

# Kehoe-France Northshore

## 6<sup>th</sup> Grade Curriculum

### Language and Literature

*The grade six language arts curriculum emphasizes systematic, explicit skills instruction in reading and writing. Students read and comprehend a wide variety of grade-level-appropriate literature. Students learn the writing process, writing strategies and writing applications with an emphasis on written and oral English language conventions and correct spelling. Some examples of specific concepts and skills which students are to master are provided in the topic areas listed below:*

#### **Reading Standards for Literature:**

- Cite relevant textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
- Determine the theme or central idea of a text and how it is conveyed through particular details; provide a summary of the text from personal opinions or judgments.
- Describe how a particular story's or drama's plot unfolds as well as how the characters respond or change as the plot moves toward a resolution.
- Determine the meaning of words or phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of a specific word choice on meaning and tone.
- Analyze how a particular sentence, chapter, scene, or stanza fits into the overall structure of a text and contributes to the development of the theme, setting, or plot.
- Explain how an author develops the point of view of the narrator or speaker in a text.
- Compare and contrast the experience of reading a story, drama, or poem to listening to or viewing an audio, video, or live version of the text.
- Compare and contrast texts in different forms or genres that have similar themes and topics.
- By the end of the year, read and comprehend literature, including stories, dramas, and poems, in the grades 6-8 text complexity proficiently, with scaffolding as needed at the high end of the range.

#### **Reading Standards for Informational Text:**

- Cite text evidence to support analysis of what the text says as draw inferences from the text.
- Determine a central idea of a text and how it is transferred through details; provide a summary of the text.
- Analyze in detail how a key individual, event, or idea is introduced, illustrated, and elaborated in a text.

- Determine the meaning of words or phrases as they are used in a text, including figurative, connotative, and technical meanings.
- Analyze how a particular sentence, paragraph, chapter, or section fits into the overall structure of a text.
- Determine an author's point of view or purpose in a text and explain how it's expressed.
- Integrate information presented in different media or formats to develop a coherent understanding of a topic or issue.
- Trace and evaluate the argument and specific claims in a text, distinguishing between claims supported by evidence and not.
- Compare and contrast one author's presentation of events with that of another.
- Read and comprehend literary nonfiction in the grades 6-8 text complexity proficiently, with scaffolding as needed at the high end range.

### **Writing:**

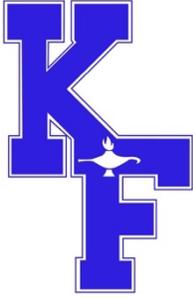
- Write arguments to support claims with clear reasons and relevant evidence.
- Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.
- Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.
- Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
- With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a different approach.
- Use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of three pages in a single sitting.
- Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate.
- Gather relevant information from multiple print and digital sources.
- Draw evidence from literary or informational texts to support analysis, reflection, and research.
- Develop grade-appropriate paragraphs and multi-paragraph compositions using the various modes of writing (description, narration, exposition, persuasion, business letters).
- Write routinely over extended time frames and shorter time frames for different tasks, purposes, and audiences.

### **Speaking and Listening:**

- Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on various topics.
- Interpret information presented in diverse media and formats.
- Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to stress main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.
- Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.
- Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.

## Language:

- Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking.
  - Ensure that pronouns are in the proper case (subjective, objective and possessive pronouns).
  - Use intensive pronouns.
  - Recognize and correct inappropriate shifts in pronoun number and person.
  - Recognize and correct vague pronouns.
  - Recognize variations from standard English in their own and others' writing and speaking, and identify and use strategies to improve expression in conventional language.
- Demonstrate the conventions of standard English capitalization, punctuation, and spelling when writing.
  - Use punctuation (commas, parentheses, dashes).
  - Spell correctly.
- Use knowledge of language and its conventions when writing, speaking, reading, or listening.
  - Vary sentence patterns for meaning, reader/listener interest, and style.
  - Maintain consistency in style and tone.
- Determine or clarify the meaning of unknown and multiple-meaning words and phrases.
  - Use context as a clue to the meaning of a word or phrase.
  - Use common grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., audience, auditory, audible).
  - Consult reference materials, both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech.
  - Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).
- Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.
  - Interpret figures of speech in context.
  - Use relationship between particular words to better understand each of the words.
  - Distinguish among the connotations (associations) of words with similar denotations (definitions).
- Acquire and use accurately grade-appropriate general and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.



# Kehoe-France Northshore

## 6<sup>th</sup> Grade Curriculum

### Mathematics

*In Grade 6, instructional time should focus on four critical areas: (1) connecting ratio and rate to whole number multiplication and division and using concepts of ratio and rate to solve problems; (2) completing understanding of multiplication and division of fractions and extend their understandings of numbers to the system of rational numbers, which includes negative numbers; (3) writing, interpreting, and using expressions and equations; and (4) developing understanding of statistical thinking. Some examples of specific concepts and skills which students are to master are provided in the topic areas listed below:*

#### The Number System:

- Apply and extend previous understandings of multiplication and division to divide fractions by fractions.
  - Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.
- Multiply and divide multi-digit numbers and find common factors and multiples.
  - Divide multi-digit numbers.
  - Add, subtract, multiply, and divide multi-digit decimals.
  - Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12.
- Apply and extend previous understandings of numbers to the system of rational numbers.
  - Understand that positive and negative numbers are used together to describe quantities having opposite directions or values.
  - Understand a rational number as a point on the number line.
    - Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line.
    - Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane.
    - Find and position integers and other rational numbers on a horizontal or vertical number line diagram
  - Understand ordering and absolute value of rational numbers.
    - (NS.7a) Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.

- (NS.7b) Write, interpret, and explain statements of order for rational numbers in real-world contexts.
- (NS.7c) Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.
- (NS.7d) Distinguish comparisons of absolute value from statements about order.
- (NS.8) Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane.

### **Expressions and Equations:**

- Apply and extend previous understandings of arithmetic to algebraic expressions.
  - Write and evaluate numerical expressions involving whole-number exponents.
  - Write, read, and evaluate expressions in which letters stand for numbers.
  - Apply the properties of operations to generate equivalent expressions.
  - Identify when two expressions are equivalent.
- Reason about and solve one-variable equations and inequalities.
  - Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true?
  - Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
  - Use variables to represent numbers and write expressions when solving a real-world or mathematical problem.
  - Solve real-world and mathematical problems by writing and solving equations.
  - Write an inequality of the form  $x > c$  or  $x < c$  to represent a constraint or condition in a real-world or mathematical problem.
- Represent and analyze quantitative relationships between dependent and independent variables.

### **Geometry:**

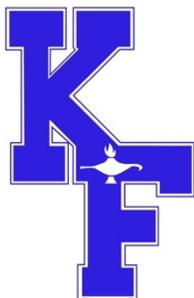
- Solve real-world and mathematical problems involving area, surface area, and volume.
  - Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes.
  - Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism.
  - Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate.
  - Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures.

### **Statistics and Probability:**

- Develop understanding of statistical variability.
  - Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.
  - Understand that a set of data collected to answer a statistical question has a distribution that can be described by its center, spread, and overall shape.
  - Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.
- Summarize and describe distributions.
  - Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
  - Summarize numerical data sets in relation to their context.

### **Ratios and Proportional Relationships:**

- Understand ratio concepts and use ratio reasoning to solve problems.
  - Understand ratio concepts and use ratio reasoning to solve problems.
  - Understand the concept of a unit rate associated with a ratio and use rate language in the context of a ratio relationship.
  - Use models and pictures to explain concepts or solve problems involving ratio, proportion, and percent with whole numbers.
    - Describe, complete, and apply a pattern of differences found in an input-output table.
    - Calculate, interpret, and compare rates such as \$/lb., mpg, and mph.



# Kehoe-France Northshore

## 6<sup>th</sup> Grade Curriculum

### Science

*In sixth grade, the science curriculum emphasis is physical science. Life and earth science concepts are included within the context of physical science. Students learn scientific process skills and participate in investigations and experiments. Some examples of specific concepts and skills which students are to master are provided in the topic areas listed below:*

#### Science and Engineering Practices:

- Asking questions and defining problems.
- Developing and using models.
- Planning and carrying out investigations.
- Analyzing and interpreting data.
- Using mathematics and computational thinking.
- Constructing explanations and designing solutions.
- Engaging in argument from evidence.

#### Physical Science:

- Measure and record the volume and mass of substances in metric system units.
- Calculate the density of large and small quantities of a variety of substances.
- Construct models that replicate atomic structure for selected common elements from the periodic table.
- Differentiate between the physical and chemical properties of selected substances.
- Compare physical and chemical changes.
- Draw or model the movement of atoms in solid, liquid, and gaseous states.
- Simulate how atoms and molecules have kinetic energy exhibited by constant motion.
- Determine the temperatures at which water changes physical phases (e.g., freezing point, melting point, boiling point).
- Describe the properties of reactants and products of chemical reactions observed in the lab.
- Identify the average atomic masses of given elements using the periodic table.
- Compare the masses of reactants and products of a chemical reaction.
- Determine the effect of particle size of the same reactants on the rate of chemical reactions during a lab activity.
- Use a variety of resources to identify elements and compounds in common substances.

### **Motion and Forces:**

- Construct and analyze graphs that represent one-dimensional motion and predict the future positions and speed of a moving object.
- Explain why velocity is expressed in both speed and direction.
- Compare line graphs of acceleration, constant speed, and deceleration.
- Describe and demonstrate that friction is a force that acts whenever two surfaces or objects move past one another.
- Explain how the resistance of materials affects the rate of electrical flow.
- Identify forces acting on all objects.
- Determine the magnitude and direction of unbalanced (i.e., net) forces acting on an object.
- Demonstrate that an object will remain at rest or move at a constant speed and in a straight line if it is not subjected to an unbalanced force.

### **Transformations of Energy:**

- Describe and give examples of how all forms of energy may be classified as potential or kinetic energy.
- Compare forms of energy (e.g., light, heat, sound, electrical, nuclear, mechanical).
- Describe and summarize observations of the transmission, reflection, and absorption of sound, light, and heat energy.
- Explain the relationship between work input and work output by using simple machines.
- Explain the law of conservation of energy.
- Compare and/or investigate the relationships among work, power, and efficiency.
- Trace energy transformations in a simple system (e.g., flashlight).
- Compare types of electromagnetic waves.
- Identify and illustrate key characteristics of waves (e.g., wavelength, frequency, amplitude).
- Predict the direction in which light will refract when it passes from one transparent material to another.
- Apply the law of reflection and law of refraction to demonstrate everyday phenomena.
- Determine through experimentation whether light is reflected, transmitted, and/or absorbed by a given object or material.
- Explain the relationship between an object's color and the wavelength of light reflected or transmitted to the viewer's eyes.
- Compare how heat is transferred by conduction, convection, and radiation.
- Identify conditions under which thermal energy tends to flow from a system of higher energy to a system of lower energy.
- Describe how electricity can be produced from other types of energy.
- Identify heat energy gains and losses during exothermic and endothermic chemical reactions.
- Identify risks associated with the production and use of coal, petroleum, hydroelectricity, nuclear energy, and other energy forms.

**Science in the Environment:**

- Identify energy types from their source to their use and determine if the energy types are renewable, nonrenewable, or inexhaustible.
- Explain how the use of different energy resources affects the environment and the economy.
- Explain how an inexhaustible resource can be harnessed for energy production.
- Describe methods for sustaining renewable resources.
- Identify ways people can reuse, recycle, and reduce the use of resources to improve and protect the quality of life.
- Illustrate how various technologies influence resource use in an ecosystem.

**Earth Science:****Earth's Place in the Universe:**

- Patterns of the apparent motion of the sun, the moon, and stars in the sky can be observed, described, predicted, and explained with models.
- Earth and its solar system are part of the Milky Way galaxy, which is one of many galaxies in the universe.
- The solar system consists of the sun and a collection of objects, including planets, their natural satellite(s) (moons), and asteroids that are held in orbit around the sun by its gravitational pull on them.
- The solar system appears to have formed from a disk of dust and gas, drawn together by gravity.

**Life Science:****Structure and Function:**

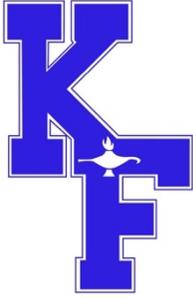
- All living things are made up of cells, which are the smallest living unit.
- An organism may consist of one single cell (unicellular) or many different numbers and types of cells.
- Within cells, special structures (organelles) are responsible for particular functions.
- The cell membrane forms a boundary that controls the material(s) that enter and leave the cells in order to maintain homeostasis.

**Interdependent Relationships in Ecosystems:**

- Organisms, and populations of organisms, are dependent on their environmental interactions both with other living things and nonliving factors.
- An ecosystem, organisms and populations with similar requirements for food, water, oxygen, or other resources may compete with each other for limited resources.
- Growth of organisms and population increases are limited by access to resources.
- Predatory interactions may reduce the number of organisms or eliminate whole populations of organisms. Patterns of interactions of organisms with their environments, both living and nonliving, are shared.

**Cycle of Matter and Energy Transfer in Ecosystems:**

- Food webs are models that demonstrate how matter and energy is transferred between producers, consumers, and decomposers as the three groups interact within an ecosystem.
- Transfers of matter into and out of the physical environment occur at every level.
- Decomposers recycle nutrients from dead plant or animal matter back to the soil or water.
- The atoms that make up the organisms in an ecosystem are cycled repeatedly between the living and nonliving parts of the ecosystem.



# Kehoe-France Northshore

## 6<sup>th</sup> Grade Curriculum

### Individuals and Societies

*Students in grade six expand their understanding of history by studying the people and events that ushered in the dawn of the major western and non-western ancient civilizations. Students develop higher levels of critical thinking by considering why civilizations developed where and when they did, why they became dominant and why they declined. Students analyze the interactions among the various cultures, the contributions and the link, despite time, between the contemporary and ancient worlds. Some examples of specific concepts and skills which students are expected to master are provided in the topic areas below:*

#### Geography:

- **Geography Skills**
  - Identify and label latitude and longitude using a world map or globe to determine climate zones and time zones.
  - Plot coordinate of latitude and longitude to determine location or change of location.
  - Compare and contrast physical and political boundaries of civilizations, empires, and kingdoms using maps and globes.
  - Determine world migration patterns and population trends by interpreting maps, charts, and graphs.
- **Culture and Environment**
  - Identify and describe physical features and climate conditions that contributed to early human settlement in regions of the world.
  - Explain how world migration patterns and cultural diffusion influenced human settlement.
  - Explain the connection between physical geography and its influence on the development of civilization.

#### Civics:

- **Government: Foundation and Structure**
  - Describe the essential elements of Greek city-state government that influenced the development of democracy.
  - Describe the government of the Roman Republic and how it influenced the development of democracy.

## Economics:

- **Resources and Interdependence**

- Explain the impact of job specialization in the development of civilizations.
- Analyze the progression from barter exchange to monetary exchange.
- Describe the economic motivation for expanding trade and territorial conquests in world civilizations using economic concepts.
- Explain how the development of trade and taxation influenced economic growth in the ancient world.

## History:

- **Historical Thinking Skills**

- Produce clear and coherent writing for a range of tasks, purposes, and audiences by:
  - Conducting historical research
  - Evaluating a broad variety of primary and secondary sources
  - Comparing and contrasting varied points of view
  - Determining the meaning of words and phrases from historical texts
  - Using technology to research, produce, or publish a written product
- Construct and interpret a parallel timeline of key events in the ancient world.
- Interpret data presented in a timeline to identify change and continuity in world civilizations
- Analyze information in primary and secondary sources to address document-based questions.
- Identify and compare measurements of time in order to understand historical chronology.

- **Key Events, Ideas, and People**

- Analyze the relationship between geographical features and early settlement patterns using maps and globes.
- Examine how the achievements of early humans led to the development of civilization.
- Describe the characteristics and achievements of the ancient river civilizations of Mesopotamia, Egypt, Indus Valley, and China.
- Describe the development of the Greek city-state, the culture and achievements of Athens and Sparta, and the impact of Alexander the Great's conquests on the spread of Greek culture.
- Describe the characteristics of Roman civilization, its cultural, political, and technological achievements, and its influence on other later cultures.
- Analyze the origin and spread of major world religions as they developed throughout history.
- Summarize key features of ancient West African kingdoms (Ghana, Mali, and Songhai).
- Identify key characteristics of Chinese dynasties' political, economic, and social structures.
- Describe the characteristics, significance, and influences of feudalism, the Crusades, and the growth of towns and cities through trade and commerce during the Middle Ages.
- Examine the significance of the people and ideas that influenced the Renaissance in Europe.
- Identify historical issues or problems in world civilizations and discuss how they were addressed.