



**C Teaching &  
Learning  
Standards**

**4th  
GRADE**



Cherokee  
County  
School  
District

**ELA | Math | Science | Social Studies**

### Year Long English Language Arts Standards:

#### Reading Foundational

- RF3:** Know and apply grade-level phonics and word analysis skills in decoding words.
- RF4:** Read with sufficient accuracy and fluency to support comprehension.

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#### Writing

- W4:** Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in Standards 1–3 above.)
- W5:** With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grade 4.)
- W6:** With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of one page in a single sitting.
- W7:** Conduct short research projects that build knowledge through investigation of different aspects of a topic.
- W8:** Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.

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#### Language

- L2a:** Use correct capitalization.
- L2b:** Use commas and quotation marks to mark direct speech and quotations from a text.
- L2c:** Use a comma before a coordinating conjunction in a compound sentence.
- L2d:** Spell grade-appropriate words correctly, consulting references as needed.
- L3c:** Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate (e.g., small-group discussion).
- L4a:** Use context (e.g., definitions, examples, or restatements in text) as a clue to the meaning of a word or phrase.
- L4b:** Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., telegraph, photograph, autograph).

# 4th Grade

## English Language Arts

- L4c:** Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation and determine or clarify the precise meaning of key words and phrases.
  - L5c:** Demonstrate understanding of words by relating them to their opposites(antonyms) and to words with similar but not identical meanings(synonyms).
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### Speaking and Listening

- SL1:** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.
- SL2:** Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
- SL3:** Identify the reasons and evidence a speaker provides to support particular points.
- SL4:** 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.
- SL6:** Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate (e.g., small-group discussion); use formal English when appropriate to task and situation. (See grade 4 Language standard 1 for specific expectations.)

# 4th Grade

## English Language Arts

### Semester 1 (August – December)

#### Unit A – Informational (8-9 Weeks)

##### Overarching Standards for Unit A

##### Reading Informational

- RI5:** Describe the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text.
- RI9:** Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.

##### Writing

- W2b:** Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.
- W9b:** Apply grade 4 Reading standards to informational texts (e.g., “Explain how an author uses reasons and evidence to support particular points in a text”).

##### Language

- L3a:** Choose words and phrases to convey ideas precisely.
- L3b:** Choose punctuation for effect.

##### Speaking and Listening

- SL5:** Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.

##### Supporting Standards for Unit A

##### Reading Informational

- RI1:** Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
- RI2:** Determine the main idea of a text and explain how it is supported by key details; summarize the text.
- RI3:** 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.

- RI4:** Determine the meaning of general academic language and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.
- RI5:** Describe the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text.
- RI6:** Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided.
- RI7:** Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.
- RI8:** Explain how an author uses reasons and evidence to support particular points in a text.

### Writing

- W2a:** Introduce a topic clearly and group related information in paragraphs and sections; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension.
- W2c:** Link ideas within categories of information using words and phrases. (e.g., another, for example, also, because).
- W2d:** Use precise language and domain-specific vocabulary to inform about or explain the topic.
- W2e:** Provide a concluding statement or section related to the information or explanation presented.

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### Unit B – Narrative (8-9 Weeks)

#### Overarching Standards for Unit B

#### Reading Literary

- RL2:** Determine a theme of a story, drama, or poem from details in the text; summarize the text.
- RL6:** Compare and contrast the point of view from which different stories are narrated, including the difference between first- and third-person narrations.
- RL9:** Compare and contrast the treatment of similar themes and topics (e.g., opposition of good and evil) and patterns of events (e.g., the quest) in stories, myths, and traditional literature from different cultures.

# 4th Grade

## English Language Arts

### Writing

- W3b:** Use dialogue and description to develop experiences and events or show the responses of characters to situations.
- W3c:** Use a variety of transitional words and phrases to manage the sequence of events.
- W3d:** Use concrete words and phrases and sensory details to convey experiences and events precisely.
- W9a:** Apply grade 4 Reading standards to literature (e.g., “Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text [e.g., a character’s thoughts, words, or actions].”)

### Language

- L1b:** Form and use the perfect (e.g., I had walked; I have walked; I will have walked) verb aspects.
- L1e:** Use correlative conjunctions (e.g., either/or, neither/nor)

### Speaking and Listening

- SL5:** Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.

### Supporting Standards for Unit B

#### Reading Literary

- RL1:** Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
- RL3:** Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character’s thoughts, words, or actions).
- RL4:** Determine the meaning of words and phrases as they are used in a text, including those that allude to significant characters found in mythology (e.g., Herculean).
- RL5:** Explain major differences between poems, drama, and prose, and refer to the structural elements of poems (e.g., verse, rhythm, meter) and drama (e.g., casts of characters, settings, descriptions, dialogue, stage directions) when writing or speaking about a text.
- RL7:** Make connections between the text of a story or drama and a visual or oral presentation of the text identifying similarities and differences.

# 4th Grade

## English Language Arts

### Writing

- W3a:** Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally.
- W3e:** Provide a conclusion that follows from the narrated experiences or events.

### Language

- L1c:** Use helping/linking verbs to convey various conditions.
- L1d:** Order adjectives within sentences according to conventional patterns (e.g., a small red bag rather than a red small bag).

### Speaking and Listening

- SL5:** Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.
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# 4th Grade

## English Language Arts

### Semester 2 (January – May)

#### Unit C – Opinion (8-9 Weeks)

##### Overarching Standards for Unit C

##### Reading Informational

- RI2:** Determine the main idea of a text and explain how it is supported by key details; summarize the text.
- RI9:** Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.

##### Writing

- W1b:** Provide reasons that are supported by facts and details.
- W1c:** Link opinion and reasons using words and phrases (e.g., for instance, in order to, in addition).
- W9b:** Apply grade 4 Reading standards to informational texts (e.g., “Explain how an author uses reasons and evidence to support particular points in a text”).

##### Language

- L1f:** Produce complete sentences, recognizing and correcting inappropriate fragments and run-ons.
- L1g:** Correctly use frequently confused words (e.g., to, too, two; there, their).

##### Supporting Standards for Unit C

##### Reading Informational

- RI1:** Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
- RI3:** 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.
- RI4:** Determine the meaning of general academic language and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.
- RI5:** Describe the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text.



**RI7:** Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.

**RI8:** Explain how an author uses reasons and evidence to support particular points in a text.

### Writing

**W1a:** Introduce a topic or text clearly, state an opinion, and create an organizational structure in which related ideas are grouped to support the writer's purpose.

**W1d:** Provide a concluding statement or section related to the opinion presented.

### Language

**L1a:** Use relative pronouns (who, whose, whom, which, that) and relative adverbs (where, when, why).

### Speaking and Listening

**SL5:** Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.

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## Unit D – Informational (8-9 Weeks)

### Overarching Standards for Unit D

#### Reading Informational

**RI6:** Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided.

**RI9:** Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.

#### Writing

**W2b:** Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.

**W9b:** Apply grade 4 Reading standards to informational texts (e.g., “Explain how an author uses reasons and evidence to support particular points in a text”).

#### Language

**L3a:** Choose words and phrases to convey ideas precisely.

**L3b:** Choose punctuation for effect.

### Speaking and Listening

**SL5:** Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.

### Supporting Standards for Unit D

#### Reading Informational

- RI1:** Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
- RI2:** Determine the main idea of a text and explain how it is supported by key details; summarize the text.
- RI3:** 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.
- RI4:** Determine the meaning of general academic language and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.
- RI5:** Describe the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text.
- RI7:** Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.
- RI8:** Explain how an author uses reasons and evidence to support particular points in a text.

#### Writing

- W2a:** Introduce a topic clearly and group related information in paragraphs and sections; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension.
- W2c:** Link ideas within categories of information using words and phrases. (e.g., another, for example, also, because).
- W2d:** Use precise language and domain-specific vocabulary to inform about or explain the topic.
- W2e:** Provide a concluding statement or section related to the information or explanation presented.

### Year Long Mathematical Practices (MP):

Display perseverance and patience in problem-solving. Demonstrate skills and strategies needed to succeed in mathematics, including critical thinking, reasoning, and effective collaboration, and expression. Seek help and apply feedback. Set and monitor goals.

**MP.1** – Make sense of problems and persevere in solving them.

**MP.2** – Reason abstractly and quantitatively

**MP.3** – Construct viable arguments and critique reasoning of others.

**MP.4** – Model with mathematics.

**MP.5** – Use appropriate tools strategically.

**MP.6** – Attend to precision.

**MP.7** – Look for and make use of structure.

**MP.8** – Look for and express regularity in repeated reasoning.

### Unit 1 – Making Relevant Connections with Place Value – Understanding Addition & Subtraction of Whole Numbers (4-5 weeks)

In Unit 1, students build on their understanding to add, subtract, and round numbers within 100,000. This unit also incorporates problem solving with money, intervals of time, and metric measurements for liquid volume, distance, and weight. Students will also engage in the framework for statistical reasoning to ask and answer questions in order to solve problems.

#### Overarching Standards for Unit 1

- NR.1:** Recognize patterns within the base ten place value system with quantities presented in real-life situations up to 100,000 to compare and round multi-digit whole numbers through the hundred-thousands place.
- NR.2:** Using part-whole strategies, solve problems involving addition and subtraction through the hundred-thousands place, as well as multiplication and division of multi-digit whole numbers presented in real-life, mathematical situations.
- MDR.6:** Measure time and objects that exist in the world to solve real-life, mathematical problems and analyze graphical displays of data to answer relevant questions.

#### Standards for Student Mastery for Unit 1

- NR.1.1:** Read and write multi-digit whole numbers to the hundred-thousands place using base-ten numerals and expanded form.
- NR.1.2:** Recognize and show that a digit in one place has a value ten times greater than what it represents in the place to its right. Extend this understanding to determine the value of a digit when it is shifted to the left or right, based on the relationship between multiplication and division using real-world problems involving metric measurements for context.
- NR.1.3:** Use place value reasoning to represent, compare, and order multi-digit whole numbers to 100,000 using  $>$ ,  $=$ , and  $<$  symbols to record the results of comparisons.
- NR.1.4:** Use place value understanding to round multi-digit whole number to 100,000.
- NR.2.1:** Add and subtract multi-digit numbers fluently to solve real-life, mathematical problems involving the metric system using place value understanding, properties of operations, and relationships between operations.
- NR.2.5:** Solve multi-step problems using addition, subtraction, multiplication, and division involving whole numbers. Use mental computation and estimation strategies to justify the reasonableness of solutions.
- MDR.6.2:** Ask questions involving real-life situations with numbers up to 100,000 and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life.

### Unit 2 – Exploring Real-life Phenomena through Patterning & Algebraic Reasoning (4-5 weeks)

Previously, students have explored growing and repeating patterns of 1s, 5s, 10s, 25s, 100s and shapes, as well as patterns in addition, subtraction, multiplication, and division. In this unit, students will be building on this understanding to generate number and shape patterns that follow a rule, as well as exploring factor pairs and prime and composite numbers.

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### Overarching Standards for Unit 2

- PAR.3:** Generate and analyze patterns, including those involving shapes, input/output diagrams, factors, multiples, prime numbers, and composite numbers.
- MDR.6:** Measure time and objects that exist in the world to solve real-life, mathematical problems and analyze graphical displays of data to answer relevant questions.

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### Standards for Student Mastery for Unit 2

- PAR.3.1:** Given a mathematical rule (+, -,  $\times$ ,  $\div$ ) create both number and shape patterns that follow the rule.
- PAR.3.2:** Use input-output rules, tables, and charts to represent and describe patterns, find relationships, and solve problems.
- PAR.3.3:** Find factor pairs in the range 1–100. Find multiples of single-digit numbers up to 100.
- PAR.3.4:** Identify composite numbers and prime numbers. Explain the relationship between them.
- MDR.6.2:** Ask questions about time and interval patterns related to time in real-world situations. Answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life.

Previously students were multiplying and dividing numbers within 100 by multiples of 10. In Unit 3, students build on this understanding by multiplying multi-digit numbers by a one-digit number or two two-digit numbers. Students will also divide four-digit numbers with one-digit divisors. This unit also incorporates solving real-world problem involving money, intervals of time, and metric measurements for liquid volume, distance, and weight.

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### Overarching Standards for Unit 3

- NR.2:** Using part-whole strategies, solve problems involving addition and subtraction through the hundred-thousands place, as well as multiplication and division of multi-digit whole numbers presented in real-life, mathematical situations.
- MDR.6:** Measure time and objects that exist in the world to solve real-life, mathematical problems and analyze graphical displays of data to answer relevant questions.

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### Standards for Student Mastery for Unit 3

- NR.2.2:** Use multiplicative comparisons to interpret, model, and solve problems. For example, Lucas's wood board is 5 times the length of Ryan's board. If Ryan's wooden board is 3 feet, how long is Lucas's wooden board?
- NR.2.3:** Solve real-life problems involving multiplication of a number with up to four digits by a 1-digit whole number or involving multiplication of 2 two-digit numbers using strategies based on place value and the properties of operations. Use equations, rectangular arrays and/or area models to illustrate and explain the calculation.
- NR.2.4:** Solve real-life division problems involving up to 4-digit dividends and 1-digit divisors (including whole number quotients with remainders) using strategies based on place-value understanding, properties of operations, and the relationships between operations.
- NR.2.5:** Solve multi-step problems using addition, subtraction, multiplication, and division involving whole numbers. Use mental computation and estimation strategies to justify the reasonableness of solutions.
- MDR.6.1:** Use the four operations to solve problems involving elapsed time to the nearest minute, intervals of time, metric measurements of liquid volumes, lengths, distances, and masses of objects. Include problems involving fractions with like denominators (2, 3, 4, 5, 6, 8, 10, 12, 100) and problems where measurements are given in a larger unit in terms of a smaller unit, or as a smaller unit in terms of a larger unit.

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### Unit 4 – Investigating Fractions and Decimals (7-8 weeks)

Previously students have partitioned shapes into halves, thirds, quarters (fourths), determined equivalences for simple fractions, and identifying and comparing fractional parts. In this unit, students will be building on this understanding to compare fractions less than 1, add and subtract fractions with like denominators, and measure to the nearest  $\frac{1}{8}$  of an inch.

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### Overarching Standards for Unit 4

**NR.4:** Solve real-life problems involving addition, subtraction, equivalence, and comparison of fractions with denominators of 2, 3, 4, 5, 6, 8, 10, 12, and 100 using part-whole strategies and visual models.

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### Standards for Student Mastery for Unit 4

**NR.4.1:** Using concrete materials, drawings, and number lines, demonstrate and explain the relationship between equivalent fractions, including fractions greater than one. Explain the identity property of multiplication as it relates to equivalent fractions. Generate equivalent fractions using these relationships.

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**NR.4.2:** Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole.

**NR.4.3:** Compare two fractions with different numerators and/or different denominators by using a variety of tools and strategies. Recognize that comparisons are valid only when the two fractions refer to the same whole.

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**NR.4.4:** Represent whole numbers and fractions as the sum of unit fractions.

**NR.4.5:** Write an equation to represent a fraction as a sum of fractions with the same denominator in more than one way.

**NR.4.6:** Add and subtract fractions and mixed numbers with like denominators using a variety of tools.

### Unit 4 – Investigating Fractions and Decimals Continued (4-5 weeks)

Previously students have partitioned shapes into halves, thirds, quarters (fourths), determined equivalences for simple fractions, and identified and compared fractional parts. In this unit, students will be building on this understanding to compare fractions less than 1, add and subtract fractions with like denominators, and measure to the nearest  $\frac{1}{8}$  of an inch.

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#### Overarching Standards for Unit 4

- NR.5:** Solve real-life problems involving addition, equivalence, comparison of fractions with denominators of 10 and 100, and comparison of decimal numbers as tenths and hundredths using part-whole strategies and visual models.
- MDR.6:** Measure time and objects that exist in the world to solve real-life, mathematical problems and analyze graphical displays of data to answer relevant questions.

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#### Standards for Student Mastery for Unit 4

- NR.5.1:** Demonstrate to explain the concept of equivalent fractions with denominators of 10 and 100, using concrete materials and visual models. Add two fractions with denominators of 10 and 100.
- NR.5.2:** Represent, read, and write fractions with denominators of 10 or 100 as a decimal. Represent decimal numbers to the hundredths place as fractions, using concrete materials and drawings.
- NR.5.3:** Compare two decimal numbers to the hundredths place by reasoning about their size. Record the results of comparisons with the symbols  $>$ ,  $=$ , or  $<$ .
- MDR.6.1:** Use the four operations to solve problems involving elapsed time to the nearest minute, intervals of time, metric measurements of liquid volumes, lengths, distances, and masses of objects. Include problems involving fractions with like denominators (2, 3, 4, 5, 6, 8, 10, 12, 100) and problems where measurements are given in a larger unit in terms of a smaller unit, or as a smaller unit in terms of a larger unit.
- MDR.6.2:** Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life.
- MDR.6.3:** Create dot plots to display a distribution of numerical (quantitative) measurement data.

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### Unit 5 – Building Conceptual Understanding of Angle Measurement (3-4 weeks)



Previously students have learned that a right angle is a square corner, and that an acute angle is smaller than a right angle and an obtuse angle is larger than a right angle. In 4th grade, students will be introduced to the idea of degrees using a 360° protractor. They will begin measuring and exploring angles as an attribute to shapes.

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### Overarching Standards for Unit 5

<b>GSR.7:</b> Investigate the concepts of angles and angle measurement to estimate and measure angles.
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### Standards for Student Mastery for Unit 5

**GSR.7.1:** Recognize angles as geometric shapes formed when two rays share a common endpoint. Draw right, acute, and obtuse angles.

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**GSR.7.2:** Measure angles in reference to a circle with the center at the common endpoint of two rays. Determine an angle's measure in relation to the 360 degrees in a circle through division or as a missing factor problem.

Previously students have explored and sorted 2-D and 3-D shapes and their attributes. They investigated various attributes of quadrilaterals such as perpendicular and parallel lines segments and lines of symmetry. In this unit, students will explore the many attributes of two-dimensional shapes, as well as solve problems involving area and perimeter.

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### Overarching Standards for Unit 6

**GSR.8:** Identify and draw geometric objects, classify polygons based on properties, and solve problems involving area and perimeter of rectangular figures.

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### Standards for Student Mastery for Unit 6

**GSR.8.1:** Explore, investigate, and draw points, lines, line segments, rays, angles (right, acute, obtuse), perpendicular lines, parallel lines, and lines of symmetry. Identify these in two-dimensional figures.

**GSR.8.2:** Classify, compare, and contrast polygons based on lines of symmetry, the presence or absence of parallel or perpendicular line segments, or the presence or absence of angles of a specified size and based on side lengths.

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**GSR.8.3:** Solve problems involving area and perimeter of composite rectangles involving whole numbers with known side lengths.

The capstone unit applies content that has already been learned in previous interdisciplinary PBLs and units throughout the school year. The capstone unit is an interdisciplinary unit that allows students to create a presentation, report, or demonstration that could include their models used to answer an overarching driving question. (e.g., Students can present their solution(s), findings, project, or answer to the driving question to a larger audience during the culminating capstone unit.)

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### Overarching Standards for Unit 7

- NR.1:** Recognize patterns within the base ten place value system with quantities presented in real-life situations to compare and round multi-digit whole numbers through the hundred-thousands place.
- NR.2:** Using part-whole strategies, solve problems involving addition and subtraction through the hundred-thousands place, as well as multiplication and division of multi-digit whole numbers presented in real-life, mathematical situations.
- NR.4:** Solve real-life problems involving addition, subtraction, equivalence, and comparison of fractions with denominators of 2, 3, 4, 5, 6, 8, 10, 12, and 100 using part-whole strategies and visual models.
- NR.5:** Solve real-life problems involving addition, equivalence, comparison of fractions with denominators of 10 and 100, and comparison of decimal numbers as tenths and hundredths using part-whole strategies and visual models.
- MDR.6:** Measure time and objects that exist in the world to solve real-life, mathematical problems and analyze graphical displays of data to answer relevant questions.
- PAR.3:** Generate and analyze patterns, including those involving shapes, input/output diagrams, factors, multiples, prime numbers, and composite numbers.
- GSR.7:** Investigate the concepts of angles and angle measurement to estimate and measure angles.
- GSR.8:** Identify and draw geometric objects, classify polygons based on properties, and solve problems involving area and perimeter of rectangular figures.

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### Standards for Student Mastery for Unit 7

ALL associated learning objectives.

### Course Description

The Fourth Grade Cherokee Teaching & Learning Standards for Science engage students in constructing meaningful models that allow them to gain understanding of the natural world. They speculate about observations they make. They add, subtract, multiply and divide whole numbers on paper, mentally, and with calculators. Fourth graders gather and interpret data and use records, tables, or graphs to identify patterns of change. They write instructions and make sketches that allow others to carry out a scientific investigation. They determine whether a comparison is fair if conditions are different for each thing being compared. They question claims or statements made by people outside their field of expertise. The students will use these skills to compare and contrast the physical attributes of stars and planets, model the effects of the relative motion of the Earth and moon around the sun, use weather charts/maps to predict weather events, conduct investigations about the water cycle and understand their relationship with heat energy, communicate information about the nature of light and sound, study the effects of balanced and unbalanced forces on an object, and describe the flow of energy in an ecosystem and the roles organisms play in a community.

Science standards integrate the three dimensions of **Science and Engineering Practices (SEPs)**, **Crosscutting Concepts (CCCs)**, and **Disciplinary Core Ideas (DCIs)** to provide a comprehensive framework that emphasizes active engagement, interdisciplinary connections, and core scientific principles. Together, they show how science standards engage *students* in obtaining, evaluating, and communicating information.

Science and Engineering Practices	Crosscutting Concepts	Disciplinary Core Ideas
Asking Questions (Science) and Defining Problems (Engineering)	Patterns	Engineering, Technology, and the Application of Science (TLS)
Developing and Using Models	Cause and Effect: Mechanism and Explanation	
Planning and Carrying Out Investigations	Scale, Proportion, and Quantity	Physical Science (P)
Analyzing and Interpreting Data	Systems and System Models	
Mathematics and Computational Thinking	Energy and Matter: Flows, Cycles, and Conservation	Life Science (L)
Constructing Explanations (Science) and Designing Solutions (Engineering)		
Engaging in Argument from Evidence	Structure and Function	Earth and Space Science (E)
Obtaining, Evaluating, and Communicating Information	Stability and Change	

**Science and Engineering Practices** are fundamental approaches that scientists and engineers use to investigate the natural world and solve practical problems. **Crosscutting Concepts** in science are overarching themes that bridge various disciplines, helping students and researchers see connections and deepen their understanding of the natural world. **Disciplinary Core Ideas** are fundamental concepts that students need to understand to develop a deep knowledge of science across various disciplines.

### Semester 1 (August – December)

#### **Unit 0: Thinking Like a Scientist (1 week)**

This unit aims to immerse fourth-grade students in the process of scientific inquiry, focusing on developing intermediate scientific thinking skills. Students will learn to design experiments, analyze data, and draw evidence-based conclusions. Throughout the unit, students will use more complex scientific vocabulary, formulate hypotheses, conduct controlled experiments, utilize a range of tools and technology to gather and analyze data, and effectively communicate their results and conclusions. Thinking Like a Scientist standards should continue to be embedded and developed throughout the course across the entire school year.

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#### **Overarching Standard for Unit 0**

**TLS3-5: Develop intermediate scientific thinking skills by designing experiences, analyzing data, and drawing evidence-based conclusions.**

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#### **Supporting Standards for Student Mastery in Unit 0**

**TLS3-5.a:** Use more complex scientific vocabulary such as data, claim, hypothesis, analyze, variables, and justification.

**TLS3-5.b:** Formulate hypotheses and conduct controlled experiments.

**TLS3-5.c:** Use a range of tools and technology to gather and analyze data.

**TLS3-5.d:** Communicate results and conclusions effectively, using various formats (e.g., reports, presentations, argument boards).

## Unit 1: Ecosystems (6 weeks)

In this unit, students will model ecosystem roles and energy flow, design scenarios to investigate ecosystem changes, and use data to analyze and predict energy flow changes. Students will investigate ecosystem dynamics and examine the impact of changes to energy flow within an ecosystem.

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### Overarching Standard for Unit 1

**L1: Obtain, evaluate, and communicate information about the roles of organisms and the flow of energy within an ecosystem.**

**L1.d:** Use printed and digital data to develop a model illustrating and describing changes to the flow of energy in an ecosystem when plants or animals become scarce, extinct, or overabundant.

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### Supporting Standards for Student Mastery in Unit 1

**L1.a:** Develop a model to describe the roles of producers, consumers, and decomposers in a community.

*(Clarification statement:* Students are not expected to identify the different types of consumers – herbivores, carnivores, omnivores, and scavengers.)

**L1.b:** Develop simple models to illustrate the flow of energy through a food web/food chain beginning with sunlight and including producers, consumers, and decomposers.

**L1.c:** Design a scenario to demonstrate the effect of a change on an ecosystem.

*(Clarification statement:* Include living and non-living factors in the scenario.)

### Unit 2A: Weather: Water Cycle (4 weeks)

In this unit, students will plan and conduct investigations to observe state changes in water and understand the energy involved in different pathways water may take during the water cycle.

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#### Overarching Standard for Unit 2A

**E3: Obtain, evaluate, and communicate information to demonstrate the water cycle.**

**E3.b:** Develop models to illustrate multiple pathways water may take during the water cycle (evaporation, condensation, and precipitation).

*(Clarification statement: Students should understand that the water cycle does not follow a single pathway.)*

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#### Supporting Standards for Student Mastery in Unit 2A

**E3.a:** Plan and carry out investigations to observe the flow of energy in water as it changes states from solid (ice) to liquid (water) to gas (water vapor) and changes from gas to liquid to solid.

### Unit 2B: Weather: Predicting Weather (5 weeks)

In this unit, students will interpret data and construct explanations from weather observations to make informed weather predictions. Students will explore cause and effect relationships to understand how weather instruments and data influence forecasting and differentiating between weather and climate.

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#### Overarching Standard for Unit 2B

**E4:** Obtain, evaluate, and communicate information to predict weather events and infer weather patterns using weather charts/maps and collected weather data.

**E4.d:** Construct an explanation based on research to communicate the difference between weather and climate

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#### Supporting Standards for Student Mastery in Unit 2B

**E4.a:** Construct an explanation of how weather instruments (thermometer, rain gauge, barometer, wind vane, and anemometer) are used in gathering weather data and making forecasts.

**E4.b:** Interpret data from weather maps/charts, including fronts (warm, cold, and stationary), temperature, pressure, and precipitation to make an informed prediction about tomorrow's weather.

**E4.c:** Ask questions and use observations of cloud types (cirrus, stratus, and cumulus) and data of weather conditions to predict weather events.



### Unit 3A: Space: Stars and Planets (2 weeks)

In this unit, students will explore technological advances in astronomy, constructing arguments based on evidence, explaining scientific concepts, and evaluating models of the solar system. Students will emphasize scale, proportion, and quantity in understanding the relative sizes and distances of celestial objects and recognize why stars appear different in brightness and size.

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#### Overarching Standard for Unit 3A

**E1: Obtain, evaluate, and communicate information to compare and contrast the physical attributes of stars and planets.**

- E1.c:** Construct an explanation of the differences between stars and planets.
- Explain the composition (rocky vs. gaseous) of planets and the sun.
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#### Supporting Standards for Student Mastery in Unit 3A

- E1.a:** Ask questions to compare and contrast technological advances that have changed the amount and type of information on distant objects in the sky.
- E1.b:** Construct an argument on why some stars (including the Earth's sun) appear to be larger or brighter than others.  
(*Clarification statement:* Differences are limited to distance and size, not age or stage of evolution.)
- E1.d:** Evaluate strengths and limitations of models of our solar system in describing relative size, order, appearance and composition of planets and the sun.  
(*Clarification statement:* Composition of planets is limited to rocky vs. gaseous.)

### Semester 2 (January – May)

#### **Unit 3A: Space: Stars and Planets (3 weeks)**

In this unit, students will explore technological advances in astronomy, constructing arguments based on evidence, explaining scientific concepts, and evaluating models of the solar system. Students will emphasize scale, proportion, and quantity in understanding the relative sizes and distances of celestial objects and recognize why stars appear different in brightness and size.

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#### **Overarching Standard for Unit 3A**

**E1: Obtain, evaluate, and communicate information to compare and contrast the physical attributes of stars and planets.**

- E1.c:** Construct an explanation of the differences between stars and planets.
- Explain the composition (rocky vs. gaseous) of planets and the sun.

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#### **Supporting Standards for Student Mastery in Unit 3A**

- E1.a:** Ask questions to compare and contrast technological advances that have changed the amount and type of information on distant objects in the sky.
- E1.b:** Construct an argument on why some stars (including the Earth's sun) appear to be larger or brighter than others.  
*(Clarification statement: Differences are limited to distance and size, not age or stage of evolution.)*
- E1.d:** Evaluate strengths and limitations of models of our solar system in describing relative size, order, appearance and composition of planets and the sun.  
*(Clarification statement: Composition of planets is limited to rocky vs. gaseous.)*

### Unit 3B: Space: Earth's Movement (4 weeks)

In this unit, students will observe and explore the patterns in repeating phases of the moon and also the changing length of day and night during different times of the year. Students will explain how the Earth's tilt and orbit result in seasonal changes.

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#### Overarching Standard for Unit 3B

- E2: Obtain, evaluate, and communicate information to model the effects of the position and motion of the Earth and the moon in relation to the sun as observed from the Earth.**
  - E2.c:** Construct an explanation of how the Earth's orbit, with its consistent tilt, affects seasonal changes
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#### Supporting Standards for Student Mastery in Unit 3B

- E2.a:** Develop a model to support an explanation of why the length of day and night change throughout the year.
- E2.b:** Develop a model based on observations to describe the repeating pattern of the phases of the moon (new, crescent, quarter, gibbous, and full).  
*(Clarification statement: Emphasis should not be placed on waxing and waning at this level. Crescent refers to the phases where the moon is less than half illuminated; Gibbous refers to the phases where the moon is more than half illuminated.)*

### Unit 4: Light and Sound (5 weeks)

In this unit, students will carry out multiple investigations to explore the nature of light and sound, and their interactions with objects. Students will understand how light interacts with materials and how sound is produced and altered. Principles of energy and matter will be used when exploring the properties of light (reflection and refraction) and sound to design a communication device.

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### Overarching Standards for Unit 4

- P1: Obtain, evaluate, and communicate information about the nature of light and how light interacts with objects.**
  - P1.a:** Plan and carry out investigations to observe and record how light interacts with various materials to classify them as opaque, transparent, or translucent.
  - P2: Obtain, evaluate, and communicate information about how sound is produced and changed and how sound and/or light can be used to communicate**
  - P2.b:** Design and construct a device to communicate across a distance using light and/or sound.
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### Supporting Standards for Student Mastery in Unit 4

- P1.b:** Plan and carry out investigations to describe the path light travels from a light source to a mirror and how it is reflected by the mirror using different angles.
- P1.c:** Plan and carry out an investigation utilizing everyday materials to explore examples of when light is refracted.  
(*Clarification statement:* Everyday materials could include prisms, eyeglasses, and a glass of water.)
- P2.a:** Plan and carry out an investigation utilizing everyday objects to produce sound and predict the effects of changing the strength or speed of vibrations.

### Unit 5: Force and Motion (6 weeks)

In this unit, students will plan and conduct investigations to understand how forces affect the motion of objects. Students will explore how simple machines work and alter forces. Concepts of stability and change will be tested when students analyze the conditions under which forces are balanced or unbalanced.

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#### Overarching Standard for Unit 5

**P3:** Obtain, evaluate, and communicate information about the relationship between balanced and unbalanced forces.

**P3.a:** Plan and carry out investigations on the effects of balanced and unbalanced forces on an object and communicate the results.

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#### Supporting Standards for Student Mastery in Unit 5

**P3.b:** Construct an argument to support the claim that gravitational force affects the motion of an object.

- Demonstrate how forces like gravity and friction affect the motion of an object.

**P3.c:** Ask questions to identify and explain the uses of simple machines (lever, pulley, wedge, inclined plane, wheel and axle, and screw) and how forces are changed when simple machines are used to complete tasks.

*(Clarification statement: The use of mathematical formulas is not expected.)*

### United States History – Revolution to Reconstruction

In fourth grade, students continue with year two of a three-year study of United States history in which all four strands (history, geography, civics/government, and economics) are integrated. Students begin the year learning about the French and Indian War and end with the Reconstruction period. The geography strand emphasizes the influence of geography on U.S. history during these same time periods. In the civics/government strand, students learn about concepts and rights contained within our founding documents. The economic strand uses material from the history strand to deepen understanding of economic concepts.

Social Studies standards integrate the three dimensions of **Information Processing Skills (IPs)**, **Map and Globe Skills (MGSs)**, and **Disciplinary Domains (DDs)** to provide a comprehensive framework that emphasizes active engagement, interdisciplinary connections, and K-12 Connecting Themes and Enduring Understandings. Together, they show how social studies standards engage *students* in obtaining, evaluating, and communicating information.

Information Processing Skills	Map and Globe Skills	Disciplinary Domains
<b>IPS. 1: Compare</b> similarities and differences (A)	<b>MGS.1:</b> Introduce the use of a compass rose to successfully identify cardinal directions (north, south, east, west). (A)	Historical Understandings (H)
<b>IPS. 2: Organize</b> items chronologically (A)	<b>MGS.2:</b> Introduce the use of intermediate directions when describing location (northeast, southeast, northwest, southwest). (A)	
<b>IPS.3: Identify</b> issues and/or problems and alternative solutions (D)	<b>MGS.3:</b> Use a letter/number grid system to determine location. (A)	Geographic Understandings (G)
<b>IPS.4: Distinguish</b> between facts and opinion. (A)	<b>MGS.4:</b> Compare and contrast the categories of natural, cultural, and political features on a map. (A)	
<b>IPS.5: Identify</b> main idea, detail, sequence of events, and cause and effect in a social studies context. (M)	<b>MGS.5:</b> Use graphic scales to determine distances on a map. (I)	
<b>IPS.6: Identify</b> and use primary and secondary sources. (M)	<b>MGS.6:</b> Use a map key/legend to acquire information from historical, physical, political, resource, product, and economic maps. (M)	

<b>IPS.7: Interpret</b> timelines, charts, and tables. (M)	<b>MGS.7:</b> Use a map to explain the impact of geography on historical and current events. (M)	Government/Civic Understandings (CG)
<b>IPS.8: Identify</b> social studies reference resources to use for a specific purpose. (A)	<b>MGS.8:</b> Draw conclusions and make generalizations based on information from maps. (M)	
<b>IPS.9: Construct</b> charts and tables. (A)	<b>MGS.9:</b> Use latitude and longitude to determine location. (D)	
<b>IPS.10: Analyze</b> artifacts. (D)		
<b>IPS.11:</b> Draw conclusions and make generalizations. (M)		
<b>IPS.12: Analyze</b> graphs and diagrams. (D)		
<b>IPS.13: Translate</b> dates into centuries, eras, or ages. (D)	<b>MGS.10:</b> Compare maps of the same place at different points in time and from different perspectives to determine changes, identify trends, and generalize about human activities. (I)	Economic Understandings (E)
<b>IPS.14: Formulate</b> appropriate research questions. (I)	<b>MGS.11:</b> Compare maps with data sets (charts, tables, graphs) and/or readings to draw conclusions and make generalizations. (I)	
<b>IPS.15: Determine</b> adequacy and/or relevancy of information. (I)		
<b>IPS.16: Check</b> for consistency of information. (I)		
<b>IPS.17: Interpret</b> political cartoons. (I)		

The goal of the **Information Processing Skills (IPS)** is for a student to be able to locate, analyze, and synthesize information related to social studies topics and apply this information to solve problems and/or make decisions. Students are working to master these skills over multiple grade levels. **Map and Globe Skills (MGS)** are the expected skills that a student should successfully use to retrieve social studies information from maps. The expected level of mastery for IPS and MGS are indicated by one of the following letters in parentheses: Introduced (I), Developing (D), Mastery (M), and Application (A). **Disciplinary Domains** are the four areas of fundamental concepts that students need to understand to develop a deep knowledge of social studies.

### Semester 1 (August – December)

#### **Unit 1 – Connecting Themes & Geography/Map Skills (3 weeks)**

- H3:** Explain westward expansion in America.
- CG2:** Explain the importance of freedoms guaranteed by the First Amendment to the U.S. Constitution.
- G1.a:** Locate major physical features of the United States: the Atlantic Coastal Plain, the Great Plains, the Continental Divide, the Gulf of Mexico, the Mississippi River, and the Great Lakes.
- G1.b:** Locate major man-made features of the United States: New York City, NY; Boston, MA; Philadelphia, PA; Washington, D.C.; Gettysburg, PA; and the Erie Canal.
- MGS.3:** Use a letter/number grid system to determine location.
- MGS.6:** Use a map key/legend to acquire information from historical, physical, political, resource, product, and economic maps.
- MGS.9:** Use latitude and longitude to determine location.
- MGS.10:** Compare maps of the same place at different points in time and from different perspectives to determine changes, identify trends, and generalize about human activities.
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#### **Unit 2 – American Revolution (8 weeks)**

- H1:** Explain the causes, events, and results of the American Revolution.
- H1.a:** Trace the events that shaped the revolutionary movement in America: French and Indian War, 1765 Stamp Act, the slogan “no taxation without representation,” the activities of the Sons of Liberty, the activities of the Daughters of Liberty, Boston Massacre, and the Boston Tea Party.
- H1.b:** Describe the influence of key individuals and groups during the American Revolution: King George III, George Washington, Benjamin Franklin, Thomas Jefferson, Benedict Arnold, Patrick Henry, John Adams, Paul Revere, and Black regiments.



- H1.c:** Describe the major events of the American Revolution and explain the factors leading to American victory and British defeat; include the Battles of Lexington and Concord, Saratoga, and Yorktown.
- H1.d:** Explain the writing of the Declaration of Independence; include who wrote it, how it was written, why it was necessary, and how it was a response to tyranny and the abuse of power.
- E1.e:** Describe how trade promotes economic activity (e.g., trade between the U.S. and Europe).
- G1.b:** Locate major man-made features of the United States: New York City, NY; Boston, MA; Philadelphia, PA; Washington, D.C.; Gettysburg, PA; and the Erie Canal.
- MGS.3:** Use a letter/number grid system to determine location.
- MGS.6:** Use a map key/legend to acquire information from historical, physical, political, resource, product, and economic maps.
- MGS.9:** Use latitude and longitude to determine location.
- G2.a:** Explain how each force (American and British) attempted to use the physical geography of each battle site (Lexington and Concord, Saratoga, and Yorktown) to its benefit.
- MGS.7:** Use a map to explain the impact of geography on historical and current events.
- MGS.8:** Draw conclusions and make generalizations based on information from maps.
- CG1.a:** Describe the meaning of Natural rights as found in the Declaration of Independence (the right to life, liberty, and the pursuit of happiness).

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### Unit 3 – Government – (7 weeks)

- H2:** Analyze the challenges faced by the framers of the Constitution.
- H2.b:** Evaluate the major issues debated at the Constitutional Convention: the weaknesses of the Articles of Confederation, the rights of states to govern themselves (federal system), the Great Compromise, and slavery (Three-Fifths Compromise).
- H2.a:** Identify the major leaders of the Constitutional Convention (James Madison, George Washington, and Benjamin Franklin).

- CG1.b:** Describe the meaning of “We the People” from the Preamble to the U.S. Constitution as a reflection of consent of the governed or popular sovereignty.
- CG1.c:** Describe the meaning of the federal system of government in the U.S. (federal powers, state powers, and shared powers).
- CG1.d:** Describe the meaning of representative democracy/republic.
- CG2:** Explain the importance of freedoms guaranteed by the First Amendment to the U.S. Constitution.
- CG3.a:** Describe how the three branches of government interact with each other (checks and balances and separation of powers), and how they relate to local, state, and federal government.
- CG3.b:** Identify and explain the rights in the Bill of Rights, describe how the Bill of Rights places limits on the powers of government, and explain the reasons for its inclusion in the Constitution in 1791.

### Semester 2 (January – May)

#### **Unit 4 – Westward Expansion (6 weeks)**

- H3:** Explain westward expansion in America.
- H3.c:** Describe territorial expansion with emphasis on the Louisiana Purchase, the Lewis and Clark expedition, and the acquisitions of Texas (the Alamo and independence), Oregon (Oregon Trail), and California (Gold Rush and the development of mining towns).
- H3.a:** Describe the causes and events of the War of 1812; include the burning of the Capitol and the White House and the writing of “The Star Spangled Banner.”
- H3.b:** Describe the impact of westward expansion on American Indians; include the Trail of Tears, Battle of Little Bighorn and the forced relocation of American Indians to reservations.
- E1.a:** Describe opportunity cost and its relationship to decision-making across time (e.g., decisions to settle in the west).
- E1.d:** Explain how voluntary exchange helps both buyers and sellers (e.g., Gold Rush mining towns).
- E1.f:** Give examples of technological advancements and their impact on business productivity during the development of the United States (e.g., cotton gin, steamboat, steam locomotive, and telegraph).
- G1.a:** Locate major physical features of the United States: the Atlantic Coastal Plain, the Great Plains, the Continental Divide, the Gulf of Mexico, the Mississippi River, and the Great Lakes.
- MGS.3:** Use a letter/number grid system to determine location.
- MGS.6:** Use a map key/legend to acquire information from historical, physical, political, resource, product, and economic maps.
- MGS.9:** Use latitude and longitude to determine location.
- MGS.10:** Compare maps of the same place at different points in time and from different perspectives to determine changes, identify trends, and generalize about human activities.
- G2.b:** Describe physical barriers that hindered and physical gateways that benefited territorial expansion from 1801 to 1861.
- MGS.7:** Use a map to explain the impact of geography on historical and current events.
- MGS.8:** Draw conclusions and make generalizations based on information from maps.
- MGS.11:** Compare maps with data sets (charts, tables, graphs) and/or readings to draw conclusions and make generalizations.
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### Unit 5– Civil War (6 weeks)

- H5:** Explain the causes, major events, and consequences of the Civil War.
  - H5.b:** Discuss how the issues of states’ rights and slavery increased tensions between the North and South.
  - H5.e:** Describe the effects of war on the North and South.
    - H4.a:** Discuss contributions of and challenges faced by Susan B. Anthony, Frederick Douglass, Elizabeth Cady Stanton, Sojourner Truth, and Harriet Tubman.
    - E1.b:** Explain how price incentives affect people’s behavior and choices: decisions about what crops (e.g., cotton, and tobacco) to grow and products (e.g., textiles) to produce.
    - E1.c:** Describe how specialization improves standards of living (e.g., differences in the economies in the North and South).
    - H5.a:** Identify Uncle Tom’s Cabin and John Brown’s raid on Harper’s Ferry and explain how each of these events was related to the Civil War.
    - H5.c:** Identify major battles, campaigns, and events: Fort Sumter, Gettysburg, the Atlanta Campaign, Sherman’s March to the Sea, and Appomattox Court House.
    - H5.d:** Describe the roles of Abraham Lincoln, Robert E. Lee, Ulysses S. Grant, Jefferson Davis, Thomas “Stonewall” Jackson, and William T. Sherman.
    - G1.b:** Locate major man-made features of the United States: New York City, NY; Boston, MA; Philadelphia, PA; Washington, D.C.; Gettysburg, PA; and the Erie Canal.
    - MGS.3:** Use a letter/number grid system to determine location.
    - MGS.6:** Use a map key/legend to acquire information from historical, physical, political, resource, product, and economic maps.
    - MGS.9:** Use latitude and longitude to determine location.
    - MGS.10:** Compare maps of the same place at different points in time and from different perspectives to determine changes, identify trends, and generalize about human activities.
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### Unit 6 – Reconstruction (5 weeks)

**H6:** Analyze the effects of Reconstruction on American life.

**H6.a:** Describe the purpose of the 13th, 14th, and 15th Amendments.

**H6.d:** Describe the effects of Jim Crow laws and practices.

**H6.b:** Explain the work of the Bureau of Refugees, Freedmen, and Abandoned Lands (Freedmen’s Bureau).

**H6.c:** Explain how slavery was replaced by sharecropping and how freed African Americans or Blacks were prevented from exercising their newly won rights.

**E1.c:** Describe how specialization improves standards of living (e.g., differences in the economies in the North and South).

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### Unit 7 – Personal Budgeting (1 week)

**E2:** Identify the elements of a personal budget (income, expenditures, and saving) and explain why personal spending and saving decisions are important.