

## Fifth Grade

### English Language Arts

The Rhoades School 5th Grade ELA is a cross-curricular program which incorporates the analysis of non-fiction and fiction. Students learn to discern between fact and opinion, draw conclusions based upon literary evidence, make connections between text and experiential knowledge, and communicate supported viewpoints in both written and oral form. Additionally, students are encouraged to express themselves through discussion, creative writing, academic writing, collaborative projects, and multimedia presentations. Caesar's English II (Royal Fireworks Press) and Spelling Workout G (Modern Curriculum Press) complement our 5th Grade ELA program.

5th Grade literature focuses on the classics. Students study works such as Johnny Tremain, Christmas Carol, The Adventures of Tom Sawyer, and Treasure Island. Through discussion, written responses and group projects, students analyze character development, author's purpose, theme, and literary devices. Students complete creative book report projects for additional literature throughout the year. These novels include biographies, classics, Newbery award novels, and historical fiction related to the social studies curriculum. Projects include oral presentations by the students. Students study four novels in class in addition to four independently read novels.

5th Grade vocabulary development focuses on British and American classic word lists and Latin stems. Etymology of words, applications in classic literature, and analogies are analyzed through discussion, activities and assessment. Assessment is cumulative and promotes authentic learning. Additionally, vocabulary from novels and non-fiction text are studied. Students complete weekly spelling lessons which exercise skills in vocabulary development, word analysis, word application, analogies, and proofreading skills.

5th Grade writing focuses on both academic and creative writing. Students study the 6+1 traits of writing, the research process, journal writing, poetry, creative writing, grammar, editing skills, and vocabulary development. Students will learn to develop introductory and concluding paragraphs, write thesis statements that include voice, purpose, and transition statements. In addition, students will apply grammar lessons, incorporate new vocabulary in writing and analyze structure through the self, peer, and teacher-editing process. Students will also conduct research, create Cornell notes, and write multi-paragraph essays.

#### **Fifth-Grade Essential Questions:**

How do people communicate effectively through writing and speaking?

What is the purpose of writing?

How can literature be used to improve our writing and thinking?

## Learning Outcomes:

Through presenting the traits of academic and creative writing, studying classic literature and non-fiction text, and learning Latin stems and classic vocabulary, students will be able to:

- analyze sentence, paragraph and essay structure through the self, peer, teacher editing process
- use literary evidence to support responses
- conduct research, create Cornell notes, and write multi-paragraph essays
- develop stories related to units in social studies
- develop stories using vocabulary from Caesar's English lessons
- create journals documenting the SWIFT experience
- develop introductory and concluding paragraphs
- write thesis statements with appropriate voice and reason
- incorporate transition statements into writing
- apply grammar lessons to writing
- incorporate new vocabulary in writing
- identify and use literary devices
- use textual evidence to support opinions, make generalizations, draw conclusions, and make connections to characters, themes, plot development, and non-fiction topics
- analyze an author's voice and sentence structure and apply concepts to the student's writing
- identify weekly vocabulary words in literature and evaluate their meanings in context
- discern the meaning of unfamiliar words by recognizing their stems

## Math

### Level 5 Math

Math Level 5 covers concepts including number theory and fractions, equivalence in fractions and decimals, algebra, adding and subtracting fractions and mixed numbers, multiplying and dividing fractions, operations with decimals, data and graphs, geometry, measurement, percentages, integers, and coordinate planes.

The goal is to provide a safe learning environment where every student feels comfortable to participate and ask questions. Students will be guided through developing good strategies for study habits, note taking skills, and computation. Curriculum will be enriched beyond the basic scope and sequence to encourage students to develop a better understanding of the "big picture."

## Essential Questions:

How do we translate written problems into numbers and symbols and vice-versa?

How can numbers be expressed in a variety of ways including fractions, decimals, percentages, equations and graphs?

Why is mastery of basic mathematical actions critical to future understanding of more advanced concepts?

## Learning Outcomes:

### Number Theory and Fractions

- Writes any number as a product of its prime factors
- Uses exponents to show multiples of a factor
- Identifies fractions and mixed numbers as points on a number line
- Renames fractions as mixed numbers to show simplest form

### Equivalence between Fractions and Decimals

- Recognizes the relationship between place value in numbers and decimals and powers of 10
- Understands that numbers can be represented in the forms of fractions and decimals

### Algebra

- Uses variables to represent potential solutions of problems
- Uses the Distributive, Commutative, Associative, Identity, and Equality Properties to solve equations

### Add and Subtract Fractions and Mixed Numbers

- Adds fractions using equivalency to make common denominators
- Regroups as needed when adding and subtracting mixed numbers

### Multiply and Divide Fractions

- Realizes that the product of two fractions results in a number of less value than either fraction
- Recognizes that division is another way of writing multiplication and applies this to rewrite division problems with fractions as multiplication problems

### Operations with Decimals

- Understands that a decimal is the same as a fraction with a denominator of a power of 10
- Adds and subtracts decimals like whole numbers by lining up the decimal points

- Multiplies and divides decimals like whole numbers and places decimal point correctly in the resulting answer

#### Data and Graphs

- Uses a letter to represent an unknown number
- Writes and evaluates simple algebraic expressions in one variable by substitution
- Identifies and graphs ordered pairs in the four quadrants of the coordinate plane
- Solves problems involving linear functions with integer values; writes the equation; and graphs the resulting ordered pairs of integers on a grid.
- Identifies ordered pairs of data from a graph and interprets the meaning of the data in terms of the situation depicted by the graph
- Knows how to write ordered pairs correctly

#### Geometry and Measurement

- Knows that the sum of the angles of any triangle is 180 degrees and the sum of the angles of any quadrilateral is 360 degrees and uses this information to solve problems
- Measures, identifies, and draws angles, perpendicular and parallel lines, rectangles, and triangles by using appropriate tools
- Derives and uses the formula for the area of a triangle and of a parallelogram by comparing each with the formula for the area of a rectangle
- Constructs a cube and a rectangular box from two-dimensional patterns and uses these patterns to compute the surface area for these objects
- Understands the concept of volume and uses the appropriate units in common measuring systems to compute the volume of rectangular solids

#### Percent

- Interprets percentages as a part of a hundred
- Finds decimal and percent equivalents for common fractions and explains why they represent the same value
- Computes a given percent of a whole number
- Identifies and represents on a number line decimals, fractions, mixed numbers, and positive and negative integers
- Adds, subtracts, multiplies, and divides with decimals
- Uses percentages and fractions to analyze and compare data sets of different sizes

## Integers

- Adds with negative integers and subtracts positive integers from negative integers; verifies the reasonableness of the results
- Solves problems involving linear functions with integer values; writes the equation; and graphs the resulting ordered pairs of integers on a grid

## Coordinate Plane

- Graphs ordered pairs and functions in the coordinate plane
- Completes a table of values for a given function, and chooses an equation for a given function table
- Graphs formulas and linear equations, and uses graphs to solve problems
- Writes equations for linear functions

Text: *Math in Focus - Singapore Math: Level 5*

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## **Level 6 Math**

Math students study the following topics:

- Operations with fractions and decimals
- Operations with integers with the goal of gaining automaticity
- Write and simplify expressions and solve one and two step equations with applications
- Simplify ratios and unit rates
- Write and solve proportions algebraically
- Percent/fraction/decimal equivalencies
- Percent markup and discount applications
- Collect, organize, and analyze data
- Identify geometric figures based on angle relationships
- Use information to construct triangles and quadrilaterals
- Apply algebra to formulas of polygons, circles and solids - perimeter, area, circumference, and surface area
- Coordinate geometry - graphing points, linear equations, and functions

A sample of enrichment topics and applications in Level 6 math may include:

- Problem solving: California Math League (CML)
- Problem solving: Math Olympiads for Elementary and Middle School (MOEMS)
- Mathematician Investigation
- Constructions of solids

### **Essential Questions:**

- How do we translate verbal ideas to the language of mathematics?
- What are the different ways of communicating mathematics with clarity?
- How is balance relevant to mathematics?

### **Learning Outcomes:**

- Students learn essential vocabulary and communicate using mathematical rhetoric.
- Students develop an appreciation for number systems and will be able to classify types of numbers in the real and imaginary number systems.
- Students develop fluency of operations with fractions, decimals, integers, and percent/fraction/decimal equivalencies.
- Students make connections between mathematical ideas, unknowns, and real world applications.
- Students practice basic algebraic concepts of writing, evaluating, and solving expressions and equations.
- Students exercise deductive reasoning, critical thinking, and flexible thinking to apply core concepts to word problems and new mathematical experiences.

Text: *Big Ideas: Course 1 Advanced*

## **Social Studies**

The Fifth Grade Social Studies curriculum is comprised of the following units: early humans, prehistoric Southwest cultures, and Spanish Conquest. Geography is a major component of each curricular unit, with particular attention given to how geography affects human movement and settlement. The students analyze the development of early humans; compare various hominids and their migration patterns across the continents. The students study the earliest technological advances made by Clovis and Folsom cultures. They evaluate the key elements of ancient Southwest cultures including The Ancestral Pueblo, Mogollon and Hohokam. When exploring these agricultural societies of the Southwest, the students pay particular attention to cause and effect relationship between humans and the environment in which they live. Students study the history of relationships between the Native American nations and new settlers.

### The Essential Questions:

- How does physical geography affect the movement of people and their way of life?
- What are the universal facets of culture?
- How have the Earth and mankind changed over time?

### Learning Outcomes:

1. Students create political and physical maps of the Southwest, timelines, PowerPoint presentations, and iMovies.
2. Students investigate the customs and traditions of the ancient Native American groups and explore the extensive cultural borrowing that occurred throughout the Southwest and Northern Mexico.
3. Students read primary sources documents, dating to the Spanish Conquest, and analyze and discuss the author's cultural bias and perspective.
4. Students read secondary sources and discuss historical revisionism and modern conceptions of political correctness and cultural sensitivity.
5. Students write a research paper focusing on an approved topic relating to the history of the Southwest. Students conduct research, create Cornell notes, and write multi-paragraph essays.
6. Students study and produce original poems based on the poetry of the Pueblo and Navajo people.
7. Students will read, listen and write *Pourquoi* tales & creation stories based on Native American traditions.
8. Students will explore early concepts of spirituality then create a Neanderthal-style masks and metaphor poems.
9. Students will study Hopi and Zuni kachina spirits, dancers and figurines, then use oil pastels to create vivid illustrations.
10. Students will learn about the pottery of the ancient and modern Southwest cultures and create a two-dimensional drawing of one specific style and type of pot.
11. Students will study the various phases of Southwest architecture, ranging from pithouses, multi-storied mesa-top and cliff-dwelling unit pueblos, and then produce a drawing based on a ruin of their choice.

## Science

### Learning Outcomes:

1. Students will know the eight major elements that compose the Earth's solid crust.
2. Students will know the major elements of the mantle.
3. Students will know and be able to identify major crust minerals (feldspar, quartz, calcite, mica).
4. Students will know the geologic layers and characteristics of the layers that form the structure of the Earth (crust, mantle, inner core, outer core).
5. Students will be able to identify the three basic types of rocks, igneous, sedimentary, metamorphic, and explain their origins.
6. Students will know James Hutton's theories as the first theories of modern geology.
7. Students will understand how sediments may reveal the fossil record.
8. Students will be able to identify a variety of marine microfossils.
9. Students will be familiar with the divisions of geologic time.
10. Students will know the scientific method and develop their own science project.
11. Students will know how animals and plants evolved over time according to fossil evidence.
12. Students will be familiar with ice age animals found at the La Brea Tar Pits and Project 23.
13. Students will be aware of recent Woolly Mammoth finds in Siberia.
14. Students will know the characteristics of old versus young rivers and how strata are laid.
15. Students will know the geologic progression of a plateau to a mesa or a butte.
16. Students will be able to identify various types of volcanoes (shield, cinder and stratovolcanoes) and know the differences in their lavas.
17. Students will be familiar with examples of famous volcanic eruptions, mountains and mountain ranges.
18. Students will be able to define a pyroclastic flow.
19. Students will know the recognized warning signs that indicate a volcano may be ready to erupt.
20. Students will know the Earth's crust is composed of tectonic plates.



21. Students will be able to identify divergent, convergent and transform plate boundaries.
22. Students will know the various movements and effects of earthquake waves, including the P-wave, S-wave, Love Wave and Rayleigh Wave.
23. Students will know the San Andreas Fault is the division between the North American Plate and the Pacific Plate.
24. Students will be familiar with the Richter Scale.
25. Students will know important vocabulary relating to earthquakes, such as fault, focus, epicenter, tsunami, seismograph and earthquake magnitude.

## Visual Arts

Young children are active and exuberant explorers. As they become increasingly curious and are learning to become good observers of their everyday worlds, making art stimulates inquiry and sharpens careful perception. Children are interested in capturing the details that makes their artwork personalized. They discover that ideas can be interpreted in many different ways, and art making focuses the skills of imagination, observation and invention.

Throughout the year the art curriculum will be closely tied in theme and content. Our work together will consist of research and investigation of a variety of works of art by artists from many cultures and time periods. These inquiries will provoke rich discussions as we contemplate such questions as:

### Essential Questions:

- What is art?
- What is the role of art in society?
- Why does art matter?

Students will learn new techniques and hone their skills with a variety of materials. Through guided exploration of art mediums we strive to foster a dynamic environment in which children are encouraged to take risks, make discoveries and find multiple solutions. Art projects are designed to be developmentally appropriate and are open-ended in order to allow for experimentation and creative thinking. Such interdisciplinary connections reflect the complexities of the real world and promote deeper understandings and multiple perspectives. Art investigations deepen each artist's understanding of each other as well as aide in the understanding of multi-cultural differences. The overall art program will be a journey of art experiences to promote and enhance the skills and spirit in each student in the pursuit of developing evolved innovative thinkers, a.k.a "artists of life".

*"Artist of life": Creative. Critical thinker. Confident. Compassionate, caring, conscience and courageous. Thoughtful. Mindful, active and accepting. Inquisitive. Communicative: verbally, written and visually. Respectful. Believe- that anything is*

*possible, in their dreams and themselves. Imaginative. Proud. Open minded. Individualistic yet still able to be a part of the global community. Dedicated and determined. Strong: Mind, body and soul. Responsible. Resilient. Persistent and peaceful.*

As students explore art they develop their own ideas and perceptions about art. Through close observation and sustained investigation, students develop individual and global perspectives on art. With this gained knowledge young artists will utilize the principles of art while solving design problems. All projects will contain a meaningful concept and a goal that each student must achieve on their own to explore their identity in life and art. The key concepts are form, function and connection.

### **Learning Outcomes:**

- Students hone observational skills and discuss works of art.
- Expand on techniques used to produce art, elements and principles of design.
- Students integrate visual, spatial and temporal concepts with content to communicate ideas.
- Understanding the visual arts in relation to history and cultures.
- Students extend knowledge of art media, compositional and design elements while choosing new ways of using familiar tools and materials.
- Deepen imaginative capacities, observational and expressive skills.

## **Spanish**

In our Spanish program, the curriculum and methodologies are aligned to the National Standards for Foreign Language Learning.

One of the methods we use in fifth grade is called TPRS “Teaching Proficiency Through Reading & Stories”. This method meets the needs of various learning styles. It is a multi-sensory methodology. Gestures and acting, for example, meet the needs of kinesthetic learners; visual images (illustrations, props, puppets, live actors, etc.) satisfy the needs of visual learners. Students develop a real “ear for the language,” learning to listen and respond to what sounds right. Students will also use the text (Antología) (Anthology) which helps students develop literacy skills.

### **Essential Questions:**

- How can I use my existing communication skills to learn a new language?
- How does language change in different situations?

## Learning Outcomes:

1. Students will greet and introduce people, listen and respond to verbal classroom directions, and review numbers, body parts, and the use of definite articles.
2. Students will talk about activities people like and do not like, ask others and write about what they like to do, recognize and use verbs in the infinitive, and produce positive and negative statements
3. Students will express and ask how people are alike, using adjectives, correct word order, and definite and indefinite articles
4. Students will identify and use the subject pronouns, recognizing and conjugating regular -AR-ER-IR- verbs in the present tense.
5. Students will talk about personal items, classroom items, furniture, and the location of objects in a classroom, recognize and use the irregular verb *estar*, and correctly make nouns and articles plural.
6. Students will talk and write about foods and beverages for breakfast, lunch and dinner, as well as foods they like and dislike.
7. Students will discuss and write about health and exercise choices.
8. During the last trimester, the students will learn to conjugate the most common verbs in past tense applying them in different sentences.
9. Through participation in the Spanish Spelling Bee, students will demonstrate accurate translation, pronunciation and spelling of Spanish words.

## Music Technology

### Essential question:

How do you create music with modern technology?

### Learning Outcomes:

Students will understand that:

Musical options will be enhanced using modern music technology.

Students will know that:

Having access to multiple sonic timbres will enhance creativity.

Students will be able to:

Analyze and differentiate between sonic textures.

Interpret modern technology to expand the creative awareness.

Reconstruct musical sounds they have heard in the past to create music.

Express themselves in new and creative ways.

Compose and create music.

## Technology

In the first third of the year, our 5<sup>th</sup> grade students will embark on a NASA-based adventure by programming and building a Mars Lander that will perform many scientific functions. In the second trimester, they will explore more advanced programming. In the third trimester, they will have a look at electronics and building electronic systems. They will use the four parts of inquiry-based learning. (1) Learning: students explore fundamental engineering concepts and gain knowledge to apply in the design process; (2) Doing: students think, brainstorm, and design according to required functions; (3) Making: students build, test, redesign, rebuild and retest robot designs; and (4) Writing: Students keep their own robots engineering notebook. In this notebook they will record observations, make predictions, record results of their plans, constructions and experiments. They will collect data, draw designs and reflect on their experiences.

### Essential Questions:

1. How do robots see the world?
2. How do robots know what to do?
3. How can an autonomously programmed robot be designed to make decisions?

### Learning Outcomes:

Students will understand:

- The purpose and uses of the engineering design process in robotic design
- How various sensors help the robot see its world
- The uses of robotics in the exploration of space
- The flowcharting process and how it is used to plan code
- How to use programming to communicate with a robot
- How to use programming to allow the robot to make decisions
- How to think flexibly and weigh alternatives
- The importance of accuracy and precision, as well as risk taking and creativity

Students will be able to:

- Construct different robotic assemblies to accomplish tasks

- Identify and use mechanical advantage and power efficiently to perform robotic tasks
- Use algorithmic thinking to construct logical code
- Synthesize and evaluate the validity and reliability of robotic programming methods
- Apply math concepts to robotics programming
- Ask useful questions
- Be persistent

## Physical Education

Students within this age range should have mastered many locomotor and non-locomotor skills and are able to manipulate objects in a variety of ways. Students should play cooperatively and come up with group goals and support when necessary, as well as being able to work and play independently when given the chance. Understanding how exercise, movement, and fitness plays a role in their health and wellness in general is an overarching principle that is important to understand at this time.

As this age group progresses, the idea of linking in social appropriateness and sportsmanship becomes very important to a sense of team, self, and school community. Individuality becomes more important and students start to gain a greater confidence with more time. Long-term fitness and sport performance goals become easier and clearer as the student grows into their own individual. The connections of movements to other movement patterns or sports becomes more clear with time, and the connection of exercise and exertion to overall health and wellness also should be more clear.

### Essential Questions:

- What physical and social skills are necessary to have a successful game or experience in physical education class?
- What are good examples of sportsmanship? Should sportsmanship look different in different sports/games?
- Can you be a leader without being overly vocal or "bossy"?
- Does this game/sport/activity relate to any other? How is it similar? How is it different? What skills overlap?
- How do you know that you are improving?

### Learning Outcomes:

Students will be able to:

- Define appropriate rules, class, structure, and procedures for PE class.
- Apply given rules for class.
- Demonstrate willingness to participate in PE.
- Demonstrate sportsmanship and mutual respect for others regardless of any differences.
- Understand basic ways of how PE affects overall health and wellness as well as how physical activity improves academic performance.
- Demonstrate ability of positive social interaction within our class structure.
- Demonstrate the ability to agree on a common goal with a group.
- Display the ability to perform age appropriate locomotor and physical manipulation skills.
- Show participation and skill competency in aerobic, anaerobic, strength, endurance, sport and other physical exertion activities.
- Show flexibility, understanding, and compassion for others in all aspects of PE class.