Arizona Cultural Academy Elementary Learning Guide

Contents

Introduction

This handbook gives parents a summary of what students are expected to learn as they advance from Grade 1 through Grade 5 at Arizona Cultural Academy (ACA). The standards are designed to reflect the knowledge and skills that our young people need for success in middle school, high school, college, career, and life. A common set of learning goals helps teachers and parents ensure students are challenged and making appropriate progress. For other content areas, ACA aligns with the Arizona State Learning Standards and other well-established standards for the Sacred Sciences.

Grade 1 Overview | English Language Arts

First grade students independently interact with literature or informational text by asking and answering questions and identifying details and main events. They can read aloud accurately and with expression. First grade students can print all letters and can write about events, topics, and opinions.

READING

- Ask and answer questions about details in a reading selection
- Retell stories, including details
- Explain the differences between books that tell stories and books that give information
- With prompting and support, read first grade informational texts

READING: FOUNDATIONAL SKILLS

- Understand the organization and basic features of print
  - Left to right
  - Top to bottom
  - Page by page
- Recognize features of a sentence
  - Capitalization
  - Ending punctuation
- Understand spoken words, syllables, and sounds
- Understand phonics and word analysis
  - Know that every syllable must have a vowel sound
- Read regularly spelled one- and two-syllable words
- Read aloud with accuracy and expression

WRITING

- Write opinion pieces that include an opinion and the reason for the opinion
- Write informative pieces that name a topic, supply facts, and provide closure
- Write narratives about two or more events in the correct order; include details

SPEAKING AND LISTENING

- Follow rules for discussions by building on what others are saying and by asking questions
- Follow simple two-step directions
- Speak in complete sentences

LANGUAGE

- Use correct grammar
- Print all uppercase and lowercase letters
- Use correct capitalization, punctuation, and spelling
- Determine meaning of unknown words by looking at parts of the word and other words in the sentence
- Sort words into categories and define words by key attributes
  - A tiger is a large cat with stripes

Grade 1 Overview | Mathematics

First grade students will focus on four critical areas: (1) extend their understanding of base-ten notation; (2) building fluency with addition and subtraction; (3) using standard units of measure; and (4) describing and analyzing shapes.

OPERATIONS AND ALGEBRAIC THINKING

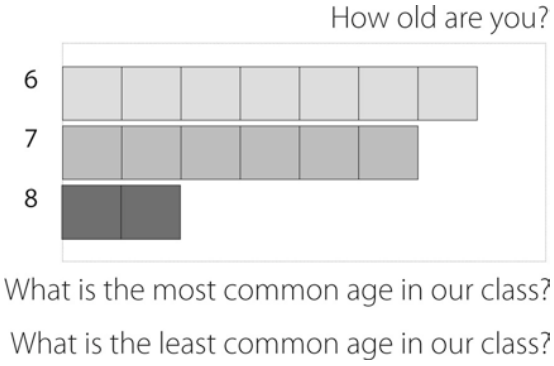
- Solve addition and subtraction word problems within 100
- Fluently add and subtract within 20
- Know all sums of two one-digit numbers
- Work with equal groups and repeated addition to understand multiplication

NUMBER AND OPERATIONS IN BASE TEN

- Understand place value: ones, tens, and hundreds
- Use place value to add and subtract within 1000
- Make reasonable estimates using place value knowledge

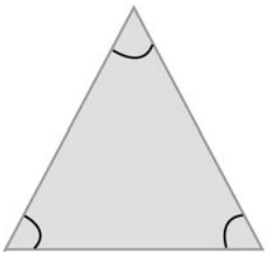
MEASUREMENT AND DATA

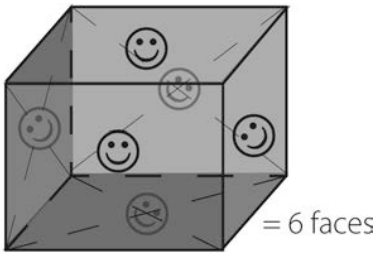
- Measure, estimate, and compare lengths in standard units
- Relate addition and subtraction to length
- Represent whole number lengths on a number line
- Work with time and money
- Know relationships of time (minutes in an hour, days in a month, etc.)
- Solve word problems using combinations of dollar bills and coins
- Collect data, build a graph, and answer questions about the data presented



GEOMETRY

- Recognize shapes, triangles, quadrilaterals, pentagons, hexagons, and cubes
- Draw shapes by size of the angles or by the number of equal faces
- Reason with shapes and their attributes





Grade 1 Overview | Social Studies

First Grade history introduces the concept that settlement enabled cultures and civilizations to develop in different places around the world, advancing their own and later civilizations. North America and Egypt are introduced as examples. Exploration is revisited by introducing the impact of interaction between Native Americans and Europeans during the period of colonization.

READING AND CRITICAL THINKING SKILLS

- Take notes with graphic organizers
- Find main ideas
- Sequence/categorize/organize information
- Analyze causes and effects/problems and solutions
- Compare and contrast
- Distinguish fact from opinion
- Identify, use, and analyze primary and secondary sources
- Link past to present

GEOGRAPHIC LITERACY AND STATISTICAL ANALYSIS SKILLS

- Interpret/create maps, charts, tables, lists, graphs, diagrams, and statistics
- Use longitude and latitude, scale, elevation, and projection
- Connect ideas to geography and geographers' practices

RESEARCH, WRITING, AND PRESENTATION SKILLS

- Conduct research
- Construct responses to social studies/geography questions
- Create an oral presentation

Grade 1 Overview | Science

First grade students begin to build foundational understanding of key topics in science.

THINK LIKE A SCIENTIST

- Raise and investigate questions about the natural world
- Generate explanations based on explorations
- Use the 5 senses as tools to make observations
- Keep accurate records
- Ask "how do you know?" questions

PHYSICAL SCIENCES

- Properties of matter: sort objects by observable properties
- Demonstrate and describe ways in which objects move
- Observe and describe changes in motion as a result of push or pull

LIFE SCIENCES

- Make observations of living things with the 5 senses
- Identify major parts of plants (roots, stem, leaves, and flowers)
- Differentiate between living and nonliving things
- Make observations that plants and animals closely resemble their parents, but variations exist among individuals within a population
- Recognize that all plants and animals (including humans) need the basic necessities (air, water, food, and space)

EARTH AND SPACE SCIENCES

- Observe that there are more stars in the sky than can be counted and they are scattered unevenly
- Explore the law of gravity
- Investigate how magnifiers make things bigger and help people see things they could not see without them
- Explore the beneficial and harmful properties of the Sun
- Recognize water, rocks, soil, and living organisms are found on Earth
- Understand the importance of water and how to be safe around it
- Recognize that some things that happen on Earth happen fast, while others happen slowly

Grade 2 Overview | English Language Arts

Second grade students accurately read and understand literature and informational text. They use correct grammar, capitalization, punctuation, and spelling. They can plan and deliver a presentation about a story or experience.

READING

- Retell folktales, including a central lesson
- Explain how the author uses reasons to support specific points in a text
- Identify the main topic and focus
- Read and understand literature and informational texts

READING: FOUNDATIONAL SKILLS

- Know and use phonics and word analysis skills
  - Read words with common prefixes and suffixes (e.g., *re_, un_, _less*)
- Distinguish long and short vowels
- Read regularly spelled two-syllable words with long vowels
- Read accurately and with understanding

WRITING

- Write opinion pieces that connect the opinion and reasons using linking words
  - Because, and, also
- Write informative pieces that provide a topic, facts, definitions, and a conclusion
- Write narrative pieces that include details to describe actions, thoughts, and feelings
- Produce writing that is developed, focused, and organized
- Write routinely over extended time frames and shorter time frames

SPEAKING AND LISTENING

- Participate in conversations with peers and adults in small and larger groups
- Recall and describe key ideas and details from something read aloud
- Give and follow three- and four-step oral directions
- Plan and deliver a presentation about a story or experience

LANGUAGE

- Use correct grammar
- Create readable documents with legible print
- Use correct capitalization, punctuation, and spelling
- Use a variety of methods to determine word meaning
- Use individual words to determine the meaning of compound words, which are two words joined to form a new word

Grade 2 Overview | Mathematics

Second grade students will focus on four critical areas: (1) developing understanding of multiplication and division and strategies for multiplication and division within 100; (2) developing understanding of fractions, especially unit fractions (fractions with a numerator of 1); (3) developing understanding of the structure of rectangular arrays and of area; and (4) describing and analyzing two-dimensional shapes.

OPERATIONS AND ALGEBRAIC THINKING

- Represent and solve multiplication and division word problems
- Understand the properties of multiplication and the relationship between multiplication and division:
    - Commutative property of multiplication:

      If you know 6 x 4 = 24, then you know 4 x 6 = 24.

    - Associative property of multiplication:

      3 x 5 x 2 can be found by 3 x 5 = 15, then 15 x 2 = 30,

      or by 5 x 2 = 10, then 3 x 10 = 30.

    - Distributive property of multiplication:

      If 8 x 5 = 40

      and 8 x 2 = 16,

      then 8 x 7 is:

      8 x (5 + 2)

      (8 x 5) + (8 x 2)

      40 + 16 = 56.

- Fluently multiply and divide within 100
- Know all products of two one-digit numbers
- Solve word problems with addition, subtraction, multiplication, and division, and identify and explain patterns in arithmetic
- Understand that multiplication and division are related

NUMBER AND OPERATIONS IN BASE TEN

- Use place value to round numbers and know the value of each digit in a four- digit number
- Use place value understanding to solve multi-digit arithmetic
- Estimate reasonable answers using place value knowledge

NUMBER AND OPERATIONS – FRACTIONS

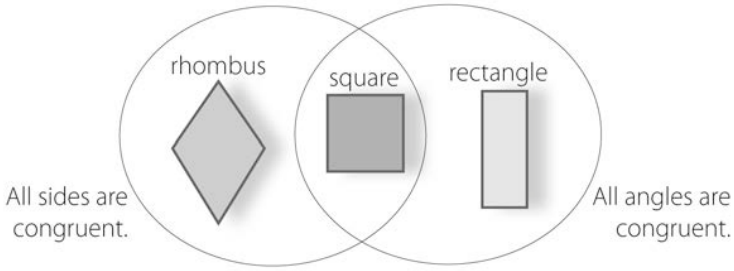
- Understand fractions as numbers
- Recognize simple equivalent fractions
- Compare two fractions with the same numerator or the same denominator

MEASUREMENT AND DATA

- Know that 25 cents is ¼ of a dollar, 50 cents is ½ of a dollar and 75 cents is ¾ of a dollar
- Tell and write time to the nearest minute

GEOMETRY

- Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects
- Understand concepts of area and perimeter and relate area to multiplication and addition
- Understand that shapes in different categories can also be in a larger category



Grade 2 Overview | Social Studies

Second grade history introduces how the United States became a nation. The impact of exploration is revisited through the introduction of western expansion of the New Nation. The development of cultures and civilizations and their contributions are expanded into the continent of Asia.

READING AND CRITICAL THINKING SKILLS

- Take notes with graphic organizers
- Find main ideas
- Sequence/categorize/organize information
- Analyze causes and effects/problems and solutions
- Compare and contrast
- Distinguish fact from opinion
- Making inferences and predictions
- Identify, use, and analyze primary and secondary sources
- Link past to present

GEOGRAPHIC LITERACY AND STATISTICAL ANALYSIS SKILLS

- Interpret/create maps, charts, tables, lists, graphs, diagrams, and statistics
- Use longitude and latitude, scale, elevation, and projection
- Connect ideas to geography and geographers' practices

RESEARCH, WRITING, AND PRESENTATION SKILLS

- Conduct research
- Construct responses to social studies/geography questions
- Create an oral presentation
- Learn to write/writing process

Grade 2 Overview | Science

Second grade students begin to build foundational understanding of key topics in science.

THINK LIKE A SCIENTIST

- Raise and investigate questions about the natural world
- Generate explanations based on explorations
- Compare observations made by teams using different tools
- Keep accurate records
- Ask "how do you know?" questions
- Understand that particular scientific investigations should yield similar results
- Differentiate between observations and inferences
- Understand that scientists investigate new ways to solve problems

PHYSICAL SCIENCES

- Observe and measure the properties of objects
- Identify objects as solid, liquid, or gas
- Understand that solids have a definite shape and liquids and gases take the shapes of their containers
- Observe and describe states of water as a solid, liquid, and gas
- Measure and compare daily temperatures
- Measure and compare the volume of liquids using a variety of containers
- Understand that materials can be altered to change some of their properties, but not all materials respond the same way to any one alteration
- Understand that people use electricity and other forms of energy to cook, cool and warm their homes, and power their cars
- Investigate the effects of applied forces (push and pull)
- Demonstrate that magnets can be used to move objects without touching them
- Understand that objects are pulled toward the ground unless something holds them up (Law of Gravity)
- Understand that the greater the force (push or pull) that is applied to an object, the greater the motion of the object

LIFE SCIENCE

- Understand the basic parts of the human body
- Understand the major life cycles of plants and animals
- Compare and contrast the basic needs that all living things have for survival
- Recognize and explain that living things are found all over Earth, but each is only able to live in habitats that meet its basic needs

EARTH AND SPACE SCIENCES

- Understand that Earth is made up of rocks and that rocks come in many shapes and sizes
- Understand that small pieces of rocks and dead plant/animal parts make up soil and explain how soil is formed
- Classify types of soil
- Identify the changing patterns in nature that repeat
- Understand that the Sun's energy directly and indirectly warms the water, land, and air
- Understand that water evaporates in an open container but not in a closed one
- Understand that air is all around us and that moving air is wind
- Identify preparations for severe weather conditions

Grade 3 Overview | English Language Arts

Third grade students interact with literature and informational text by comparing and contrasting stories, discussing a point of view and comparing it with the author's, and describing a series of events, ideas, or concepts. Along with their reading, third grade writing is more sophisticated. Students produce developed, focused, organized, and edited work. In writing informational pieces, they include charts or graphs and supply facts.

READING

- Describe how characters' actions contribute to the events
- Compare and contrast stories
- Independently read and understand grade-level literature
- Describe a series of events, ideas, or concepts
- Discuss a point of view and compare it to that of the author

READING: FOUNDATIONAL SKILLS

- Use grade-level phonics and word analysis skills
    - Read words with multiple syllables, e.g., mosquito, puppeteer
- Know the meanings of most common prefixes and suffixes
- Read accurately and with understanding

WRITING

- Write opinion pieces that include a chart or graph and list reasons that support the opinion
- Write informative pieces that name the topic, supply facts, and use linking words and phrases
- Write narrative pieces that introduce a narrator and characters, and write about what the characters say, think, and feel
- Produce writing that is developed, focused, organized, and edited

SPEAKING AND LISTENING

- Follow rules for discussions by building on what others are saying
- Recall ideas and details from something read aloud
- Plan and deliver an informative presentation
- Speak clearly and in complete sentences

LANGUAGE

- Use correct grammar
- Write legibly in cursive or joined italics; use margins and spacing
- Choose words and phrases for effect
- Use a variety of sentence types
- Capitalize appropriate words
- Correctly add suffixes to base words
    - Sitting, smiled, cries
- Recognize the differences between spoken and written standard English

Grade 3 Overview | Mathematics

Third grade students will focus on three critical areas: (1) developing understanding and fluency with multi-digit multiplication, and developing understanding of dividing to find quotients involving multi-digit dividends; (2) developing an understanding of fraction equivalence, addition and subtraction of fractions with like denominators, and multiplication of fractions by whole numbers; (3) understanding that geometric figures can be analyzed and classified based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and symmetry.

OPERATIONS AND ALGEBRAIC THINKING

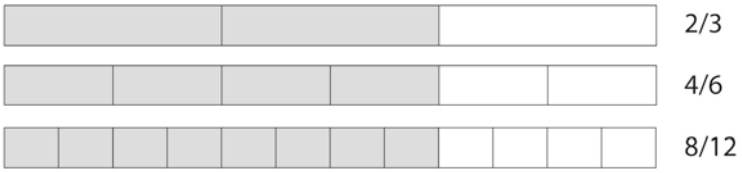
- Use addition, subtraction, multiplication, and division with whole numbers to solve word problems
- Learn about factors and multiples
    - Factors of 24: 1, 2, 3, 4, 6, 8, 12
    - Multiples of 4: 4, 8, 12, 16, 20
- Make and describe patterns with objects and numbers

NUMBER AND OPERATIONS IN BASE TEN

- Understand and use place value to generalize to 1,000,000
    - Expanded form: 6783 = 6000 + 700 + 80 + 3
- Compute with multi-digit numbers
- Solve problems involving using multiplication of multi-digit by two-digit numbers
- Divide multi-digit numbers by one-digit divisor
- Round multi-digit numbers to any place

NUMBER AND OPERATIONS – FRACTIONS

- Build understanding of equivalent fractions and ordering fractions



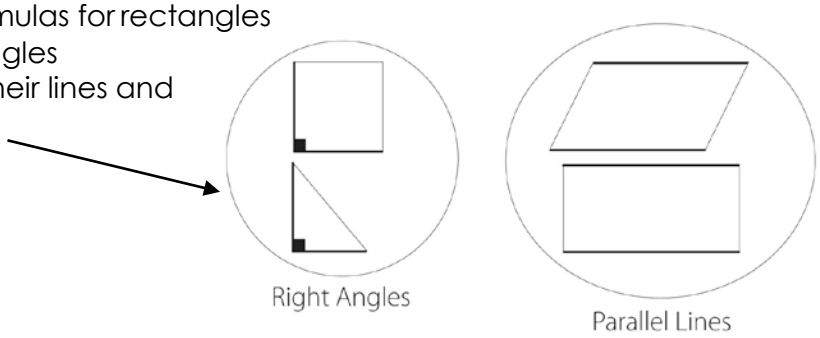
- Compare two fractions with different numerators and different denominators by making common denominators
- Add and subtract fractions and mixed numbers with like denominators
- Understand the decimal notation for fractions
- Compare decimals

MEASUREMENT AND DATA

- Solve problems using measurement conversions
- Represent and interpret data
- Organize and explain data using a line plot
- Understand concepts of angle and measure angles

GEOMETRY

- Apply area and perimeter formulas for rectangles
- Draw and identify lines and angles
- Describe and sort shapes by their lines and



Grade 3 Overview | Social Studies

Third grade history introduces the reasons for and effects of the exploration of North America to provide a foundation for further study in fourth and fifth grades. The idea of freedom is explored through the study of our nation from the Civil War through late19th and early 20th century immigration. The development of cultures and civilizations and their contributions are expanded through the introduction of ancient Greece and Rome.

READING AND CRITICAL THINKING SKILLS

- Take notes with graphic organizers
- Find main ideas
- Sequence/categorize/organize information
- Analyze causes and effects/problems and solutions
- Compare and contrast
- Distinguish fact from opinion
- Identify, use, and analyze primary and secondary sources
- Link past to present

GEOGRAPHIC LITERACY AND STATISTICAL ANALYSIS SKILLS

- Interpret/create maps, charts, tables, lists, graphs, diagrams, and statistics
- Use longitude and latitude, scale, elevation, and projection
- Connect ideas to geography and geographers' practices

RESEARCH, WRITING, AND PRESENTATION SKILLS

- Conduct research
- Construct responses to social studies/geography questions
- Create an oral presentation
- Learn to write/writing process

Grade 3 Overview | Science

Third grade students begin to build foundational understanding of key topics in science.

THINK LIKE A SCIENTIST

- Raise and investigate questions about the natural world
- Question, discuss, and check others' evidence
- Compare observations made by teams using different tools
- Keep accurate records
- Ask "how do you know?" questions
- Understand that particular scientific investigations should yield similar results
- Differentiate between observations and inferences
- Understand that scientists investigate new ways to solve problems

PHYSICAL SCIENCES

- Measure and compare temperatures of various samples of solids and liquids
- Measure and compare the mass and volume of solids and liquids
- Compare materials and objects according to properties such as size, shape, color, texture, and hardness
- Describe the changes water undergoes when it changes state through heating and cooling by using familiar scientific terms such as melting, freezing, boiling, evaporation, and condensation
- Identify some basic forms of energy such as light, heat, sound, electrical, and mechanical
- Recognize that energy has the ability to cause motion or create change
- Demonstrate that light travels in a straight line until it strikes an object or travels from one medium to another
- Demonstrate that light can be reflected, refracted, and absorbed
- Investigate, observe and explain that things that give off light also give off heat
- Investigate, observe, and explain that heat is produced when one object rubs against another, such as rubbing one's hands together

LIFE SCIENCE

- Describe structures in plants and their roles in food production, support, water, and nutrient support, and reproduction
- Investigate and describe how plants respond to stimuli
- Recognize that plants use energy from the Sun, air and water to make their own food
- Classify flowering and nonflowering plants into major groups such as producing seeds vs. spores, according to their physical characteristics
- Classify animals into major groups according to their physical characteristics and behaviors
- Describe how animals and plants respond to changing seasons

EARTH AND SPACE SCIENCES

- Explain that stars can be different (smaller/larger, appear brighter, farther away); all but the Sun are so far away they look like dots in the sky
- Identify the Sun as a star that emits energy
- The Sun appears large and bright because it is the closest star to Earth
- Demonstrate that radiant energy from the Sun can heat objects and when the Sun is not present, heat may be lost
- Explore the Law of Gravity and demonstrate that it is a force that can be overcome

Grade 4 Overview | English Language Arts

Fourth grade students read longer words and use roots, prefixes, and suffixes to determine the meanings of unknown words. They use details and examples in the text to determine the main idea and describe a character, setting, or event. Students produce writing that is developed, focused, organized, and edited. They group related ideas in paragraphs and sections, and provide a conclusion. Fourth grade students know when to use formal English, and when informal English is appropriate.

READING

- Use details and examples in the text to determine the main idea and describe a character, setting, or event
- Use first person (e.g., *I said)* and third person (e.g., *She said)* narrative styles
- Read and understand literature and informational texts

READING: FOUNDATIONAL SKILLS

- Use grade-level phonics and word analysis skills
    - Roots, prefixes, and suffixes
- Read words with multiple syllables
- Read with accuracy and understanding

WRITING

- Write opinion pieces that include a conclusion related to the opinion
- Write informative pieces that group related ideas in paragraphs and sections, and provide a conclusion
- Write narratives that introduce a narrator and characters; write about what the characters say, feel, and think; use sensory details
    - Sight, sound, scent
- Produce writing that is developed, focused, organized, and edited
- Write a short research piece

SPEAKING AND LISTENING

- Participate in discussions, carrying out assigned roles
- Paraphrase portions of information presented aloud
- Plan and deliver a presentation based on a personal experience
- Speak clearly, in complete sentences, and at an appropriate pace

LANGUAGE

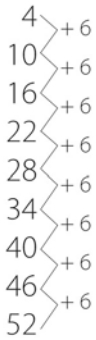
- Use correct grammar
- Use complete sentences
- Correctly use frequently confused words
    - To, two, too
    - There, their, they're
- Use correct capitalization, punctuation, and spelling
- Spell grade-level words correctly
- Know when to use formal English and when informal English is appropriate

Grade 4 Overview | Mathematics

Fourth grade students will focus on three critical areas: (1) developing fluency with addition and subtraction of fractions, and developing understanding of the multiplication of fractions and of division of fractions in limited cases (unit fractions divided by whole numbers and whole numbers divided by unit fractions); (2) extending division to 2-digit divisors, integrating decimal fractions into the place value system and developing understanding of operations with decimals to hundredths, and developing fluency with whole number and decimal operations; and (3) developing understanding of volume.

OPERATIONS AND ALGEBRAIC THINKING

- Write and interpret numerical expressions using parentheses, brackets, or braces
    - "Add 8 and 7, then multiply by 2" is 2(8 + 7)
- Express a whole number (2 – 50) as a product of its prime factors
- Describe more complex patterns by seeing the change



NUMBER AND OPERATIONS IN BASE TEN

- Understand the place value system from thousandths to millions
- Fluently multiply multi-digit numbers using the standard algorithm
- Divide multi-digit numbers by two-digit divisors
- Read, write, and compare decimals to the thousandths
- Round decimals to any place
- Compute with multi-digit whole numbers and numbers with decimals to the hundredths

NUMBER AND OPERATIONS – FRACTIONS

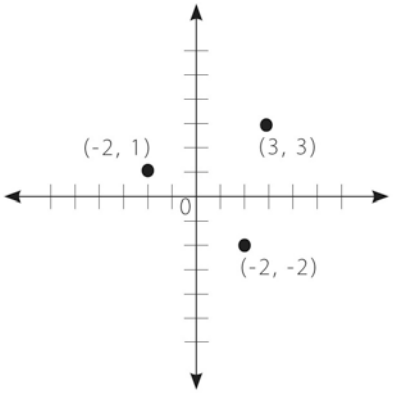
- Use equivalent fractions as a strategy for adding and subtracting fractions
- Multiply fractions and mixed numbers
- Divide unit fractions by whole numbers and whole numbers by unit fractions

MEASUREMENT AND DATA

- Convert measurements and use in problem solving
    - 0.05 m = 5 cm or 2.5 feet = 30 inches
- Represent and interpret data
- Understand concepts of volume and relate volume to multiplication and to addition
- Organize and explain data using a line plot

GEOMETRY

- Understand and find the volume of rectangular prisms
- Analyze number patterns
- Graph points on a coordinate graph



- Show a graph with an x and y axis with several points labeled by their coordinates
- Sort two-dimensional shapes into categories based on their properties
- Know what makes rectangles, parallelograms, and trapezoids different
- Know the inside sum of the angles of a triangle (180 degrees) and a quadrilateral (360 degrees)
- Be able to find the area of a triangle and parallelogram by knowing and understanding the formula for area of these shapes

Grade 4 Overview | Social Studies

Fourth grade history introduces the history of Arizona and the Southwest from its earliest civilizations to modern times. Early civilizations in Central and South America and their encounters with Europeans, as well as events in the Middle Ages which spurred exploration of the New World, are also studied to provide the historical foundation for the exploration and settlement of the Southwest.

READING AND CRITICAL THINKING SKILLS

- Take notes with graphic organizers
- Find main ideas
- Sequence/categorize/organize information
- Analyze causes and effects/problems and solutions
- Compare and contrast
- Use context clues and supporting details
- Distinguish fact from opinion
- Making inferences and predictions
- Identify, use, and analyze primary and secondary sources
- Link past to present

GEOGRAPHIC LITERACY AND STATISTICAL ANALYSIS SKILLS

- Interpret/create maps, charts, tables, lists, graphs, diagrams, and statistics
- Use longitude and latitude, scale, elevation, and projection
- Connect ideas to geography and geographers' practices
- Analyzing political cartoons and images

RESEARCH, WRITING, AND PRESENTATION SKILLS

- Conduct research
- Construct responses to social studies/geography questions
- Create an oral presentation
- Learn to write/writing process
- Create outlines

Grade 4 Overview | Science

Fourth grade students begin to build on their foundational understanding of key topics in science.

THINK LIKE A SCIENTIST

- Raise and investigate questions about the natural world
- Generate explanations based on explorations
- Compare observations made by teams using different tools
- Explain that science does not always follow a rigidly defined method but that science does involve the use of observations and empirical evidence
- Attempt reasonable answers to scientific questions and cite evidence in support
- Compare the methods and results and investigations done by other classmates
- Keep records that describe observations made, carefully distinguishing actual observations from ideas and inferences about the observations

PHYSICAL SCIENCES

- Measure and compare objects and materials and classify them by their physical properties
- Identify properties and common uses of water in each of its states
- Understand that objects are made up of many different parts and the mass of the object is the same as the combined mass of all its parts
- Investigate and describe that magnets can attract magnetic materials and attract and repel other magnets
- Identify some familiar changes in materials that result in other materials with different characteristics, such as decaying animal or plant matter, burning, rusting
- Observe and describe some basic forms of energy, including light, heat, sound, electrical, and the energy of motion
- Investigate and describe that energy may cause motion or create change
- Investigate and explain that sound is produced by vibrating objects and that pitch depends on how fast or slow the object vibrates
- Describe how moving water and air are sources of energy and can move things
- Recognize that heat flows from a hot object to a cold object and that heat flow may cause materials to change materials and identify materials that conduct heat
- Recognize that objects can move in different directions
- Describe an object's speed as determined by the distance traveled over time

LIFE SCIENCE

- Identify the processes of sexual reproduction in flowering plants
- Recognize that animal behaviors may be shaped by heredity and learning
- Compare the seasonal changes in Arizona plants and animals to those in other regions of the country
- Explain that animals cannot make their own food and that they get energy from eating other organisms (plants and/or animals)
- Trace the flow of energy from the Sun as it is transferred along the food chain
- Recognize how plants, animals, and humans can impact the environment

EARTH AND SPACE SCIENCES

- Observe that the patterns of stars in the sky stay the same although they appear to shift across the sky nightly, and different stars can be seen in different seasons
- Describe changes in the visual shape of the moon over the course of a month
- Recognize that Earth revolves around the Sun in a year and rotates on its axis in a 24-hour day
- Relate that the rotation of Earth (day and night) and apparent movements of the Sun, Moon, and stars are connected
- Identify the three categories of rocks: igneous, sedimentary, and metamorphic
- Identify the physical properties of common earth-forming minerals, including hardness, color, luster, cleavage, and streak color, and recognize the role of minerals in the formation of rocks
- Recognize that humans need resources found on Earth
- Describe the differences between physical weathering and erosion
- Investigate how technology and tools help to extend the ability of humans to observe very small things and very large things
- Identify natural resources found in Arizona

Grade 5 Overview | English Language Arts

Fifth grade students will focus on three critical areas: (1)

READING
- Quote accurately when referring to text
- Determine the main ideas and summarize the text
- Compare and contrast texts
- Explain how an author uses reason or evidence to support points in a text

READING: FOUNDATIONAL SKILLS
- Use grade-level phonics and word analysis skills
    - Roots, prefixes, and suffixes
- Read with accuracy and fluency

WRITING
- Write opinion pieces that support a point of view with reasons and information
- Write informative texts that share ideas and information
- Write narratives that use related descriptive details and a clear sequences of events
- Write clearly and with a purpose; keep the audience in mind
- Use technology to publish writing; type two pages in a single sitting

SPEAKING AND LISTENING
- Summarize information presented
- Identify reasons and evidence a speaker or media source provides to support particular points
- Identify and discuss misleading ideas
- Plan and deliver a speech
- Deliver a memorized poem or section of a speech
- Use expression and gestures

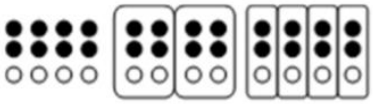
LANGUAGE
- Use correct grammar
- Use verb tenses correctly
    - Yesterday I *walked*; Today I *walk*; Tomorrow I *will walk*
- Use correct capitalization, punctuation, and spelling
- Use punctuation to separate items in a series/list
- Use underlining, quotation marks, or italics in a title
- Vary sentence length and style
- Compare and contrast styles used in literature
- Use a variety of methods to determine the meaning of an unknown word

Grade 5 Overview | Mathematics

Fifth grade students will 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 division of fractions and extending the notion of number 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.

RATIOS AND PROPORTIONAL RELATIONSHIPS

- Understand ratios and use them to solve problems
  - *A comparison of 8 black circles to 4 white circles can be written as the ration of 8:4 and can be regrouped into 4 black circles to 2 white circles (4:2) and 2 black circles to 1 white circle (2:1).*



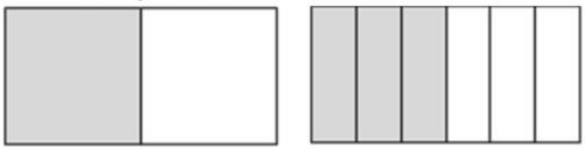
THE NUMBER SYSTEM

- Apply and extend previous understandings of multiplication and division to divide fractions by fractions

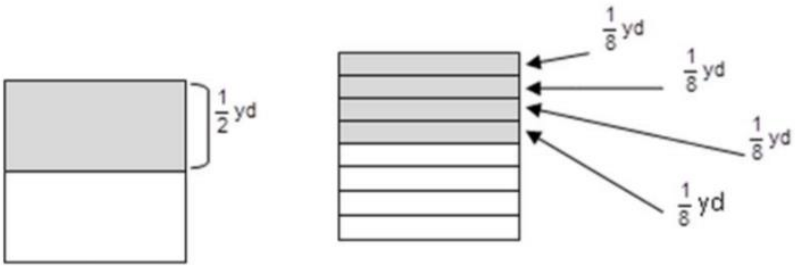
Examples:

- 3 people share $\frac{1}{2}$ pound of chocolate. How much of a pound of chocolate does each person get?

  Solution: Each person gets $\frac{1}{6}$ lb. of chocolate.



- Manny has $\frac{1}{2}$ yard of fabric to make book covers. Each book is made from $\frac{1}{8}$ yard of fabric. How many book covers can Manny make? Solution: Manny can make 4 book covers.



- Multiply and divide multi-digit numbers and find common factors and multiples
- Apply and extend previous understandings of numbers to the system of rational numbers

EXPRESSIONS AND EQUATIONS

- Apply and extend previous understandings of arithmetic to algebraic expressions

Examples:

- 7 more than 3 times a number (Solution: $3x+7$)
- 3 times the sum of a number and 5 (Solution: $3(x+5)$)
- 7 less than the product of 2 and a number (Solution: $2x-7$)
- Twice the difference between a number and 5 (Solution: $2(z-5)$)
- Evaluate $5(n+3)-7n$, when $n=\frac{1}{2}$.
- The expression c + 0.07c can be used to find the total cost of an item with 7% sales tax, where c is the pre-tax cost of the item. Use the expression to find the total cost of an item that cost $25.
- The perimeter of a parallelogram is found using the formula $p = 2l + 2w$. What is the perimeter of a rectangular picture frame with dimensions of 8.5 inches by 11 inches.

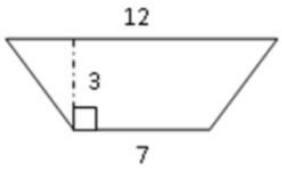
- Reason about and solve one-variable equations and inequalities
- Represent and analyze quantitative relationships between dependent and independent variables

GEOMETRY

- Solve real-world and mathematical problems involving area, surface area, and volume

Examples:

- Find the area of a triangle with a base length of three units and a height of four units.
- Find the area of the trapezoid shown below using the formulas for rectangles and triangles.



- A rectangle measures 3 inches by 4 inches. If the lengths of each side double, what is the effect on the area?
- The area of the rectangular school garden is 24 square units. The length of the garden is 8 units. What is the length of the fence needed to enclose the entire garden?
- The sixth grade class at Hernandez School is building a giant wooden H for their school. The H will be 10 feet tall and 10 feet wide and the thickness of the block letter will be 2.5 feet.
  - How large will the H be if measured in square feet?
  - The truck that will be used to bring the wood from the lumber yard to the school can only hold a piece of wood that is 60 inches by 60 inches. What pieces of wood (how many pieces and what dimensions) are needed to complete the project?

STATISTICS AND PROBABILITY

- Develop understanding of statistical variability
- Summarize and describe distributions

Example:

- Consider the data shown in the dot plot of the six trait scores for organization for a group of students.
  - How many students are represented in the data set?
  - What are the mean, median, and mode of the data set? What do these values mean? How do they compare?
  - What is the range of the data? What does this value mean?

Grade 5 Overview | Social Studies

Fifth grade history emphasizes American history from the earliest Native American cultures to the Civil War. The issues of exploration and rebellion are studied in more depth.

READING AND CRITICAL THINKING SKILLS

- Take notes with graphic organizers
- Find main ideas
- Sequence/categorize/organize information
- Analyze causes and effects/problems and solutions
- Compare and contrast
- Use context clues and supporting details
- Distinguish fact from opinion
- Making inferences and predictions
- Identify, use, and analyze primary and secondary sources
- Link past to present

GEOGRAPHIC LITERACY AND STATISTICAL ANALYSIS SKILLS

- Interpret/create maps, charts, tables, lists, graphs, diagrams, and statistics
- Use longitude and latitude, scale, elevation, and projection
- Connect ideas to geography and geographers' practices
- Analyzing political cartoons and images

RESEARCH, WRITING, AND PRESENTATION SKILLS

- Conduct research
- Construct responses to social studies/geography questions
- Create an oral presentation
- Learn to write/writing process
- Create outlines

Grade 5 Overview | Science

Fifth grade students begin to build foundational understanding of key topics in science.

THINK LIKE A SCIENTIST

- Use distance, mass, volume, and time to measure processes and outcomes
- Use the scientific method to conduct experiments and investigations

PHYSICAL SCIENCES

- Observe and measure the properties of matter
- Describe and explain how mixtures of solids can be separated
- Identify common items that dissolve in water
- Explain processes that will affect the rate of dissolution
- Explore atomic structure
- Extend understandings of energy transfer and transformation, forces and change in motion
- Understand balanced and unbalanced motion

LIFE SCIENCE

- Understand the organs of the human body
- Understand interdependence of organisms
- Understand adaptations
- Explore the diversity and evolution of living organisms
- Classify plants and animals

EARTH AND SPACE SCIENCES

- Understand the water cycle
- Understand about types of clouds
- Understand weather conditions and types of precipitation
- Understand the components of our galaxy
- Understand the characteristics of the inner and outer planets
- Understand the composition of our solar system
- Distinguish among objects in the solar system
- Relate that the rotation of Earth and apparent movements of the Sun, Moon, and stars are connected