

# CMS 4<sup>th</sup> Grade Benchmarks

*August 2008 Revision*

English Language Arts	Math
<p>Identifies complex word structures (i.e., contractions, plurals, compound words, prefixes, root words, suffixes, Greek- and Latin-derived roots and affixes, synonyms, antonyms, and homographs) to grasp the meaning of unfamiliar.</p> <p>Grasps the meaning of unfamiliar vocabulary words through contextual clues within a paragraph.</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"> <li>• locating information,</li> <li>• following directions,</li> <li>• sequencing events,</li> <li>• identifying main idea and details, and</li> <li>• determining cause and effect.</li> </ul> <p>Reads 120 to 150 correct words per minute.</p> <p>Reads aloud with expression guided by punctuation, text features (e.g., bold font, onomatopoeias), and contextual clues.</p> <p>Understands the meaning of narrative and expository texts by:</p> <ul style="list-style-type: none"> <li>• monitoring comprehension through the use of a variety of strategies (e.g., sequencing, making predictions, rereading);</li> <li>• activating and connecting background knowledge to new information (i.e., text-to-self and text-to-text);</li> <li>• asking questions to understand information and big or underlying ideas,</li> <li>• inferring to reveal big ideas and themes supported by evidence from the text;</li> <li>• determining important information by analyzing story elements (i.e., characterization, setting, plot and conflict resolution);</li> <li>• summarizing and synthesizing by telling what is important without telling too much;</li> <li>• identifying literary devices and characteristics of genres;</li> <li>• evaluating author's technique, viewpoint, and persuasive elements; and</li> <li>• distinguishing between fact and opinion.</li> </ul> <p>Generates thoughtful responses in 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 clearly using appropriate pace, expression, volume, facial/body gestures, and appropriate to the purpose of communication, topic, and audience.</p> <p>Expresses in English an opinion concisely and accurately with supporting details.</p> <p>Presents orally in English by:</p> <ul style="list-style-type: none"> <li>• speaking clearly and distinctly with appropriate rate, volume, and expression;</li> <li>• pronouncing grade-level appropriate words correctly;</li> <li>• answering questions concisely and accurately;</li> <li>• using appropriate body language; and</li> <li>• adjusting presentation to meet audience needs with assistance.</li> </ul> <p>Writes a clear main idea and supports it with details.</p> <p>Organizes ideas in a logical sequence in fiction and nonfiction writing.</p> <p>Edits for: capitalization with proper nouns, titles, letters, and direct quotations; commas in lists, locations, and letters; apostrophes in singular and plural possessives; indentation; and proper spelling of high frequency words.</p> <p>Demonstrates understanding of grade level basic grammar and usage (i.e., adjectives, adverbs, conjunctions, nouns, pronouns, and verbs).</p> <p>Exhibits voice appropriate for writing, with guidance.</p> <p>Uses simple and compound sentences.</p> <p>Uses appropriate vocabulary to express ideas and enhance meaning.</p>	<p>Reads and writes whole numbers up to 1,000,000,000 and decimals through thousandths; identifies places in such numbers and the values of the digits in those places between whole numbers and decimals represented in words and in base-10 notation.</p> <p>Reads, writes, and models fractions; solves problems involving fractional parts of a region or a collection; describes and explains strategies used; given a fractional part of a region or a collection, identify the unit whole.</p> <p>Finds multiples of whole numbers less than 10; finds whole-number factors of numbers.</p> <p>Uses numerical expressions involving one or more of the basic four arithmetic operations and grouping symbols to give equivalent names for whole numbers.</p> <p>Uses numerical expressions to find and represent equivalent names for fractions and decimals; uses and explains a multiplication rule to find equivalent fractions; renames fourths, fifths, tenths, and hundredths as 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>Demonstrates automaticity with basic addition and subtraction facts and fact extensions.</p> <p>Uses manipulatives mental arithmetic, paper-and-pencil algorithms, and calculators to solve problems involving the addition and subtraction of whole numbers and decimals through hundredths; describes strategies used.</p> <p>Demonstrates automaticity with multiplication facts through <math>10 \times 10</math> and proficiency with related division facts; uses basic facts to compute fact extensions such as <math>30 \times 60</math>.</p> <p>Uses mental arithmetic, paper-and-pencil algorithms, and calculators to solve problems involving the multiplication of multidigit whole numbers by 2-digit whole numbers and the division of multidigit whole numbers by 1-digit whole numbers; describes the strategies used and explain how they work.</p> <p>Uses manipulatives, mental arithmetic, and calculators to solve problems involving the addition and subtraction of fractions with like and unlike denominators; describe the strategies used.</p> <p>Makes reasonable estimates for whole number and decimal addition and subtraction problems and whole number multiplication and division problems; explains how the estimates were obtained.</p> <p>Uses repeated addition, skip counting, arrays, area, and scaling to model multiplication and division.</p> <p>Collects and organizes data or use given data to create charts, tables, bar graphs, line plots, and line graphs.</p> <p>Uses the maximum, minimum, range, median, mode, and graphs to ask and answer questions, draws conclusions, and makes 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 and test the predictions using manipulatives; summarizes the results and use them to predict future events; expresses the probability of an event as a fraction.</p> <p>Estimates length with and without tools; measures length to the nearest <math>\frac{1}{4}</math> inch and <math>\frac{1}{2}</math> centimeter; estimates the size of angles without tools.</p> <p>Describes and uses strategies to measure the perimeter and area of polygons, to estimate the area of irregular shapes, and to find the volume of rectangular prisms.</p> <p>Describes relationships among U.S. customary units of length and among metric units of length.</p> <p>Uses ordered pairs of numbers to name, locate, and plot points in the first quadrant of a coordinate grid.</p> <p>Identifies, draws, and describes points, intersecting and parallel line segments and lines, rays, and right, acute, and obtuse angles.</p> <p>Describes, compares, and classifies plane and solid figures, including polygons, circles, spheres, cylinders, rectangular prisms, cones, cubes, and pyramids, using appropriate geometric terms including vertex, base, face, edge, and congruent.</p> <p>Identifies, describes, and sketches examples of reflections; identify and describes examples of translations and rotations.</p> <p>Extends, describes, and creates numeric patterns; describes rules for patterns and uses them to solve problems; uses words and symbols to describe and writes rules for functions that involve the four basic arithmetic operations and uses those rules to solve problems.</p> <p>Uses conventional notation to write expressions and number sentences using the four basic arithmetic operations; determines whether number sentences are true or false; solves open sentences and explain the solutions; writes expressions and number sentences to model number stories.</p> <p>Evaluates numeric expressions containing grouping symbols; inserts them to make number sentences true.</p> <p>Applies the Distributive Property of Multiplication over Addition to the partial-products multiplication algorithm.</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>

# CMS 4<sup>th</sup> Grade Benchmarks

*August 2008 Revision*

Science	Social Studies
<p>Understands the water cycle.</p> <p>Knows the composition of the air.</p> <p>Describes the atmosphere.</p> <p>Describes Earth's water distribution and sources (ex. ocean, salt, fresh, rivers, underground).</p> <p>Knows what volcanoes and earthquakes can tell us about the Earth.</p> <p>Classifies rocks and minerals.</p> <p>Understands basic facts about the Solar System.</p> <p>Knows a variety of instruments that scientists use to learn about space.</p> <p>Knows the basic elements that makeup and effect an ecosystem.</p> <p>Knows forms and sources of energy.</p> <p>Knows that heat energy flows from warmer materials or regions to cooler ones through conduction, convection, and radiation.</p> <p>Knows how the Sun acts as a major source of energy.</p> <p>Understands the concepts of motion (relative position, speed, acceleration, inertia, and forces).</p> <p>Understands general concepts related to gravitational force.</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 pictures, symbols, and/or vocabulary to convey the path to the identifiable solution to grade level problems.</p> <p>Knows that scientific investigations involve asking and answering a question and comparing the answer to what scientists already know about the world.</p> <p>Conducts simple investigations and experiments to solve a grade level problem or answer a question using appropriate tools (e.g., makes systematic observations, develops logical conclusions).</p> <p>Uses hypothesis from scientists.</p> <p>Records steps of the scientific process stating a conclusion and comparing results.</p>	<p>Knows and describes physical characteristics of a region and how they change over time (to include population distribution).</p> <p>Knows the advantages and disadvantages of the relationship between population and resource use (e.g., the three R's: renew, reuse, and recycle).</p> <p>Knows natural hazards that occur in the physical environment (e.g., floods, wind storms, tornadoes, earthquakes).</p> <p>Knows and understands reasons for migrations (US and others).</p> <p>Understands how human characteristics make specific regions of the world distinct (cultural background, food, language, and music).</p> <p>Knows how to construct time lines in significant historical developments that mark at evenly spaced intervals the years, decades, and centuries.</p> <p>Understands the interactions that occurred between the Native Americans and the first European explorers and settlers in the state or region.</p> <p>Knows about European explorers of the 15th and 16th centuries, their reasons for exploring, the information gained from their journeys, and what happened as a result of their travels (e.g., Christopher Columbus, Marco Polo, Eric the Red, Zheng He, Ferdinand Magellan, Vasco de Gama, Jacques Cartier).</p> <p>Understands that people can learn about others in many different ways (e.g., direct experience, mass communications media, conversations with others about their work and lives).</p> <p>Understands that people might feel uncomfortable around other people who dress, talk, or act very differently from themselves.</p> <p>Understands that "acceptable" human behavior varies from culture to culture and from one time period to another, but there are some behaviors that are "unacceptable" in almost all cultures, past and present.</p> <p>Understands that various factors (e.g., interests, capabilities, values) contribute to the shaping of a person's identity.</p> <p>Knows the basic purposes and characteristics of democracy in the United States (e.g., to protect the rights of individuals, to promote the common good).</p> <p>Knows characteristics of an effective rule or law.</p> <p>Knows reasons why diversity is so prevalent in the United States.</p> <p>Knows some of the benefits of diversity (e.g., it fosters a variety of viewpoints, new ideas, and fresh ways of looking at and solving problems; it provides people with choices in the arts, music, literature, and sports; it helps people appreciate cultural traditions and practices other than their own).</p> <p>Knows how to distinguish among national, state, and local governments.</p> <p>Knows the major responsibilities of the legislative, executive, and judicial branches.</p> <p>Knows the characteristics of citizenship and noncitizenship.</p> <p>Knows what constitutes economic rights and why they are important (e.g., to own property, choose one's work).</p> <p>Knows that all productive resources are all natural resources, human resources, and capital resources used to produce goods and to provide services.</p> <p>Knows that entrepreneurs are people who use resources to produce innovative goods and services they hope people will buy.</p> <p>Understands that when productive resources are used to produce one good or service, the opportunity cost (i.e., what is given up) is other goods and services that would have been made with the same resources if the chosen good or service had not been made.</p>