

# Kehoe-France Northshore

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

### English Language Arts

*The grade four language arts curriculum emphasizes systematic, explicit skills instruction in reading and writing. Students apply knowledge of phonics, letter patterns, syllabication and word parts to achieve fluent oral and silent reading. Students learn the writing process, writing strategies and writing applications with an emphasis on written and oral English language conventions and correct spelling. Students read a wide variety of literature and participate in language-rich instructional activities. Some examples of specific concepts and skills which students are to master are provided in the topic areas listed below:*

**IB Strand (Written Language - Reading) - Phase 5: Learners show an understanding of the strategies authors use to engage them. They have their favorite authors and can articulate reasons for their choices. Reading provides a sense of accomplishment, not only in the process, but in the access it provides them to further knowledge about, and understanding of, the world.**

#### **Reading - Foundational Skills:**

- Know and apply grade-level phonics and word analysis skills in decoding words.
- Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multisyllabic words in context and out of context.

#### **Reading – Fluency:**

- Read with sufficient accuracy and fluency to support comprehension.
  - Read grade-level text with purpose and understanding.
  - Read on level prose and poetry with fluency and accuracy.
  - Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

#### **Reading - Comprehension Skills (Literature and Informational Text):**

- Refer to details and examples in a text when explaining what the text says and when drawing inferences.
- Determine the theme of a story, drama, or poem from details in the text; summarize the text.
- Describe in depth a character, setting, or event in a story or drama.

- Determine the meaning of words and phrases as they are used in a text, including figurative language such as metaphors and similes.
- Explain major differences between poems, drama, and prose, and refer to the structural elements of poems and drama.
- Compare and contrast the point of view from which different stories are narrated, including the difference between first- and third-person narrations.
- Make connections between the text of a story or drama and a visual or oral presentation of the text.
- Compare and contrast the treatment of similar themes and topics and patterns of events in stories, myths, and traditional literature from different cultures.
- By the end of the year, read and comprehend literature, including stories, dramas, and poetry, in the grades 4-5 text complexity proficiently.
- Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
- Determine the main idea of a text and explain how it is supported by key details; summarize the text.
- Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.
- Determine the meaning of general academic words and phrases in a text relevant to a grade 4 topic or subject area.
- Describe overall structure of events, ideas, concepts, or information in a text or part of a text.
- Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided.
- Interpret information presented visually, orally, or quantitatively and explain how the information contributes to an understanding of the text.
- Explain how an author uses reasons and evidence to support particular points in a text.
- Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeable.
- By the end of year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 4-5 text complexity proficiently.

### **Reading – Vocabulary:**

- Use context as a clue to the meaning of a word or phrase.
- Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word.
- Consult reference materials, both print and digital.
- Explain the meaning of simple similes and metaphors.
- Recognize and explain the meaning of common idioms, adages, and proverbs.
- Demonstrate understanding of words by relating them to their opposites (antonyms) and to words with similar, but not identical meanings (synonyms).
- Acquire and use accurately grade-appropriate general academic words and phrases.

**IB Strand (Written Language – Writing) – Phase 4: Learners show an understanding of the role of the author and are able to take on the responsibilities of authorship. They demonstrate an understanding of story structure and are able to make critical judgments about their writing, and the writing of others. They are able to rewrite to improve the quality of their writing.**

**Writing:**

- Write opinion pieces on topics or texts, supporting a point of view with reasons and information.
  - Introduce a topic or text, state an opinion, and create an organizational structure in which related ideas are grouped to support the writer’s purpose.
  - Provide reasons that are supported by facts and details.
  - Link opinion and reasons using words and phrases.
  - Provide a concluding statement or section related to the opinion presented.
- Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
  - Introduce a topic clearly and group related information in paragraphs and sections; including formatting, illustrations, and multimedia when useful.
  - Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.
  - Link ideas within categories of information using words and phrases.
  - Use precise language and vocabulary to inform about or explain the topic.
  - Provide a concluding statement or section related to the information or explanation presented.
- Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.
  - Establish a situation and introduce a narrator and/or characters; organize and event sequence that unfolds naturally.
  - Use dialogue and description to develop experiences and events or show the responses of characters to situations.
  - Use a variety of transitional words and phrases to sequence events.
  - Use concrete words and phrases and sensory details to convey experiences and events precisely.
  - Provide a conclusion that follows from the narrated experiences or events.
- Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience.
- With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.
- With some guidance and support from adults, produce and publish grade-appropriate writing using technology, either independently or in collaboration with others.
- Conduct short research projects that build knowledge through investigation of different aspects of a topic.
- Recall relevant information from experiences or gather relevant information from print and digital resources; take notes and categorize information, and provide a list of sources.
- Draw relevant evidence from grade-appropriate literary or informational texts to support analysis, reflection, and research.
- Write routinely over extended time frames and shorter time frames.
- Write neatly, fluidly and legibly in cursive and manuscript.

**IB Strand (Oral Language – Speaking and Listening) – Phase 5: Learners are able to understand the difference between literal and figurative language; how to use language differently for different purposes. They are aware that they are building on their previous experiences and using language to construct new meaning.**

### **Speaking and Listening:**

- Engage effectively in a range of collaborative discussions.
- Paraphrase portions of a text read aloud and information presented in diverse media and formats, including visually, quantitatively, and orally.
- Identify the reasons and evidence a speaker provides to support particular points.
- Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
- Add audio recordings and visual displays to presentations when appropriate.
- Differentiate between contexts that call for formal English and situations where informal discourse is appropriate.

### **Language:**

- Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking.
  - Use relative pronouns & relative adverbs.
  - Form and use the progressive verb tenses.
  - Use modal auxiliaries (e.g., can, may, must)
  - Order adjectives within sentences according to conventional pattern (e.g., *a small red bag* rather than *a red small bag*).
  - Form and use prepositional phrases.
  - Produce complete sentences, recognizing and correcting inappropriate fragments and run-ons.
  - Correctly use frequently confused words (to, too, etc.).
- Demonstrate command of the conventions of Standard English capitalization, punctuation, and spelling when writing.
  - Use correct capitalization.
  - Use commas and quotation marks to mark direct speech and quotations from a text.
  - Use a comma before a coordinating conjunction in a compound sentence.
  - Spell grade-appropriate words correctly, consulting references as needed.

**IB Strand (Visual Language – Viewing and Presenting) – Phase 5: Through inquiry, learners engage with an increasing range of visual text resources. As well as exploring the viewing and presenting strategies that are a part of the planned learning environment, they select and use strategies that suit their learning styles. They are able to make connections between visual imagery and social commentary. They show more discernment in selecting information they consider reliable. They are able to use visual imagery to support a position.**



# Kehoe-France Northshore

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

### Mathematics

*By the end of fourth grade, students understand large numbers and addition, subtraction, multiplication and division of whole numbers. They describe and compare simple fractions and decimals. They understand the properties of and the relationships between plane geometric figures. They collect, represent and analyze data to answer questions. The following are some examples of skills and concepts developed in the areas of:*

**IB Strand (Number) – Phase 4:** Learners will understand that the base 10 value system extends indefinitely in two directions and be able to model, compare, read, write, and order numbers to million or beyond. They will work toward modelling, comparing, reading, writing, ordering, and converting fractions and decimals. They use mental and written strategies to solve problems involving whole numbers, fractions, and decimals in real-life situations, using a range of strategies to evaluate reasonableness of answers.

**IB Strand (Pattern and Function) – Phase 3:** Learners will analyze patterns and identify rules for patterns, developing the understanding that functions describe the relationship or rules that uniquely associate members of one set with members of another set. They will understand the inverse relationship between multiplication and division, and the associative and commutative properties of multiplication. They will be able to use their understanding of pattern and function to represent and make sense of real-life situation and, where appropriate, to solve problems involving the four operations.

#### Operations and Algebraic Thinking:

- Use the four operations with whole numbers to solve problems.
  - Interpret a multiplication equation as a comparison. Know all basic facts for multiplication and division through  $12 \times 12$  and  $144 \div 12$ .
  - Multiply or divide to solve word problems.
  - Solve multi-step word problems using four operations.
- Gain familiarity with factors and multiples.
  - Using whole numbers in the range of 1-100.
    - Find all factor pairs for a given whole number.
    - Recognize that a given whole number is a multiple of each of its factors.
    - Determine whether a given whole number is a multiple of a given one-digit number.
    - Determine whether a given whole number is prime or composite.
- Generate and analyze patterns.
  - Generate a number or shape pattern that follows a given rule.

## Number and Operations in Base Ten:

- Generalize place value understanding for multi-digit whole numbers.
  - Read and write place value in word, standard, and expanded form through 1,000,000. Compare two multi-digit numbers based on meanings of the digits in each place using  $>$ ,  $=$ , and  $<$  symbols.
  - Use place value understanding to round multi-digit whole numbers, less than or equal to 1,000,000, to any place.
- Use place value understanding and properties of operations to perform multi-digit arithmetic.
  - Fluently add and subtract multi-digit whole numbers with sums less than or equal to 1,000,000.
  - Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers using strategies based on place value and the properties of operations.
  - Divide to find whole number quotients and remainders with up to four-digit dividends and one-digit divisors.

## Number and Operations – Fractions:

- Explain why a fraction is equivalent to a fraction by using visual models, with attention to how the number and size of the parts differ even though the two fractions are the same size. Model, read, write, compare, order, and represent fractions with different denominators through twelfths.
- Compare two fractions with different numerators and denominators.
- Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
- Decompose a fraction into a sum of fractions with the same denominator in more than one way.
- Add and subtract mixed numbers with like denominators.
- Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators.
- Multiply a fraction by a whole number.
- Solve word problems by multiplying fractions and whole numbers.
- Understand decimal notation for fractions, and compare decimal fractions.
- Use decimal notation for fractions through hundredths.
- Compare two decimals to hundredths by reasoning about their size.

**IB Strand (Measurement) – Phase 4: Learners will understand that a range of procedures exists to measure different attributes of objects and events, for example, the use of formulas for finding area, perimeter, and volume. They will be able to decide on the level of accuracy required for measuring and using decimal and fraction notation when precise measurements are necessary. To demonstrate their understanding of angles as a measure of rotation, the learners will be able to measure and construct angles.**

## Measurement and Data:

- Solves problems involving measurements and conversion of measurements from a larger unit to a smaller unit.
  - Know relative sizes of measurement units within in one system of units including ft, in; km, m, cm; kg, g, lb, oz; l, ml; hr, min, sec.
  - Use the four operations to solve word problems involving distances,

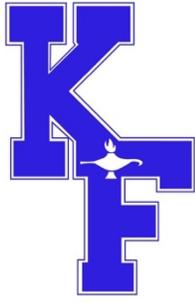
intervals of time, liquid volumes, masses of objects, and money, including problems involving whole numbers and/or simple fractions, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as a number line that features a measurement scale.

- Apply the area and perimeter formulas for rectangles in real-world and mathematical problems.
- Represent and interpret data.
  - Make a line plot to display a data set of measurements in fractions of a unit. Solve problems involving addition and subtraction of fractions by using information presented in line plots.
- Geometric measurement: Understand concepts of angles and measure angles.
  - Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement.
  - Measure angles in whole-number degrees using a protractor.
  - Recognize angle measure as an additive. Solve addition and subtraction problems to find unknown angles on a diagram in real-world and mathematical problems.
- Relate area to operations of multiplication and addition.
  - Recognize area as an additive.

**IB Strand (Shape and Space) – Phase 3: Learners will sort, describe and model regular and irregular polygons, developing an understanding of their properties. They will be able to describe and model congruency and similarity in 2D shapes. Learners will continue to develop their understanding of symmetry, in particular reflective and rotational symmetry. They will understand how geometric shapes and associated vocabulary are useful for representing and describing objects and events in real-world situations.**

### **Geometry:**

- Draw and identify lines and angles, and classify shapes by properties of their lines and angles (points, lines, line segments, rays, angles, and perpendicular and parallel lines).
  - Draw points, lines, line segments, rays, angles and perpendicular and parallel lines. Identify these in two-dimensional figures.
  - Identify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right angles as a category, and identify right triangles.
  - Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line symmetric figures and draw lines of symmetry.



# Kehoe-France Northshore

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

### Science

*In fourth grade, students will continue to learn the earth and our universe are constantly changing; energy and matter interact causing change in our physical world. In class, students develop and use basic process skills as they learn, investigate, hypothesize, evaluate, and build an understanding of the science process. Some examples of specific concepts which students are to master are provided in the topic areas listed below:*

#### IB Science Strands: Forces and Energy/Earth and Space

##### Science and Engineering Practices:

- Asking questions and defining problems.
- Developing and using models.
- Planning and carrying out investigations.
- Analyzing and interpreting data.
- Constructing explanations and designing solutions.
- Obtaining, evaluating, and communicating information.

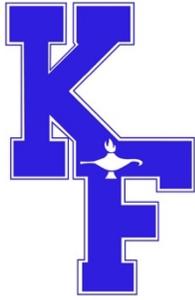
##### Physical Science:

- **Energy**
  - Use evidence to relate the speed of an object to the energy of that object.
  - Discover various ways energy can be transferred and between objects.
  - Changes that occur in energy when objects collide
  - Use metric and US system units to measure results
- **Wave Properties**
  - Describe patterns in terms of amplitude and wavelength and show that waves can cause objects to move.
  - Describe the light reflecting from objects and entering the eye allows objects to be seen.
- **Force and Motion**
  - Effects of balanced and unbalanced forces on the motion of an object
  - The patterns of an object's motion in various situations can be observed and measured.
  - Cause and effect relationships of electric and magnetic interaction between two objects not in contact with each other

- Define a simple problem that can be solved by applying scientific ideas about magnets.

**Earth Science:**

- Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in landforms over time.
- Investigate the effects of water, ice, wind, and vegetation on the rate of weathering and erosion.
- Analyze and interpret data from maps to describe patterns of Earth's features.
- Understand patterns occur in the locations of mountain ranges, ocean trenches, earthquakes, and volcanoes.
- Living things can affect the physical characteristics of their environment.



# Kehoe-France Northshore

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

### Social Studies

*Using the context of the regions of the United States, fourth grade students learn significant social studies concepts within an increasingly complex social environment. They examine fundamental concepts in geography, civics and government, and economics. Some examples of specific concepts and skills which students are to master are provided in the topic areas listed below:*

#### **IB Social Studies Strands: Human Systems and Economic Activities/ Social Organization and Culture/Continuity and Change Through Time/Human and Natural Environments**

##### **Geography – Maps and Globes:**

- Locate and label continents, oceans, the poles, hemispheres, and key parallels and meridians on a map and globe.
- Locate and label on a map the major physical features of each of the five regions of the United States and summarize how they affect the climate, economy, and population of each region.
- Identify all US states of each of the five regions.
- Measure approximate distance on a map using scale to the nearest hundredth mile.
- Determine the approximate longitude and latitude coordinates of various locations in the United States.
- Interpret various types of maps using a key/legend, compass rose including cardinal and intermediate directions, latitude/longitude, and scale.
- Use mental mapping to construct a map of the United States regions and the world to include map elements.

##### **Geography - People and Land/Environment:**

- Compare and contrast the distinguishing physical characteristics of the five regions of the United States.
- Analyze how physical characteristics of a region shape its economic development.
- Identify and explain how the physical characteristics of a region influenced human settlement.
- Illustrate how natural processes have created and/or changed the physical characteristics of places in the United States.
- Describe the human impact on the land and bodies of water of the five regions of the United States.

### **Civics – Government and Political Systems:**

- Identify and summarize the significant changes that have been made to the United States Constitution through the amendment process.
- Explain the significance of key ideas contained in the Declaration of Independence, the United States Constitution, and the Bill of Rights.
- Identify and analyze the basic purposes and necessity of government as identified in the Preamble of the United States of America.
- Differentiate between the structure and function of the three branches of federal government.

### **Civics – Role of Citizen:**

- Identify the key requirements to become a United States citizen.
- Differentiate between citizens' rights, responsibilities, and duties.
- Describe the qualities of a good citizen and how good citizenship contributes to the United States' democracy.
- Explain how good citizenship can solve a current issue.

### **History: Chronological and Historical Thinking**

- Construct timelines of historical events.
- Use timelines to explain how changes over time have caused movement of people or expansion of boundaries in the United States.
- Use appropriate vocabulary of time.
- Produce clear and coherent writing to:
  - compare and contrast past and present viewpoints on a given historical topic
  - conduct simple research
  - summarize actions/events and explain significance
  - differentiate between the 5 regions of the United States
- Explain the historical significance of U.S. political symbols.
- Define and distinguish between primary and secondary resources.
- Summarize primary resources and explain their historical importance.

### **History: People and Events**

- Interpret historical information on a map or globe.
- Describe beliefs, customs and traditions of past and present.
- Describe American democratic principles.