

CMS 5th Grade Benchmarks

August 2008 Revision

English Language Arts	Math
<p>Uses word origins (i.e., Greek- and Latin-derived roots and affixes, synonyms, antonyms, and homographs) to analyze the meaning of complex words.</p> <p>Grasps the meaning of unfamiliar vocabulary words through contextual clues within a passage.</p> <p>Identifies grade-level sight words.</p> <p>Demonstrates literal reading comprehension of grade level selections by:</p> <ul style="list-style-type: none"> • locating information, • following directions, • sequencing events, • identifying main idea and details, and • determining cause and effect. <p>Reads 120 to 160 correct words or more per minute.</p> <p>Reads aloud with proper intonation.</p> <p>Understands the meaning of narrative and expository texts by:</p> <ul style="list-style-type: none"> • monitoring comprehension through articulating the strategies used to understand content as well as own reading process; • activating and connecting background knowledge to formulate clear, well-organized reflections through questions, reactions, and opinions (i.e., text-to-self, text-to-text, and text-to-world); • inferring to read critically making informed analysis, judgment, or evaluation about the text; • determining important information by focusing on the difference between what the reader thinks is important and what the author is trying to convey; • summarizes and synthesizes to respond to reading in a way that leads to new insights and original thinking; • identifying literary devices and characteristics of genres; • evaluating author's technique, viewpoint, and persuasive elements, and • distinguishing between fact and opinion. <p>Influences peer opinions and offers constructive feedback in meaningful and sustainable group literature discussions.</p> <p>Speaks in English to convey a clear main idea, using grade level and subject appropriate vocabulary.</p> <p>Speaks in English using proper intonation.</p> <p>Expresses in English an opinion concisely and accurately with supporting ideas and acknowledgement of the opposing viewpoints.</p> <p>Writes a summary for a variety of texts (i.e., fiction and nonfiction) by paraphrasing.</p> <p>Presents orally in English by:</p> <ul style="list-style-type: none"> • speaking clearly and distinctly with appropriate rate, volume, and expression; • pronouncing grade-level appropriate words correctly; • answering questions concisely and accurately with supporting ideas; • using appropriate body language; and • adjusting presentation to meet audience needs. <p>Writes a clear main idea and supports it with details and examples.</p> <p>Writes organized fiction and nonfiction pieces.</p> <p>Edits for:</p> <ul style="list-style-type: none"> • capitalization with proper nouns, adjectives, titles, letters, and direct quotations; • commas to separate clauses and introduction words; • indentation; • proper spelling of high frequency words; and • quotation marks and spacing in dialogue. <p>Demonstrates understanding of grade level basic grammar and usage (i.e., adjectives, adverbs, conjunctions, nouns, prepositions, pronouns, and verbs).</p> <p>Exhibits for appropriate for writing.</p> <p>Uses complex and a variety of sentences.</p> <p>Uses descriptive language and imagery to enhance ideas.</p>	<p>Reads and writes whole numbers and decimals; identifies places in such numbers and the values of the digits in those places; uses expanded notation to represent whole numbers and decimals.</p> <p>Solves problems involving percents and discounts; describes and explain strategies used; identifies the unit whole in situations involving fractions.</p> <p>Identifies prime and composite numbers; factor numbers; finds prime factorizations.</p> <p>Uses numerical expressions involving one or more of the basic four arithmetic operations, grouping symbols, and exponents to give equivalent names for whole numbers; convert between base-10, exponential, and repeated-factor notations.</p> <p>Uses numerical expressions to find and represent equivalent names for fractions decimals, and percents; uses and explains multiplication and division rules to find equivalent fractions and fractions in simplest form; converts between fractions and mixed numbers; converts between fractions, decimals, and percents.</p> <p>Compares and orders whole numbers up to 1,000,000,000 and decimals through thousandths; compares and orders integers between -100 and 0; uses area models, benchmark fractions, and analyses of numerators and denominators to compare and order fractions.</p> <p>Uses mental arithmetic, paper-and-pencil algorithms, and calculators to solve problems involving the addition and subtraction of whole numbers, decimals, and signed numbers; describes the strategies used and explains how they work.</p> <p>Demonstrates automaticity with multiplication facts and proficiency with division facts and extensions.</p> <p>Uses mental arithmetic, paper-and-pencil algorithms, and calculators to solve problems involving the multiplication of whole numbers and decimals and the division of multidigit whole numbers and decimals by whole numbers; expresses remainders as whole numbers or fractions as appropriate; describes the strategies used and explains how they work.</p> <p>Uses mental arithmetic, paper-and-pencil algorithms, and calculators to solve problems involving the addition and subtraction of fractions and mixed numbers; describes the strategies used and explains how they work.</p> <p>Uses area models, mental arithmetic, paper-and-pencil algorithms, and calculators to solve problems involving the multiplication of fractions and mixed numbers; use diagrams, a common denominator method, and calculators to solve problems involving the division of fractions; describes the strategies used.</p> <p>Makes reasonable estimates for whole number and decimal addition, subtraction, multiplication, and division problems and fraction and mixed number addition and subtraction problems; explains how the estimates were obtained.</p> <p>Uses repeated addition, arrays, area, and scaling to model multiplication and division; uses ratios expressed as words, fractions, percents, and with colons; solves problems involving ratios of parts of a set to the whole set.</p> <p>Collects and organizes data or use given data to create bar, line, and circle graphs with reasonable titles, labels, keys, and intervals.</p> <p>Uses the maximum, minimum, range, median, mode, and mean and graphs to ask and answer questions, draw conclusions, and make predictions.</p> <p>Describes events using certain, very likely, likely, unlikely, very unlikely, impossible and other basic probability terms; uses more likely, equally likely, same chance, 50-50, less likely, and other basic probability terms to compare events; explains the choice of language.</p> <p>Predicts the outcomes of experiments, test the predictions using manipulatives, and summarize the results; compare predictions based on theoretical probability with experimental results; uses summaries and comparisons to predict future events; expresses the probability of an event as a fraction, decimal, or percent.</p> <p>Estimates length with and without tools; measures length with tools to the nearest 1/8 inch and millimeter; estimates the measure of angles with and without tools; uses tools to draw angles with given measures.</p> <p>Describes and uses strategies to find the perimeter of polygons and the area of circles; chooses and uses appropriate formulas to calculate the areas of rectangles, parallelograms, and triangles, and the volume of a prism; defines pi as the ratio of a circle's circumference to its diameter.</p> <p>Describes relationships among U.S. customary units of length; among metric units of length; and among U.S. customary units of capacity.</p> <p>Uses ordered pairs of numbers to name, locate, and plot points in all four quadrants of a coordinate grid.</p> <p>Identifies, describes, compares, names, and draws right, acute, obtuse, straight, and reflex angles; determines angle measures in vertical and supplementary angles and by applying properties of sums of angle measures in triangles and quadrangles.</p> <p>Describes, compares, and classifies plane and solid figures using appropriate geometric terms; identifies congruent figures and describes their properties.</p> <p>Identifies, describes, and sketches examples of reflections, translations, and rotations.</p> <p>Extends, describes, and creates numeric patterns; describes rules for patterns and uses them to solve problems; writes rules for functions involving the four basic arithmetic operations; represents functions using words, symbols, tables, and graphs and uses those representations to solve problems.</p> <p>Determines whether number sentences are true or false; solves open number sentences and explain the solutions; uses a letter variable to write an open sentence to model a number story; uses a pan-balance model to solve linear equations with one unknown.</p> <p>Evaluates numeric expressions containing grouping symbols and nested grouping symbols; inserts grouping symbols and nested grouping symbols to make number sentences true; describe and use the precedence of multiplication and division over addition and subtraction.</p> <p>Describes and applies properties of arithmetic.</p> <p>Uses grade level appropriate core concepts and procedures to solve the problem.</p> <p>Chooses and carries out strategies that work to solve grade level problems.</p> <p>Uses pictures, symbols, and/or vocabulary to convey the path to the identifiable solution to grade level problems.</p>

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Science	Social Studies
<p>Describes the layers of the atmosphere.</p> <p>Knows how features on the Earth's surface are constantly changed by a combination of slow and rapid processes (e.g., erosion, global warming).</p> <p>Knows the composition and properties of soil.</p> <p>Knows that reproduction is a characteristic of all living things and is essential to the continuation of a species (e.g., plants and animals).</p> <p>Knows that all organisms are composed of cells, which are the fundamental units of life and that cells convert energy obtained from food to carry on the many functions needed to sustain life.</p> <p>Knows the levels of organization in living systems, including cells, tissues, organs, organ systems, whole organisms, ecosystems, and the complementary nature of structure/function at each level.</p> <p>Knows that multicellular organisms have a variety of specialized cells, tissues, organs, and organ systems that perform specialized functions.</p> <p>Knows that all individuals of a species that exist together at a given place and time make up a population, and all populations living together and the physical factors with which they interact compose a biome.</p> <p>Knows factors that affect the number and types of organisms a biomes can support (e.g., available resources; abiotic factors such as quantity of light and water, range of temperatures, and soil composition).</p> <p>Knows ways in which organisms interact and depend on one another through food chains and food webs in an ecosystem (e.g., producer/consumer, predator/prey, parasite/host, relationships that are mutually beneficial or competitive).</p> <p>Knows how energy is transferred through food webs in a biome (e.g., energy enters biomes as sunlight and green plants transfer this into chemical energy by photosynthesis).</p> <p>Classifies living things in different ways (e.g., groups based on functions within an ecosystem such as producers, consumers, and decomposers).</p> <p>Knows that matter has different states (i.e., solid, liquid, gas) and that each state has distinct physical properties; some common materials such as water can be changed from one state to another by heating or cooling.</p> <p>Knows that the mass of a material remains constant whether it is together, in parts, or in a different state.</p> <p>Knows that substances can be classified by their physical and chemical properties (e.g., magnetism, conductivity, density, solubility, boiling and melting points).</p> <p>Knows that matter is made up of tiny particles called atoms, and different arrangements of atoms into groups compose all substances.</p> <p>Uses grade level appropriate core concepts and principles to solve the problem.</p> <p>Chooses and carries out strategies that work to solve grade level problems.</p> <p>Uses illustrations, graphics, and/or vocabulary to convey the path to the identifiable solution to grade level problems.</p> <p>Conducts investigations and experiments using at least one variable to solve a grade level problem or answer a question using appropriate tools (e.g., formulates a testable question, makes systematic observations, and develops logical conclusions).</p> <p>Formulates hypothesis based on personal experience and readings.</p> <p>Creates grade-level appropriate lab reports.</p>	<p>Knows the location of major cities and major physical and human features of places as represented on maps and globes (e.g., largest cities, bodies of water, historic landmarks, physical and human features).</p> <p>Understands the spatial organization of places through such concepts as location, distance, direction, scale, movement, and region.</p> <p>Knows how the characteristics of places are shaped by physical and human processes (e.g., effects of resources, settlements, and population).</p> <p>Understands how different people living in the same region maintain different ways of life (e.g., the cultural differences between Native Americans and Europeans).</p> <p>Understands cultural change (in terms of, e.g., the role of women in society, modes of transportation, types of housing, attitudes toward the environment and resources).</p> <p>Knows how regions are linked economically and how trade affects the way people earn their living in each region.</p> <p>Knows the geographic factors that have influenced people and events in the past.</p> <p>Knows geographical settings and their influence on, economic activities, food, clothing, homes, crafts, and rituals of Native American societies long ago (e.g., Iroquois and Pueblo, Northwest and Southeast societies).</p> <p>Understands the historical development and daily life of a colonial community.</p> <p>Understands the basic ideas set forth in the Declaration of Independence and the U.S. Constitution, and the figures responsible for these documents and principles (e.g., major terms, why the documents were written, what the signers risked).</p> <p>Understands why Americans colonists and those who led them (e.g., George Washington, Benjamin Franklin, and Thomas Jefferson) went to war to win independence from England.</p> <p>Understands the migration and settlement patterns of peoples in the Americas (e.g., use of the Bering land bridge, European settlers in the Caribbean).</p> <p>Knows the features of the major European explorations that took place between the 15th and 17th centuries (e.g., routes and motives of Spanish, French, Dutch, and English explorers; goals and achievements of major expeditions).</p> <p>Understands peaceful and conflicting interaction between English settlers and Native Americans in the New England, Mid-Atlantic, Chesapeake, and lower South colonies.</p> <p>Understands the influence of Enlightenment ideas on American society (e.g., Benjamin Franklin's experiments with electricity).</p> <p>Understands the factors that shaped the economic system in the colonies and the Americas (e.g., labor systems, natural resources, relations with other countries and the home country).</p> <p>Understands elements of African slavery during the colonial period in North America (e.g., relocation of enslaved Africans to the Caribbean and North America, the slave trade).</p> <p>Understands that a person's point-of-view and expectations reflect personal and group beliefs, experiences, and attitudes.</p> <p>Understands that people often like or dislike others because of personal beliefs, experiences, and/or membership in a particular social group.</p> <p>Knows various forms that institutions take (e.g., religious, social, political).</p> <p>Understands the focus on "the individual" in American society (e.g., a primary purpose of government is to protect the rights of the individual).</p> <p>Knows that the Constitution describes how the government is organized, defines and limits the powers of government, and is the highest law in the land.</p> <p>Knows that the government was created by people who had the following beliefs: the government is established by and for the people, the people have the right to choose their representatives, and the people have the right to change their government and the Constitution.</p> <p>Understands that different currencies are used in trade.</p>