Grade 4 Math

Algebraic Thinking and Operations with Whole Numbers
- Use the four operations with whole numbers to solve problems with whole numbers
- Become familiar with factors and multiples within 100
- Generate and analyze mathematical patterns

Number and Operations
- Generalize place value understanding for multi-digit whole numbers
- Understand that the digit in one place is 10 times what it would be in the place to the right
- Read and write multi-digit numerals
- Write numbers in expanded form to show place value of each digit (Example: 26,825 = 20,000 + 6,000 + 800 + 20 + 5)
- Round multi-digit numerals to any place
- Compare the values of numbers using the symbols <, >, and =
- Use understanding of place value and properties of operations to perform multi-digit arithmetic problems

Geometry and Spatial Relationships
- Draw, identify, and define points, lines, line segments, rays, and angles
- Draw, recognize, and define parallel and nonparallel lines
- Classify shapes by properties of their lines and angles
- Identify different kinds of triangles; recognize right triangles
- Recognize and define lines of symmetry

Fractions and Operations
- Compare and order numbers with different numerators and denominators
- Build fractions from unit fractions
- Decompose a fraction into a sum of fractions with the same denominator
- Add and subtract mixed fractional numbers with like denominators
- Multiply fractions by whole numbers
- Solve word problems involving addition and subtraction of fractions
- Create visual models to represent and solve problems with fractions
- Express a fraction with denominator of 10 as an equivalent fraction with denominator of 100
- Use decimal notation for fractions with denominators 10 or 100
- Compare decimals to one hundredth

Measurement and Data
- Know relative sizes of units in metric and English systems
- Convert units to larger and smaller units
- Solve word problems with time, distance, masses of objects, money, and temperature
- Use formulas to find area and perimeter of rectangles
- Solve real-world problems involving measurement and conversion of measurements from a larger unit to a smaller unit
- Represent and interpret data
- Make a line plot to show data in fractions of units
- Understand that a circle has 360 degrees
- Use a protractor to measure and draw angles in whole-number degrees
- Understand and show angle measure as additive
• Categorize shapes by their attributes
• Partition shapes into equal areas, describing each part as a unit fraction of the whole (for a shape partitioned into 6 parts with equal area, each part is 1/6 of the whole)

**Numbers and Operations**
- Understand and use place value to 1,000
- Round numbers to the nearest 10 or 100
- Add and subtract within 1,000 using place value understandings
- Multiply one-digit whole numbers by multiples of 10

**Grade 4 Language Arts**

**Foundational Skills**
- Apply grade-level phonics and word analysis skills in reading unfamiliar words
- Read grade-level texts with purpose and understanding
- Orally read grade-level texts with accuracy, expression, and appropriate rate
- Confirm and self-correct words during oral reading

**English Language Skills**
- Identify parts of speech and their functions in specific sentences
- Use relative pronouns, progressive verb tenses, and prepositional phrases
- Form and use possessive nouns
- Produce complete sentences; correct incomplete or run-on sentences
- Correctly use words that are frequently confused
- Use conventions of English when writing (capitalization, punctuation, and spelling)
- Punctuate dialogue correctly
- Spell grade-level words correctly
- Consult reference materials to check spellings
- Correctly use the English language when speaking, reading, or writing
- Know the difference between formal and informal English and when to use each

**Reading Literature and Informational Text**
- Identify main topic, idea, or argument in grade-level text
- Show understanding of key details in a text
- Identify text evidence to support the author’s message or reader’s responses
- Retell stories, including tales from diverse cultures
- Describe main message, lesson, or moral from stories or other texts
- Describe characters in a story and how their actions contribute to the plot
- Determine meanings of words or phrases as used in a text
- Describe effects and uses of words and phrases in passages
- Describe overall structure of a passage and its effect on the message
- Describe how parts of a story, poem, or drama build on other parts
- Use features in the text and Internet search tools to locate relevant information
- Explain connections between a series of events, ideas, concepts, or steps in a text
- Explain differences between an author’s point of view and their own
- Explain how visual images and graphics contribute to and clarify a text
- Combine information from two texts on the same topic
- By the end of the academic year, read and understand grade-level literary and informational texts at grade level independently and with proficiency

**Speaking and Listening**
- Express ideas and feelings clearly
- Speak clearly and audibly in sensible sentences
- Describe people, places, things, and events with relevant details
- Add visual components to a speech to clarify ideas, feelings, and thoughts
- Create audio recordings of stories or poems
• Describe people, places, things, and events with relevant details
• Give and follow directions
• Participate in conversations with diverse partners and groups
• Follow agreed-upon rules for discussions
• Listen and respond to others with focus and care
• Ask and answer questions about key details heard in an oral or visual presentation
• Present a report or tell a story with appropriate facts, relevant details

Vocabulary
• Use context clues to determine word and phrase meanings
• Use word structure clues to determine word meanings
• Use synonyms and antonyms to clarify and explain word meanings
• Use dictionaries and glossaries (print and digital) to determine or clarify word meaning
• Understand and use figurative language (similes, metaphors, idioms, adages, proverbs, etc.)
• Distinguish literal and nonliteral meanings of words in context
• Distinguish shades of meaning among related words
• Learn and use grade-level general academic vocabulary

Writing
• Write opinion, informative, or explanatory pieces that state a topic or purpose, supplying relevant facts and reasons, and presenting a conclusion
• Write stories that include details, put events in order, and provide a conclusion
• Make improvements and needed changes to written work
• Use transitional words and phrases to connect ideas
• Add dialogue and descriptions to develop characters and events
• Use tools, including digital tools, to produce and publish writing
• Take part in shared research and writing projects
• Gather information from various sources to answer a question
• Create written and visual works to summarize and share information
• Conduct short research tasks on a topic through investigation
• Gather information from print and digital sources and take notes
• Write regularly for a variety of tasks, purposes, and audiences

Grade 4 Science

Life Science
• Plant manufacture of food
• Populations of organisms
• Food chains and food webs
• Plant and animal structures that support growth, reproduction, and behavior
• Plant and animal relationships in an ecosystem
• Human interaction with the environment
• Animal structures specialized to take in and process information

Earth and Space Science
• Earth history
• Earth changes through plate tectonics (earthquake and volcano activity)
• Rock evidence of Earth changes due to forces
• Locations of earthquake and volcano activity
• Earth changes through physical and chemical weathering
• Natural resources and their importance and uses
• How living things affect the physical characteristics of their region
• Hazards that result from natural processes or extreme natural events
Physical Science
- Definitions of energy
- Movement and transfer of energy
- Law of Conservation of Energy
- Conductors and insulators
- Relationship between energy and forces
- Energy in chemical processes
- Electrical circuits
- Energy and fuels from natural resources
- Magnets and magnetic forces
- Electricity and magnetism; electromagnetic radiation
- Safe use of electricity
- Wave properties and motions
- Transfer of digitized information
- Properties of water
- Changes in state of matter (evaporation, melting, condensation, freezing)
- Water cycle
- Floating and sinking

Grade 4 Social Science

Geography
- Comparative locations and features of the state (or province, territory) in relation to the United States (or home country) and world
- Location of one’s home in relation to other cities and features in the state (or province, territory)
- State’s (or province's, territory's) location using latitude and longitude grid
- State’s (or province's, territory's) borders and neighbors
- Physical features, vegetation, and climate
- Major cities and other human-made or cultural features
- Studying and comparing a variety of maps of the state (or province, territory and region
- Creating maps of physical features of state (or province, territory) and key cities
- The state’s (or province’s, territory's) natural resources
- Patterns of past and present settlements and population distribution
- Geographic factors influencing settlement and population
- Ways the land has provided for and continues to provide for needs
- Locations of key events in state (or provincial, territorial) history
- Relationship between humans and the environment in the state (or province, territory)

Citizenship and Government
- Rights and responsibilities of citizens in state (or province, territory)
- State (or provincial, territorial) and patriotic symbols, traditions, and celebrations
- Key officials and offices in state (or province, territory) and local area
- Key elements of the state (or provincial, territorial) constitution
- Structure of state (or provincial, territorial) government
- Responsibilities of state (or provincial, territorial) governments
- State (or provincial, territorial) or regional issues

Community and Culture
- Cultural groups that make up one’s own state (or province, territory)
- Immigration in the state (or province, territory) and cultural diffusion
- Contributions of different cultural groups in the state (or province, territory)
- Key cultural and social changes in the state (or province, territory)
Economics
- Economic activities and changes over time in the state (or province, territory)
- Businesses and industries in the state (or province, territory)
- State (or provincial, territorial) resources, physical and human
- Relationships between geography and the state (or provincial, territorial) economy
- Creating maps of products or resources
- Trade, exports, and imports
- Economic issues in the state (or province, territory)
- Economic choices in the state (or province, territory)

History
- Early settlements
- Path to status as state (or province, territory) and establishment of government
- Structure and key concepts of state (or provincial, territorial) constitution
- Peoples and groups who settled the state (or province, territory)
- Key events, developments, and decisions in state (or provincial, territorial) history
- Key people in state (or provincial, territorial) history
- Key issues in state (or provincial, territorial) history
- Effects of nationwide or regional events on the state (or province, territory) --American revolution, westward movement, nation-wide or regional conflicts, industrialization, slavery, environmental decisions, national security, the war on terror, etc. (U.S.A.)
- Ways technology changes affected state (or provincial, territorial) development, communication, and transportation

Grade 4 Health and Safety
- Health choices and consequences of choices
- Benefits of health (including healthy eating, exercise, stress-management, adequate sleep, social and emotional health, disease prevention, and avoidance of accidents and dangers)
- Personal responsibility for fitness, stress management, health, and safety
- Influences of peers, media, family, and cultural pressure on physical, emotional, and social health
- Major body systems and their functions
- Nutrients and benefits of nutrients to the body
- Aerobic and anaerobic exercise (contingent on any physical or other limitations)
- Prevention and transmission of disease by individual behaviors
- Communicable and noncommunicable diseases
- Ways body defends itself against germs
- Basic safety rules for daily and recreational activities
- Skills to identify, avoid, and cope with potentially dangerous situations
- Practices for responding to emergencies
- Identify safe behaviors around strangers
- Use, abuse, and effects of medications, tobacco, alcohol, and other substances
- Ways to avoid use of illegal drugs and other harmful substances
- Positive and negative characteristics of social groups gangs, clubs, cliques
- Reporting and getting help in unsafe situations
- Reasons and ways to avoid violence, gangs, and weapons
- Development of self-confidence and self-esteem
- Respect and consideration for all individuals
- Healthy ways of getting attention
- Healthy ways of responding to disrespectful behavior
- Self-control and appropriate ways to express emotions
- Positive social interactions with peers, in home, and in the community
- Bullying, alternative behaviors to bullying, and appropriate responses to bullying
- Strategies for resolving conflicts with peers and others
• Skills for meeting people, making friends, and being a good friend
• Getting personal support from family
• How and where to get help in making health decisions

Grade 4 Arts

• Perform and create artistic movements and patterns
• Understand the physical processes and discipline associated with dance
• Identify melody, rhythm, harmony, and timbre in musical selections
• Respond to sounds and sound patterns with body movements
• Improvise music with classroom instruments
• Listen, describe, and respond to a variety of music
• Read and write patterns with musical notes and rhythmic notation
• Read, write, and perform diatonic scales
• Identify some common musical instruments by sight and sound
• Identify and sing a variety of kinds of music and musical forms
• Improvise dramatizations of stories or ideas
• Take part in writing scripts, designing sets, and performing group dramas
• Create costumes and props for a performance
• Observe patterns in nature and works of art
• Identify and describe elements in works of visual art (line, color, texture, shapes/form, space, value, etc.)
• Create original works of visual art in various media and dimensions
• Express observations, ideas, or feelings through music, drama, or visual art
• Identify and discuss some well-known works of dance, drama, music, or visual arts and some artists, actors, writers, musicians, choreographers, or composers
• Describe and analyze a variety of works of art according to their elements
• Learn and use vocabulary of dance, music, drama, and visual arts
• Describe techniques for a given form of art
• Compare and contrast two works of art
• Identify purposes, effects, and influences of art
• Understand how culture affects art and how art reflects culture
• Demonstrate appropriate audience skills for live artistic performances

Grade 4 Technology

• Concepts, characteristics, and real-life uses of technology
• Knowing parts of technology devices and systems devices
• Developing advanced keyboard skills
• Exploring virtual environments, simulations, programs, models, and applications
• Effective use of available grade-level technology
• Use of tools to produce creative original works
• Use of tools to interact and exchange ideas with peers, teacher, parents, or other students
• Use of tools and devices to develop cultural understanding
• Use of Internet to find, use, summarize, and evaluate information
• Planning and completing a research project to solve a problem or answer a question
• Understand negative uses of technology and ways to avoid them
• Participation in group collaborative interactive projects and activities
• Developing, printing, and publishing in print and digital
• Evaluating content, applications, and programs
• Digital citizenship and etiquette
• Positive attitudes toward technology for learning
• Demonstrating openness to learning and using new technologies
• Legal use, fair use guidelines, and copyrights
• Procedures for safe online behavior, including use of social media
• Responsible care of digital equipment