

FOURTH GRADE

ENGLISH

In fourth grade, reading and writing skills support and increased emphasis on content-area learning and utilization of the resources of the media center, especially to locate and read primary sources of information. A significant percentage of reading material will relate to the study of mathematics, science, and history and social science. The student will use text organizers, summarize information, formulate questions, and draw conclusions to demonstrate reading comprehension. The students will also read classic and contemporary literature selections by a variety of authors. The student will continue to increase communication skills in large and small group settings. In addition, the student will plan, draft, revise, and edit narratives and explanations. The student will also routinely use information resources and word references while writing.

Oral Language

4.1 The student will use effective oral communication skills in a variety of settings.

a) Present accurate directions to individuals and small groups.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to present accurate directions to individuals and small groups by:

- Identifying the information needed by the listener;
- organizing and sequencing the information in a logical way;
- explaining or defining any terms that might be unfamiliar to the listener;
- articulating the information in a clear, organized manner;
- making connections to previous common knowledge of a group of listeners;
- giving oral and written directions for a variety of purposes; and
- presenting directions through the use of illustrations.

b) Contribute to group discussions across content areas.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to contribute to group discussions by:

- Offering comments that are relevant to the topic of discussion;
- avoiding interruptions that hinder the progress of discussions;
- taking turns speaking during a discussion; and
- maintaining appropriate eye contact and attentive body language while listening.

c) Seek ideas and opinions of others.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to seek the ideas and opinions of others by:

- Asking appropriate questions and opinions of others;
- respecting the comments of others, especially if they are different from one's own.
- interviewing family members, classmates, or other adults to seek ideas, experiences, and opinions

d) Use evidence to support opinions.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to explain the author's purpose by:

- Explaining why the author wrote the piece (identify purpose), e.g., to entertain, inform, or persuade;
- locating specific text that suggests the author's purpose;
- summarizing the author's purpose for writing; and
- drawing conclusions about the purpose of the text.

e) Use grammatically correct language and specific vocabulary to communicate ideas.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to use grammatically correct language and specific vocabulary to communicate ideas by:

- Using grammatically correct language to communicate ideas and directions to individuals or groups; and
- using specific vocabulary to enhance oral communication.

f) Communicate new ideas to others.

g) Demonstrate the ability to collaborate with diverse teams.

h) Demonstrate the ability to work independently.

4.2 The student will make and listen to oral presentations and reports.

a) Use subject related information and vocabulary.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to use subject-related information and vocabulary by:

- Organizing information around a central idea with supporting details and using specific vocabulary;

- speaking clearly, using appropriate voice level and speaking rate; and
- participating in teacher-directed vocabulary development activities.

b) Listen to and record information.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to listen to and record information by:

- Using active listening skills;
- looking at the speaker;
- thinking about the main points the speaker is making;
- taking notes; and
- giving oral reports on realistic fiction, while classmates listen and record techniques and strategies that speakers use to make their report informative.
- summarizing the plot in book talks, preparing oral summaries of news events, and presenting biographical sketches or character sketches, while classmates take notes to help them remember the main ideas and details.

c) Organize information for clarity.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to organize information for clarity by:

- Creating a simple visual, such as a poster or technology tool presentation, that helps listeners follow the presentation;
- using graphic organizers; and
- making outlines.

d) Use language and style appropriate to the audience, topic, and purpose.

Reading

4.3 The student will learn how media messages are constructed and for what purposes.

- Differentiate between auditory, visual, and written media messages.
- Identify the characteristics of various mass media messages.

4.4 The student will expand vocabulary when reading.

a) Use context to clarify meanings of unfamiliar words.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to use context to clarify meanings of unfamiliar words by:

- Reading familiar text with fluency, accuracy, and expression;
- applying sense of story to solve meanings of unfamiliar words;
- explaining the meaning of a word; and
- using content and structure of a sentence or paragraph to help determine the meaning of an unfamiliar word.

b) Use knowledge of roots, affixes, synonyms, antonyms, and homophones.

CHESAPEAKE OBJECTIVE:

The student will expand their vocabulary when reading by using their knowledge of synonyms (*words with like meanings*) and antonyms (*words with opposite meanings*) to understand the meanings of unfamiliar words by:

- Deriving word meaning by using their knowledge of homonyms/homophones (words that are pronounced the same but are spelled differently and have different meanings) such as *read/red, no/know, hear/here*;
- using knowledge of word origins;
- decoding new words using context;
- looking at the parts of the word for meaning; and
- applying new vocabulary in writing and speaking.

c) Use word-reference materials, including the glossary, dictionary, and thesaurus.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to use word-reference materials including the glossary, dictionary, and thesaurus by:

- Using context to select the most appropriate meaning/definition of words from a glossary or dictionary;
- identifying the word reference material(s) most likely to contain needed information;
- using alphabetical order;
- locating information using a table of contents, an index, and a glossary;
- using a dictionary to find the right meaning;
- using guide words to locate entries;
- using the pronunciation key and symbols to pronounce unfamiliar words; and
- selecting the best word to use from a thesaurus.

d) Develop vocabulary by listening to and reading a variety of texts.

e) Use vocabulary from other content areas.

4.5 The student will read and demonstrate comprehension of fictional texts, narrative nonfiction texts, and poetry.

a) Explain the author's purpose.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to explain the author's purpose by:

- Explaining why the author wrote the piece (identify purpose), e.g., to entertain, inform, or persuade;
- locating specific text that suggests the author's purpose;
- summarizing the author's purpose for writing; and
- drawing conclusions about the purpose of the text.

b) Describe how the choice of language, setting, characters, and information contributes to the author's purpose.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to show how the choice of language, setting, and information contributes to the author's purpose by:

- Finding words or sentences that help identify the author's purpose;
- finding setting details and other information that help identify the author's purpose;
- knowing that narrative poetry tells a story through verse;
- explaining how authors craft their purpose and message in text;
- determining the tone and point of view of the writing; and
- finding words and phrases that help the reader visualize the author's words.

c) Identify the main idea.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to identify major events and supporting details by:

- Locating specific text that identify major events and supporting details;
- retelling major events with supporting details;
- explaining major events with supporting details; and
- rereading to confirm information.

d) Summarize supporting details.

e) Identify the problem and solution.

f) Describe the relationship between the text and previously read materials.

g) Identify sensory words.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to identify sensory words by:

- Identifying sensory words that describe sights, sounds, smells, and tastes and describe how they make the reader feel; and
- locating sensory words in various types of literature

h) Draw conclusions/make inferences about the text.

i) Make, confirm, or revise predictions.

j) Identify cause and effect relationships.

k) Use reading strategies throughout the reading process to monitor comprehension.

l) Read with fluency and accuracy.

4.6 The student will read and demonstrate comprehension of nonfiction texts.

a) Use text structures, such as type, headings, and graphics, to predict and categorize information in both print and digital texts.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to use text organizers such as type, headings, and graphics to predict and categorize information by:

- Skimming nonfiction print materials, which reflect the Standards of Learning in history and social sciences, science, and mathematics;
- using text set in special type styles, such as bold-faced and color, captions under pictures and graphics, and headings of sections and chapters to predict and categorize information;
- turning headings into questions to set a purpose for reading; and
- taking notes.

b) Formulate questions that might be answered in the selection.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to formulate questions that might be answered in the selection by:

- Skimming nonfiction print materials, which reflect the Standards of Learning in history and social sciences, science, and mathematics;
- generating questions to guide reading
- of text through reading strategies, such
- as KWL (Ogle) or DRTA (Stauffer);
- using the headings to write questions to be answered during reading; and
- asking questions when previewing.

Writing

4.7 The student will write cohesively for a variety of purposes.

a) Identify intended audience.

b) Focus on one aspect of a topic.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to focus on one aspect of a topic by:

- Applying knowledge of the writing domains of composing, written expression, and usage/mechanics; and
- selecting specific information to guide readers more purposefully through the piece.

c) Use a variety of pre-writing strategies.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to focus on one aspect of a topic by:

- Applying knowledge of the writing domains of composing, written expression, and usage/mechanics; and
- selecting specific information to guide readers more purposefully through the piece.

d) Organize writing to convey a central idea.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to organize writing to convey a central idea by:

- Applying knowledge of the writing domains of composing, written expression, and usage/mechanics;
- creating a plan and organizing thoughts to convey a central idea before writing; and
- focusing, organizing, and elaborating to construct an effective message for the reader.

e) Recognize that different modes of writing have different patterns of organization.

f) Write a clear topic sentence focusing on the main idea.

g) Write two or more related paragraphs on the same topic.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to write several related paragraphs on the same topic by:

- Applying knowledge of the writing domains of composing, written expression, and usage/mechanics; and
- writing effective narratives and explanations that include several paragraphs.

h) Use transition words for sentence variety.

i) Utilize elements of style, including word choice and sentence variation.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to utilize elements of style, including word choice, and sentence variation by:

- Applying knowledge of the writing domains of composing, written expression, and usage/mechanics.
- using specific vocabulary and vivid word choice;
- including sentences of various lengths and beginnings to create a pleasant, informal rhythm;
- purposefully shaping and controlling language to affect readers;
- writing similes, metaphors, and idioms;
- writing paragraphs to create a mood; and
- writing poetry and dialogue.

j) Revise writing for clarity of content using specific vocabulary and information.

k) Include supporting details that elaborate the main idea.

4.8 The student will edit writing for correct grammar, capitalization, spelling, punctuation, sentence structure, and paragraphing.

a) Use subject-verb agreement.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to use subject-verb agreement by:

- Applying knowledge of the writing domains of composing, written expression, and usage/mechanics;
- using a rubric to self-assess writing; and
- using subject-verb agreement (*singular nouns with singular verbs; plural nouns with plural verbs*).

b) Include prepositional phrases.

c) Eliminate double negatives.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to eliminate double negatives by:

- Applying knowledge of the writing domains of composing, written expression, and usage/mechanics;
- using a rubric to self-assess writing; and
- avoiding the use of double negatives.

d) Use noun-pronoun agreement.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to use noun-pronoun agreement by:

- Applying knowledge of the writing domains of composing written expression, and usage/mechanics;
- using a rubric to self-assess writing; and
- using noun/pronoun agreement (pronoun agrees in number with its antecedent).

e) Use commas in series, dates, and addresses.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to use commas in series, dates, and addresses by:

- Applying knowledge of the writing domains of composing, written expression, and usage/mechanics;
- using commas in series, dates, and addresses; and
- using a rubric to self-assess writing.

f) Incorporate adjectives and adverbs.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to incorporate adjectives and adverbs by:

- Applying knowledge of the writing domains of composing, written expression, and usage/mechanics;
- using adjectives and adverbs (use adverbs instead of adjectives where appropriate, e.g. "He played *really* well." instead of "He played *real* well."); and
- using a rubric to self-assess writing.

g) Use correct spelling for frequently used words, including common homophones.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to use correct spelling for frequently used words, including common homophones by:

- Applying knowledge of the writing domains of composing, written expression, and usage/mechanics;
- demonstrating the meaning of common homophones;
- using the correct spelling of frequently used words, including common homonyms/homophones, e.g., threw/through; and
- using a rubric to self-assess writing.

h) Use singular possessives.

4.9 The student will demonstrate comprehension of information resources to research a topic.

a) Construct questions about a topic.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to construct questions about a topic by:

- Formulating research questions based on a topic;
- writing or asking questions before reading;
- using the headings to write questions to be answered during reading; and
- brainstorming what is known and formulating questions about the desired learning.

b) Collect information from multiple resources including online, print, and media.

CHESAPEAKE OBJECTIVE:

The student will demonstrate the ability to collect information using the resources of the media center including online, print, and media resources by:

- Selecting and using appropriate references, such as dictionaries, atlases, almanacs, encyclopedias, and thesauruses including online, print, and other media;
 - selecting the information that is related to their topic;
 - identifying key terms to use in searching for information; and
 - skimming to find information related to a topic.
- c) Use technology as a tool to organize, evaluate and communicate information.
- d) Give credit to sources used in research.
- e) Understand the difference between plagiarism and use of own words.

MATH

The fourth grade standards place emphasis on division with whole numbers and solving problems involving addition and subtraction of fractions and decimals. Students will continue to learn and use the basic multiplication facts as they become proficient in multiplying larger numbers. Students also will refine their estimation skills for computations and measurements and investigate the relationships between and among points, lines, segments, and rays. Concrete materials will be used to solve problems involving perimeter, patterns, and probability. While learning mathematics, students will be actively engaged, using concrete materials and appropriate technologies such as calculators and computers. However, facility in the use of technology shall not be regarded as a substitute for a student's understanding of quantitative concepts and relationships or for proficiency in basic computations. Students also will identify real-life applications of the mathematical principles they are learning that can be applied to science and other disciplines they are studying.

Mathematics has its own language, and the acquisition of specialized vocabulary and language patterns is crucial to a student's understanding and appreciation of the subject. Students should be encouraged to use correctly the concepts, skills, symbols, and vocabulary identified in the following set of standards.

Problem solving has been integrated throughout the six content strands. The development of problem-solving skills should be a major goal of the mathematics program at every grade level. Instruction in the process of problem solving will need to be integrated early and continuously into each student's mathematics education. Students must be helped to develop a wide range of skills and strategies for solving a variety of problem types.

4.1 The student will

- a) identify orally and in writing the place value for each digit in a whole number expressed through millions;**
- b) compare two whole numbers expressed through millions, using symbols (>, <, or =); and**
- c) round whole numbers expressed through millions to the nearest thousand, ten thousand, and hundred thousand.**
 - Identify and communicate, both orally and in written form, the placed value for each digit in whole numbers expressed through the one millions place.
 - Read whole numbers through the one millions place that are presented in standard format, and select the matching number in written format.
 - Write whole numbers through the one millions place in standard format when the numbers are presented orally or in written format.
 - Identify and use the symbols for *greater than*, *less than*, and *equal to*.
 - Compare two whole numbers expressed through the one millions, using symbols >, <, or =.
 - Round whole numbers expressed through the one millions place to the nearest thousand, ten thousand, and hundred-thousand place.

4.2 The student will

- a) compare and order fractions and mixed numbers;**
- b) represent equivalent fractions; and**
- c) identify the division statement that represents a fraction.**
 - Compare and order fractions having denominators of 12 or less, using manipulative models and drawings, such as region/area models.
 - Compare and order fractions with like denominators by comparing number of parts (numerators) (e.g., $\frac{1}{5} < \frac{3}{5}$).
 - Compare and order fractions with like numerators and unlike denominators by comparing the size of the parts
 - Compare and order fractions having unlike denominators of 12 or less by comparing the fractions to benchmarks (e.g., 0, $\frac{1}{2}$ or 1) to determine their relationships to the benchmarks or by finding a common denominator.
 - Compare and order mixed numbers having denominators of 12 or less.
 - Use the symbols >, <, and = to compare the numerical value of fractions and mixed numbers having denominators of 12 or less.
 - Represent equivalent fractions through twelfths, using region/area models, set models, and measurement models.
 - Identify the division statement that represents a fraction (e.g., $\frac{3}{5}$ means the same as 3 divided by 5).

CHESAPEAKE OBJECTIVE: Simplify fractions

4.3

The student will

- a) **read, write, represent, and identify decimals expressed through thousandths;**
 - b) **round decimals to the nearest whole number, tenth, and hundredth;**
 - c) **compare and order decimals; and**
 - d) **given a model, write the decimal and fraction equivalents.**
- Investigate the ten-to-one place value relationship for decimals through thousandths, using Base-10 manipulatives (e.g., place value mats/charts, decimal squares, Base-10 blocks, money).
 - Represent and identify decimals expressed through thousandths, using Base-10 manipulatives, pictorial representations, and numerical symbols (e.g., relate the appropriate drawing to 0.05).
 - Identify and communicate, both orally and in written form, the position and value of a decimal through thousandths. For example, in 0.385, the 8 is in the hundredths place and has a value of 0.08.
 - Read and write decimals expressed through thousandths, using Base-10 manipulatives, drawings, and numerical symbols.
 - Round decimals to the nearest whole number, tenth, and hundredth.
 - Compare decimals, using the symbols $>$, $<$, $=$.
 - Order a set of decimals from least to greatest or greatest to least.
 - Represent fractions for halves, fourths, fifths, and tenths as decimals through hundredths, using concrete objects (e.g., demonstrate the relationship between the fraction $\frac{1}{4}$ and its decimal equivalent 0.25).
 - Relate fractions to decimals, using concrete objects (e.g., 10-by-10 grids, meter sticks, number lines, decimal squares, decimal circles, money [coins]).
 - Write the decimal and fraction equivalent for a given model (e.g., $\frac{1}{4} = 0.25$ or 0.25).

4.4

The student will

- a) **estimate sums, differences, products, and quotients of whole numbers;**
 - b) **add, subtract, and multiply whole numbers;**
 - c) **divide whole numbers, finding quotients with and without remainders; and**
 - d) **solve single-step and multistep addition, subtraction, and multiplication problems with whole numbers.**
- Estimate whole number sums, differences, products, and quotients.
 - Refine estimates by adjusting the final amount, using terms such as *closer to*, *between*, and *a little more than*.
 - Determine the sum or difference of two whole numbers, each 999,999 or less, in vertical and horizontal form with or without regrouping, using paper and pencil, and using a calculator.
 - Estimate and find the products of two whole numbers when one factor has two digits or fewer and the other factor has three digits or fewer, using paper and pencil and calculators.
 - Estimate and find the quotient of two whole numbers, given a one-digit divisor and a two- or three-digit dividend.
 - Solve single-step and multistep problems using whole number operations.
 - Verify the reasonableness of sums, differences, products, and quotients of whole numbers using estimation.

CHESAPEAKE OBJECTIVE:

*Solve problems involving the sum or difference of two whole numbers each 999,999 or less.

*Solve problems involving the product of two whole numbers when both factors have two digits or fewer.

*Now part of SOL

4.5

The student will

- a) **determine common multiples and factors, including least common multiple and greatest common factor;**
 - b) **add and subtract fractions having like and unlike denominators that are limited to 2, 3, 4, 5, 6, 8, 10, and 12, and simplify the resulting fractions, using common multiples and factors;**
 - c) **add and subtract with decimals; and**
 - d) **solve single-step and multistep practical problems involving addition and subtraction with fractions and with decimals.**
- Find common multiples and common factors of numbers.
 - Determine the least common multiple and greatest common factor of numbers.
 - Use least common multiple and/or greatest common factor to find a common denominator for fractions.
 - Add and subtract with fractions having like denominators whose denominators are limited to 2, 3, 4, 5, 6, 8, 10, and 12, and simplify the resulting fraction using common multiples and factors.
 - Add and subtract with fractions having unlike denominators whose denominators are limited to 2, 3, 4, 5, 6, 8, 10, and 12, and simplify the resulting fraction using common multiples and factors.
 - Solve problems that involve adding and subtracting with fractions having like and unlike denominators whose denominators are limited to 2, 3, 4, 5, 6, 8, 10, and 12, and simplify the resulting fraction using common multiples and factors.
 - Add and subtract with decimals through thousandths, using concrete materials, pictorial representations, and paper and pencil.
 - Solve single-step and multistep problems that involve adding and subtracting with fractions and decimals through thousandths.

- 4.6 The student will**
- a) **estimate and measure weight/mass and describe the results in U.S. Customary and metric units as appropriate; and**
 - b) **identify equivalent measurements between units within the U.S. Customary system (ounces, pounds, and tons) and between units within the metric system (grams and kilograms).**
 - Determine an appropriate unit of measure (e.g., ounce, pound, ton, gram, kilogram) to use when measuring everyday objects in both metric and U.S. Customary units.
 - Measure objects in both metric and U.S. Customary units (e.g., ounce, pound, ton, gram, or kilogram) to the nearest appropriate measure, using a variety of measuring instruments.
 - Record the mass of an object including the appropriate unit of measure (e.g., 24 grams).
- 4.7 The student will**
- a) **estimate and measure length, and describe the result in both metric and U.S. Customary units; and**
 - b) **identify equivalent measurements between units within the U.S. Customary system (inches and feet; feet and yards; inches and yards; yards and miles) and between units within the metric system (millimeters and centimeters; centimeters and meters; and millimeters and meters).**
 - Determine an appropriate unit of measure (e.g., inch, foot, yard, mile, millimeter, centimeter, and meter) to use when measuring everyday objects in both metric and U.S. Customary units.
 - Estimate the length of everyday objects (e.g., books, windows, tables) in both metric and U.S. Customary units of measure.
 - Measure the length of objects in both metric and U.S. Customary units, measuring to the nearest inch (**Error!** **Bookmark not defined.** $\frac{1}{2}, \frac{1}{4}, \frac{1}{8}$), foot, yard, mile, millimeter, centimeter, or meter, and record the length including the appropriate unit of measure (e.g., 24 inches).
 - Compare estimates of the length of objects with the actual measurement of the length of objects.
 - Identify equivalent measures of length between units within the U.S. Customary measurements and between units within the metric measurements.
- 4.8 The student will**
- a) **estimate and measure liquid volume and describe the results in U.S. Customary units; and**
 - b) **identify equivalent measurements between units within the U.S. Customary system (cups, pints, quarts, and gallons).**
 - Determine an appropriate unit of measure (cups, pints, quarts, gallons) to use when measuring liquid volume in U.S. Customary units.
 - Estimate the liquid volume of containers in U.S. Customary units of measure to the nearest cup, pint, quart, and gallon.
 - Measure the liquid volume of everyday objects in U.S. Customary units, including cups, pints, quarts, and gallons, and record the volume including the appropriate unit of measure (e.g., 24 gallons).
 - Identify equivalent measures of volume between units within the U.S. Customary system.
- 4.9 The student will determine elapsed time in hours and minutes within a 12-hour period.**
- Determine the elapsed time in hours and minutes within a 12-hour period (times can cross between a.m. and p.m.).
 - Solve practical problems in relation to time that has elapsed.
- 4.10 The student will**
- a) **identify and describe representations of points, lines, line segments, rays, and angles, including endpoints and vertices; and**
 - b) **identify representations of lines that illustrate intersection, parallelism, and perpendicularity.**
 - Identify and describe representations of points, lines, line segments, rays, and angles, including endpoints and vertices.
 - Understand that lines in a plane can intersect or are parallel. Perpendicularity is a special case of intersection.
 - Identify practical situations that illustrate parallel, intersecting, and perpendicular lines.
- 4.11 The student will**
- a) **investigate congruence of plane figures after geometric transformations, such as reflection, translation, and rotation, using mirrors, paper folding, and tracing; and**
 - b) **recognize the images of figures resulting from geometric transformations, such as translation, reflection, and rotation.**
 - Recognize the congruence of plane figures resulting from geometric transformations such as translation, reflection, and rotation, using mirrors, paper folding and tracing.
- 4.12 The student will**
- a) **define polygon; and**
 - b) **identify polygons with 10 or fewer sides.**
 - Define and identify properties of polygons with 10 or fewer sides.
 - Identify polygons by name with 10 or fewer sides in multiple orientations (rotations, reflections, and translations of the polygons).

- 4.13 The student will**
- predict the likelihood of an outcome of a simple event; and**
 - represent probability as a number between 0 and 1, inclusive.**
 - Model and determine all possible outcomes of a given simple event where there are no more than 24 possible outcomes, using a variety of manipulatives, such as coins, number cubes, and spinners.
 - Write the probability of a given simple event as a fraction, where the total number of possible outcomes is 24 or fewer.
 - Identify the likelihood of an event occurring and relate it to its fractional representation (e.g., impossible/0; equally likely/ $\frac{1}{2}$; certain/1).
 - Determine the outcome of an event that is least likely to occur (less than half) or most likely to occur (greater than half) when the number of possible outcomes is 24 or less.
 - Represent probability as a point between 0 and 1, inclusively, on a number line.
- 4.14 The student will collect, organize, display, and interpret data from a variety of graphs.**
- Collect data, using, for example, observations, measurement, surveys, scientific experiments, polls, or questionnaires.
 - Organize data into a chart or table.
 - Construct and display data in bar graphs, labeling one axis with equal whole number increments of 1 or more (numerical data) (e.g., 2, 5, 10, or 100) and the other axis with categories related to the title of the graph (categorical data) (e.g., swimming, fishing, boating, and water skiing as the categories of "Favorite Summer Sports").
 - Construct and display data in line graphs, labeling the vertical axis with equal whole number increments of 1 or more and the horizontal axis with continuous data commonly related to time (e.g., hours, days, months, years, and age). Line graphs will have no more than 10 identified points along a continuum for continuous data. For example, growth charts showing age versus height place age on the horizontal axis (e.g., 1 month, 2 months, 3 months, and 4 months).
 - Title or identify the title in a given graph and label or identify the axes.
 - Interpret data from simple line and bar graphs by describing the characteristics of the data and the data as a whole (e.g., the category with the greatest/least, categories with the same number of responses, similarities and differences, the total number). Data points will be limited to 30 and categories to 8.
 - Interpret the data to answer the question posed, and compare the answer to the prediction (e.g., "The summer sport preferred by most is swimming, which is what I predicted before collecting the data.").
 - Write at least one sentence to describe the analysis and interpretation of the data, identifying parts of the data that have special characteristics, including categories with the greatest, the least, or the same.
- CHESAPEAKE OBJECTIVE:** Collect, organize, and display data in pictographs and circle graphs.
- 4.15 The student will recognize, create, and extend numerical and geometric patterns.**
- Describe geometric and numerical patterns, using tables, symbols, or words.
 - Create geometric and numerical patterns, using concrete materials, number lines, tables, and words.
 - Extend geometric and numerical patterns, using concrete materials, number lines, tables, and words.
- CHESAPEAKE OBJECTIVE:** *Explain the functional relationship of a number pattern in writing (e.g. each number is two times the previous number).
*Now part of SOL
- 4.16 The student will**
- recognize and demonstrate the meaning of equality in an equation; and
 - investigate and describe the associative property for addition and multiplication.
 - Recognize and demonstrate that the equals sign (=) relates equivalent quantities in an equation.
 - Write an equation to represent equivalent mathematical relationships (e.g., $4 \times 3 = 2 \times 6$).
 - Recognize and demonstrate appropriate use of the equals sign in an equation.
 - Investigate and describe the associative property for addition as $(6 + 2) + 3 = 6 + (2 + 3)$.
 - Investigate and describe the associative property for multiplication as $(3 \times 2) \times 4 = 3 \times (2 \times 4)$.

SCIENCE

The fourth-grade standards stress the importance of using information, analyzing data, and validating experimental results. Defining variables in experimentation is emphasized, and making simple predictions from picture, bar, and basic line graphs is underscored. Questioning and hypothesizing become more detailed at this level. Students are introduced to basic principles of electricity and to the concept of motion. Students explore basic information about our solar system and investigate the interactions among Earth, the moon, and the sun. Students explore basic plant anatomy, plant adaptations, and investigate relationships among plants and animals and their environments. In examining weather phenomena and conditions, students identify various factors, make predictions based on data, and evaluate the results. The importance of natural resources in Virginia is emphasized.

Scientific Investigation, Reasoning, and Logic

- 4.1 The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which:**
- distinctions are made among observations, conclusions, inferences, and predictions;**
 - objects or events are classified and arranged according to characteristic or properties;**

- c) appropriate instruments are selected and used to measure length, mass, volume, and temperature in metric units;
- d) appropriate instruments are selected and used to measure elapsed time;
- e) prediction and inferences are made, and conclusions are drawn based on data from a variety of sources;
- f) independent and dependent variables are identified;
- g) constants in an experimental situation are identified;
- h) hypotheses are developed as cause and effect relationships;
- i) data are collected, recorded, analyzed, and displayed using bar and basic line graphs;
- j) numerical data that are contradictory or unusual in experimental results are recognized;
- k) data are communicated with simple graphs, pictures, written statements and numbers;
- l) models are constructed to clarify explanations, demonstrate relationships, and solve needs; and
- m) current applications are used to reinforce science concepts.

Force, Motion, and Energy

4.2 The student will investigate and understand characteristics and interactions of moving objects.

Key concepts include

- a) motion is described by an object's direction and speed;
- b) changes in motion are related to force and mass;
- c) friction is a force that opposes motion; and
- d) moving objects have kinetic energy.

4.3 The student will investigate and understand the characteristics of electricity.

Key concepts include:

- a) conductors, and insulators;
- b) basic circuits
- c) static electricity;
- d) the ability of electrical energy to be transformed into light and motion, and to produce heat;
- e) simple electromagnets and magnetism; and
- f) historical contributions in understanding electricity.

Life Processes

4.4 The student will investigate and understand basic plant anatomy and life processes.

Key concepts include:

- a) the structures of typical plants and function of each structure;
- b) processes and structures involved with reproduction;
- c) photosynthesis; and
- d) adaptations allow plants to satisfy life needs and respond to the environment.

Living Systems

4.5 The student will investigate and understand how plants and animals, including humans, in an ecosystem interact with one another and with the nonliving components in the ecosystem.

Key concepts include:

- a) plant and animal adaptations;
- b) organization of populations, communities, and ecosystems and how they interrelate;
- c) flow of energy through food webs;
- d) habitats and niches;
- e) changes in an organism's niche at various stages in its life cycles; and
- f) influence of human activity on ecosystems.

Interrelationships in Earth/Space Systems

4.6 The student will investigate and understand how weather conditions and phenomena occur and can be predicted.

Key concepts include:

- a) weather phenomena;
- b) weather measurements and meteorological tools; and
- c) use of weather measurements and weather phenomena to make weather predictions.

Earth Patterns, Cycles, and Change

4.7 The student will investigate and understand the organization of the solar system.

Key concepts include:

- a) the planets in the solar system;
- b) the order of the planets in the solar system; and
- c) the relative size of the planets.

4.8 The student will investigate and understand the relationships among Earth, the moon, and the sun.

Key concepts include:

- a) the motions of Earth, the moon and the sun;
- b) the causes for Earth's seasons;
- c) the causes for the phases of the moon;
- d) the relative size, position, age, and makeup of Earth, the moon, and the sun; and
- e) historical contributions in understanding the Earth-moon- sun system.

Earth Resources

4.9 The student will investigate and understand important Virginia natural resources.

Key concepts include:

- a) watershed and water resources;
- b) animals and plants;
- c) minerals, rocks, ores, and energy sources; and
- d) forests, soil, and land.

HISTORY AND SOCIAL SCIENCE

Introduction to History and the Social Sciences

The standards for fourth grade are covered in a two-year study of Virginia in fourth and fifth grades. In the first year of studying Virginia, grade four introduces students to a contemporary geographic regional investigation of Virginia. Students should begin to focus on the historical study of Virginia from early exploration to the American Revolution. The standards for Virginia Studies allow students to develop a greater understanding of Virginia's rich history.

Geographic, economic, and civic concepts continue to be presented within this contemporary and historic context. Students will develop the skills needed to analyze, interpret, and demonstrate knowledge of important events and ideas in our history, and understand the contributions made by people of diverse

cultural and ethnic backgrounds. Students will use geographic tools to examine the influence of physical and cultural geography on Virginia history. Ideas that form the foundation for political institutions in Virginia and the United States also are included as part of the story of Virginia. The study of history must emphasize the intellectual skills required for responsible citizenship. Students practice these skills as they extend their understanding of the essential knowledge defined by all of the standards for history and social science.

Skills

VS.1 The student will demonstrate skills for historical and geographical analysis and responsible citizenship, including the ability to

- a) identify and interpret artifacts and primary and secondary source documents to understand events in history;
- b) determine cause and effect relationships;
- c) compare and contrast historical events;
- d) draw conclusions and make generalizations;
- e) make connections between past and present;
- f) sequence events in Virginia history;
- g) interpret ideas and events from different historical perspectives;
- h) evaluate and discuss issues orally and in writing;
- i) analyze and interpret maps to explain relationships among landforms, water features, climatic characteristics, and historical events.

Virginia: The Land and Its Inhabitants

VS.2 The student will demonstrate knowledge of the physical geography and native peoples, past and present, of Virginia by

- a) locating Virginia and its bordering states on maps of the United States.
- b) locating and describing Virginia's Coastal Plain (Tidewater), Piedmont, Blue Ridge Mountains, Valley and Ridge, and Appalachian Plateau.
- c) locating and identifying water features important to the early history of Virginia (Atlantic Ocean, Chesapeake Bay, James River, York River, Potomac River, Rappahannock River and Lake Drummond and the Dismal Swamp).
- d) locating three American Indian language groups (the Algonquian, the Siouan, and the Iroquoian) on a map of Virginia.
- e) describing how American Indians related to the climate and their environment to secure food, clothing, and shelter.
- f) describing how archaeologists have recovered new material evidence at sites including Werowocomoco and Jamestown.
- g) identifying and locating the current state – recognized tribes.

Colonization and Conflict: 1607 through the American Revolution

VS.3 The student will demonstrate knowledge of the first permanent English settlement in American by

- a) explaining the reasons for English colonization.
- b) describing how geography influenced the decision to settle at Jamestown.
- c) identifying the importance of the charters of the Virginia Company of London in establishing the Jamestown settlement.
- d) identifying the importance of the General Assembly (1619) as the first representative legislative body in English America.
- e) identifying the importance of the arrival of Africans and English women to the Jamestown settlement.
- f) describing the hardships faced by settlers at Jamestown and the changes that took place to ensure survival.
- g) describing the interactions between the English settlers and the native peoples, including the contributions of Powhatan to the survival of the settlers.

VS.4 The student will demonstrate knowledge of life in the Virginia colony by

- a) explaining the importance of agriculture and its influence on the institution of slavery.
- b) describing how the culture of colonial Virginia reflected the origins of European (English, Scots-Irish German) immigrants, Africans, and American Indians.
- c) explaining the reasons for the relocation of Virginia's capital from Jamestown to Williamsburg to Richmond.
- d) describing how money, barter, and credit were used.
- e) describing everyday life in colonial Virginia.

VS.5 The student will demonstrate knowledge of the role of Virginia in the American Revolution by

- a) identifying the reasons why the colonies went to war with Great Britain as expressed in the *Declaration of Independence*.
- b) identifying the various roles played by whites, enslaved African Americans, free African Americans, and American Indians in the Revolutionary War era, including George Washington, Thomas Jefferson, Patrick Henry, and James Lafayette.
- c) identifying the importance of the Battle of Great Bridge, the ride of Jack Jouett and the American victory at Yorktown.

MUSIC

Music Theory/Literacy

- 4.1 The student will read and notate music, including
1. reading melodies based on a hexatonic scale;

using traditional notation to write melodies containing stepwise motion;
reading two-note accompaniment patterns (bordun);
reading and notating rhythmic patterns that include dotted quarter note followed by an eighth note;
using a system to sight-read melodic and rhythmic patterns;
identifying the meaning of the upper and lower numbers of simple time signatures
($\frac{2}{4}$, $\frac{3}{4}$, $\frac{4}{4}$); and
identifying dynamic markings (e.g., *p*, *mp*, *mf*, *f*).

Performance

- 4.2 The student will sing a varied repertoire of songs alone and with others, including
1. singing with a clear tone quality and correct intonation;

singing diatonic melodies;
singing melodies written on the treble staff;
singing with expression, using dynamics and phrasing;
singing in simple harmony; and
demonstrating proper posture for singing.

- 4.3 The student will play a variety of pitched and non-pitched instruments alone and with others, including
1. playing music of increasing difficulty in two-part ensembles;

playing melodies of increasing difficulty written on the treble staff;
playing a given melody on a recorder or other similar instrument;
playing with expression, using dynamics and phrasing;
accompanying songs and chants with I, IV, and V(V^7) chords; and

demonstrating proper playing techniques.

4.4 The student will perform rhythmic patterns that include dotted quarter note followed by an eighth note.

4.5 The student will respond to music with movement by
1. performing non-choreographed and choreographed movements;

performing traditional folk dances and other music activities; and
creating movement to illustrate rondo (ABACA) musical form.

4.6 The student will create music by
1. improvising melodies and rhythms, using a variety of sound sources;

composing short melodic and rhythmic phrases within specified guidelines; and
using contemporary media and technology.

Music History and Cultural Context

4.7 The student will explore historical and cultural aspects of music by
1. describing four music compositions from four different periods of music history and identifying the composers;

placing musical examples into categories of style;
listening to and describing music from a variety of world cultures; and
examining how music from popular culture reflects the past and influences the present.

4.8 The student will demonstrate audience and participant behaviors appropriate for the purposes and settings in which music is performed.

4.9 The student will compare the relationships between music and other fields of knowledge.

Analysis, Evaluation, and Critique

4.10 The student will analyze music by
1. identifying instruments from a variety of music ensembles visually and aurally;

distinguishing between major and minor tonality;
listening to, comparing, and contrasting music compositions from a variety of cultures and time periods;
identifying elements of music through listening, using music terminology; and
identifying rondo form (ABACA).

4.11 The student will evaluate and critique music by reviewing criteria used to evaluate compositions and performances; and describing performances and offering constructive feedback.

4.12 The student will identify characteristics and behaviors that lead to success as a musician.

Aesthetics

4.13 The student will explain personal preferences for musical works and performances, using music terminology.

4.14 The student will explain how criteria used to value music may vary from one culture to another.

4.15 The student will describe how personal beliefs influence responses to music.

PHYSICAL EDUCATION

4.1 The student will refine movement skills and demonstrate the ability to combine them in increasingly complex movement environments/activities.

- a) **Demonstrate mature form for specialized locomotor, non-locomotor, and manipulative skill combinations in game and modified sports activities, to include overhand throw and catch with a partner while moving, overhand throw to a target for distance, dribbling and passing soccer ball with varying speed while moving, dribbling with non-dominant/non-preferred hand walking and dominant/preferred hand at various speeds,**

- catching thrown objects, striking a ball-with short-handled and long-handled implement, and underhand volley/strike.
- b) Create and perform a partner dance sequence with an apparent beginning, middle, and end that integrates shapes, levels, pathways, and locomotor patterns.
- c) Create and perform a continuous educational gymnastic sequence that combines four or more of the following movements: traveling, balancing, rolling, and other types of weight transfer.
- d) Demonstrate the use of pacing, speed, and endurance in a variety of activities.
- e) Demonstrate the ability to self-pace in a cardiovascular endurance activity.
- f) Provide appropriate feedback to a peer to improve performance.
- g) Create and perform a jump-rope routine (self-turn or long rope).

Anatomical Basis of Movement

- 4.2 The student will identify major structures and begin to apply knowledge of anatomy to explain movement patterns.
- a) Identify and describe the major components of the cardiorespiratory system, to include heart, lungs, and blood vessels.
 - b) Identify major muscle groups, to include deltoid and gluteal.
 - c) Identify major components of the skeletal system, to include sternum, vertebrae, patella, and phalange.
 - d) Locate radial and/or carotid pulse.
 - e) Identify the bones and muscles needed to perform one fitness activity and one skilled movement.
 - f) Identify the concept of closing space during movement sequences.

Fitness Planning

- 4.3 The student will apply knowledge of health-related fitness, gather and analyze data, and set measurable goals to improve fitness levels.
- a) Describe the components of health-related fitness and list associated measurements (cardiorespiratory endurance/aerobic capacity, muscular strength and endurance, flexibility, body composition).
 - b) Analyze baseline data from a standardized health-related criterion-referenced test (Virginia wellness-related criterion-referenced fitness standards, CDC guidelines).
 - c) Create a SMART (specific, measurable, attainable, realistic, timely) goal for at least one health-related component of fitness to improve or maintain fitness level.
 - d) Identify activities that can be done at school and activities that can be done at home to meet fitness goals.
 - e) Analyze post-fitness testing results, and reflect on goal progress/attainment.

Social Development

- 4.4 The student will demonstrate positive interactions with others in cooperative and competitive physical activities.
- a) Identify a group goal and the strategies needed for successful completion while working-productively and respectfully with others.
 - b) Identify and demonstrate conflict-resolution strategies for positive solutions in resolving disagreements.
 - c) Define *etiquette* and demonstrate appropriate etiquette and application of rules and procedures.
 - d) Define *integrity* and describe the importance of integrity in a physical activity setting.

Energy Balance

- 4.5 The student will explain the nutrition and activity components of energy balance.
- a) Identify the number of calories per gram of fat (9), protein (4), and carbohydrates (4).
 - b) Explain the uses of salt and sugar and the harm of excessive salt and sugar intake.
 - c) Describe how the body uses each macronutrient (fat, protein, carbohydrates).
 - d) Calculate the calories per gram of macronutrients for a variety of foods.
 - e) Explain the importance of hydration.
 - f) Compare different hydration choices.
 - g) Explain the role of moderate to vigorous physical activity (MVPA) for energy balance.

ART

Visual Communication and Production

- 4.1 The student will use steps of the art-making process, including brainstorming, preliminary sketching, planning, and reflecting, to generate ideas for and create works of art.
- 4.2 The student will demonstrate craftsmanship in personal works of art.
- 4.3 The student will use imaginative and expressive imagery to create works of art.
- 4.4 The student will create works of art that connect ideas, art forms, or cultural themes to personal experiences.
- 4.5 The student will use the following to express meaning in works of art:
 1. Color—hue, tint, shade, intensity
 2. Texture—actual, implied
 3. Value—shading

4. **Pattern—repetition to imply movement**

5. **Variety—to create interest**

4.6 The student will analyze how line choices affect the intent of a work of art and make selections accordingly.

4.7 The student will make artistic choices to create compositional unity in works of art.

4.8 The student will create the illusion of depth on a two-dimensional surface, using overlapping, size variation, and placement on the picture plane.

4.9 The student will use contour drawing and shading techniques to create observational drawings.

4.10 The student will describe and use hand-building techniques to make a ceramic work of art.

4.11 The student will use craft techniques in works of art.

Art History and Cultural Context

4.12 The student will describe the roles of crafts and artisans in various cultures.

4.13 The student will describe artists and their work.

4.14 The student will compare and contrast characteristics of diverse cultures depicted in works of art.

4.15 The student will identify a variety of artists and art careers.

Analysis, Evaluation, and Critique

4.16 The student will identify ways that works of art from popular culture reflect the past and influence the present.

4.17 The student will compare and contrast abstract, representational, and nonrepresentational works of art.

4.18 The student will analyze works of art based on visual properties and contextual information.

4.19 The student will interpret works of art for multiple meanings.

Aesthetics

4.20 The student will describe how personal beliefs influence responses to works of art.

4.21 The student will formulate questions about aesthetic aspects of works of art.

4.22 The student will explain how criteria used to assess the value of art may vary from one culture to another.

4.23 The student will explain preferences for works of art by responding to aesthetic questions.