effect, and compare and contrast strategies
- Use graphics, formatting and multimedia to present topic

### **Language**

- Develop and use literary, academic, and content-specific vocabulary
- Understand word and phrase meanings using a range of strategies and tools (i.e. context, Greek and Latin affixes and roots, figurative language, reference tools)
- Use knowledge of standard English grammar, usage, and spelling appropriate to Grade 6 when speaking writing, reading or listening

### **Speaking and Listening**

- Engage effectively in a range of collaborative discussions by coming to discussions prepared, posing and responding to specific questions, and demonstrating an understanding of different perspectives, learning to build on others' ideas and expressing their own clearly
- Weigh new ideas and decide whether or not to modify one's views when new information is presented
- Present claims and findings in a logical sequence to a variety of audiences using effective presentation techniques and multimedia tools

## **Mathematics – Grade 7**

In seventh grade, students will acquire skills and abilities in six mathematics domains:

### **Mathematical Practices**

- Make sense of problems and persevere in solving them
- Reason abstractly and quantitatively
- Construct viable arguments and critique the reasoning of others
- Model with mathematics
- Use appropriate tools strategically
- Attend to precision
- Look for and make use of structure
- Look for and express regularity in repeated reasoning.

### **Ratios and Proportional Relationships**

- Compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units
- Recognize and represent proportional relationships between quantities
- Use proportional relationships to solve multi-step ratio and percent problems.

### **The Number System**

- Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram
- Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers

- Solve real-world and mathematical problems involving the four operations with rational numbers
- Compare, order, estimate, and translate among integers, fractions and mixed numbers (i.e., rational numbers), decimals, and percent.

### **Expressions and Equations**

- Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients
- Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically
- Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.

### **Geometry**

- Solve problems involving scale drawings of geometric figures, such as computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale
- Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids
- Know the formulas for the area and circumference of a circle and solve problems; give an informal derivation of the relationship between the circumference and area of a circle
- Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and use them to solve simple equations for an unknown angle in a figure
- Solve real-world and mathematical problems involving area, volume, and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

### **Statistics and Probability**

- Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population; understand that random sampling tends to produce representative samples and support valid inferences
- Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations
- Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring
- Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation

## **Science – Grade 7**

In seventh grade, students acquire the skills and abilities in the six domains of Science and Engineering to:

### **Science and Engineering Practices:**

- Ask questions (for science) and define problems (for engineering)
- Develop and use models
- Plan and carry out investigations
- Analyze and interpret data
- Use mathematics and computational thinking
- Construct explanations (for science) and design solutions (for engineering)
- Engage in argument from evidence
- Obtain, evaluate, and communicate information

### **Nature of Science and Crosscutting Concepts**

- Recognize that scientific knowledge results from the efforts of men and women from different races, cultures, and time periods.

- Apply scientific thinking to science and to their lives.
- Recognize science disciplines share common rules of obtaining and evaluating empirical evidence and depend on evaluating proposed explanations for revision and improvement in light of new evidence.
- Apply logical and conceptual connections between evidence and explanations as criteria in distinguishing between science and non-science.
- Science investigations use a variety of methods and tools to make measurements and observations guided by a set of values to ensure accuracy of measurements, observations, and objectivity of findings.
- Scientific knowledge is constrained by human capacity, technology, and materials.

### **Earth and Space Science**

- Construct an explanation based on evidence for how Earth’s surface has changed over scales that range from local to global in size.
- Develop a model to explain how the energy of the Sun and Earth’s gravity drive the cycling of water, including changes of state, as it moves through multiple pathways in Earth’s hydrosphere.
- Obtain and communicate information on how data from past geologic events are analyzed for patterns and used to forecast the location and likelihood of future catastrophic events.

### **Life Science**

- Construct an explanation based on evidence for how characteristic animal behaviors and specialized plant structures increase the probability of successful reproduction of animals and plants.
- Analyze and interpret data to provide evidence for the effects of periods of abundant and scarce resources on the growth of organisms and the size of populations in an ecosystem.
- Describe how consistent patterns of interactions in terms of relationships among and between organisms in an ecosystem can be competitive, predatory, parasitic, and mutually beneficial and that these interactions are found across multiple ecosystems.
- Apply the particulate model of matter and develop a model to describe that matter and energy are transferred among living and nonliving parts of an ecosystem and that both matter and energy are conserved through these processes. (The role of photosynthesis, cellular respiration, and decomposition, as well as transfer among producers, consumers (primary, secondary, and tertiary), and decomposers.)
- Analyze data to provide evidence that disruptions (natural or human-made) to any physical or biological component of an ecosystem can lead to shifts in all its populations.
- Evaluate competing design solutions for protecting an ecosystem. Discuss benefits and limitations of each design solutions.
- Explain how changes to the biodiversity of an ecosystem—the variety of species found in the ecosystem—may limit the availability of resources humans use.

### **Physical Science**

- Analyze data to describe the effect of distance and magnitude of electric charge on the strength of electric forces.
- Apply scientific evidence to argue that fields exist between objects with mass, between magnetic objects, and between electrically charged objects that exert force on each other even though the objects are not in contact.
- Construct and interpret data and graphs to describe the relationships among kinetic energy, mass, and speed of an object.
- Develop a model to describe the relationship between the relative positions of objects interacting at a distance and their relative potential energy in the system. (Examples of objects within systems interacting at varying distances could include Earth and either a roller coaster cart at varying positions on a hill or objects at varying heights on shelves, changing the direction/orientation of a magnet, and a balloon with static electrical charge being brought closer to a stream of water.)
- Apply scientific principles of energy and heat transfer to design, construct, and test a device to minimize or maximize thermal energy transfer.

- Conduct an investigation to determine the relationships among the energy transferred, how well the type of matter retains or radiates heat, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.
- Generate and apply evidence to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.
- Develop and use a model to explain how thermal energy is transferred out of hotter regions or objects and into colder ones by convection, conduction, and radiation.
- Use informational text to describe the relationship between kinetic and potential energy and illustrate conversions from one form to another.

### **Technology Engineering**

- Construct an argument supported by evidence that human activities and technologies can mitigate the impact of increases in human population and per capita consumption of natural resources on the environment.

## History and Social Science – Grade 7

In seventh grade, students will

- Recognize the ideals commonly attributed to the United States and be able to relate these ideals to their everyday lives
- Recognize and use the vocabulary of history and the social sciences
- Study issues from multiple perspectives
- Develop study skills needed for independent research and reporting
- Create and interpret time lines to understand events over time
- Create and read maps to trace geographic, political, social, and economic development of select ancient societies
- Identify key geographic features connected with select ancient societies
- Identify different forms of government (democracy, oligarchy, etc.,) and compare Roman and Greek governments to that of the United States
- Explain how governing systems in ancient societies maintained order and achieved societal goals
- Describe how the value and belief systems of select ancient societies were reflected in every aspect of life including the social organization, architecture, arts, literature and science
- Understand that the beliefs and actions of individuals and groups in history affect the outcome of history
- Identify key individuals in ancient societies who changed the course of thought and history, e.g., Alexander, Caesar
- Analyze the changes in society as a result of technological and scientific developments
- Understand the socioeconomic stratification of ancient societies and its implications on the people's lives, particularly in Rome
- Explain the legacies of Greek and Roman art, architecture, literature etc., on contemporary life in the United States.

## World Languages – Grade 7

In seventh grade, students will

- Use the skills of listening, speaking, reading and writing in the target language to greet and respond to greetings; introduce and respond to introductions; ask and answer questions; make and respond to requests; exchange information and knowledge; express likes and dislikes; describe people, places, and things; present information in a brief report; and express needs and emotions
- Participate in classroom practices used in the target culture
- Recognize distinctive cultural aspects of the target culture presented in stories, dramas, films, and photographs
- Participate in games, storytelling, celebrations and dramatizations
- Identify linguistic characteristics of the target language and compare and contrast them with English linguistic characteristics
- Describe some cultural beliefs and perspectives relating to family, school, and play in both target culture and our own
- Identify and discuss cultural characteristics of the target culture and compare and contrast them to cultural characteristics of our culture
- Obtain information and knowledge related to other disciplines from sources in the target language
- Apply knowledge of the target language and culture beyond the classroom setting

## Educational Technology – Grades 6 - 8

In middle school, students will acquire skills and abilities in two domains of educational technology:

### **Instructional Technology**

- Communicate using a variety of media and formats
- Locate, evaluate, analyze, and use information
- Compile, organize, analyze, and synthesize information
- Draw conclusions and make generalizations based on information gathered
- Collaborate and cooperate in team efforts
- Communicate locally and globally
- Problem-solve, self-direct learning, and extend learning activities
- Use information and select appropriate tools to solve problems
- Interact with others in ethical and appropriate ways

### **Library Media**

- Acquire information problem solving skills
- Appreciate literature, fiction and non-fiction, and its ability to reflect on our lives and our place in the world
- Acquire increasingly sophisticated information accessing, evaluating, and synthesizing skills from library resources- including electronic resources, and the Internet.

## Music Grades 6 – 8

In middle school, students will

- Understand the basic tools of musical composition
- Differentiate between styles, moods, and textures of music
- Compose and perform musical compositions
- Differentiate between music of different musical periods
- Listen to music from other cultures
- Identify common elements of music that transcend historical styles and cultures
- Research a music style or composer and gives a class presentation
- Listen to different styles of music by various performers and composers
- Understand and recognize basic music theory such as time signature, note values, clefs and staff
- Know basic music literacy (note reading skills).

In addition, middle school students may elect to participate in band, orchestra, and/or chorus.

## Art Grades 6 – 8

In middle school, students will

- Draw from observation, memory and imagination using basic drawing materials
- Understand the fundamental elements and principles of art such as: line, shape, space, light, color, texture, unity, variety, contrast, balance, rhythm and emphasis
- Create several two dimensional and three dimensional projects that are both aesthetically pleasing and/or functional
- Have knowledge of art works by accomplished artists, various styles of art, and the role of art in human culture
- Use an art vocabulary when describing, discussing, or evaluating their personal works or art and the works of others
- Use and care for art materials and equipment and portfolio maintenance in appropriate ways
- Complete multicultural art projects that foster student respect for human differences
- Engage in long term products that involve critical thinking and risk taking in art making
- Have a positive attitude and sensitivity toward their art work and the work of others.

## Technology and Engineering Grades 6 – 8

In middle school, students will develop technology and engineering skills and abilities in seven domains:

- Identify and explain the steps of the engineering design process
- Create a multi-view drawing (orthographic projection)
- Identify and explain the universal system model (goal, input, process, output, feedback)
- Demonstrate safe and proper selection of tools, supplies and equipment
- Use hand tools, materials, and equipment safely and effectively
- Apply knowledge selection of materials based upon their properties and characteristics
- Describe a manufacturing organization and basic processes (cutting, shaping, forming)
- Communicate design ideas through Computer-Aided Design (CAD) sketches, and verbal or graphic presentations
- Understand how the communication industry utilizes new technology

- Identify operation of transportation systems (land, water, air & space)
- Understand how sub-systems work together (braking, steering, exhaust, electrical systems, etc.)
- Identify parts of structure (foundation, floor, wall, roof)
- Identify three major types of bridges and the forces that act upon them (tension, compression bending, shear)
- Demonstrate an understanding of adaptive or assisted devices (e.g. prosthetics).

## Wellness: Physical Education – Grade 7

In seventh grade, students will

- Begin to acquire competence in a variety of movement forms
- Continue to increase ability to vary and adapt skills in many movement
- Understand and apply more advanced movement and strategies
- Begin to identify characteristics of highly skilled performance
- Establish personal fitness goals
- Assess physiological indicators of exercise during and after physical activity
- Understand and apply basic principles of training to physical fitness
- Recognize the role of sport, games and dance in modern culture
- Identify behaviors that are inclusive in physical activity settings
- Enjoy participation in physical activity
- Try new and challenging activities
- Relate movement and social learning to other subjects and daily life
- Participate in a variety of games, sports, and group activities
- Participate in individual activities such as badminton, tennis, gymnastics, and track and field
- Identify areas of wellness as it applies to themselves and others.

## Wellness: Health – Grade 7

In seventh grade, students will develop skills and abilities in three domains of health and wellness:

### Respect for Differences

- Define stereotype, bullying and intolerance and explain how they can contribute to bias, discrimination, hate, and violence
- Explain the detrimental effects of prejudice (e.g., prejudice on the basis of race, gender, sexual orientation, class, or religion) on individual relationships and on society as a whole
- Use a decision-making model to make decisions around a variety of health-related issues including interpersonal relationships and conflict
- Identify and demonstrate strategies for resolving conflict and building positive relationships
- Demonstrate ways to build a supportive, inclusive environment in the school and community

### Mental Health

- Define body image
- List factors that influence people's body image, self-esteem and eating behaviors, including friends, peer groups, family, and media
- Define eating disorders including anorexia and bulimia
- Recognize signs of unhealthy eating patterns and describe behaviors associated with bulimia and anorexia
- Explain some underlying causes of eating disorders
- Learn to recognize body signals regarding hunger and practice mindful eating



- Analyze various media and identify messages and techniques used to influence consumer behavior and choices
- Name resources/people students can talk to about body image and eating disorders
- Define stress
- Identify causes of stress in their lives, the positive and negative effects of that stress, and healthful ways to relieve it
- Recognize body signs that signal stress
- Practice and demonstrate ways to relieve stress (e.g., relaxation, exercise, meditation)
- Recognize the value of friends, family and community as sources of help in times of stress, conflict or trouble.

### **Violence Prevention**

- Identify the social and emotional consequences of harassment (e.g., gender, racial, handicap, sexual in nature, etc.)
- Define sexual harassment – physical/verbal/written/gestural - and gives examples of each
- Distinguish between flirting and sexual harassment
- Examine the influence of sex role expectations and stereotypes on their beliefs and behaviors
- Describe the power of the individual in harassment situations and identify situations where individuals can become active in preventing harassment
- Describe effective ways to respond to sexual harassment
- Demonstrate effective communication, negotiation, and conflict resolution skills

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