

Optimum Resource Inc.'s MiddleWare Software

California Standards - Fourth Grade Mathematics	Math Word Problems
NUMBER SENSE	
1.0 Students understand the place value of whole numbers & decimals to two decimal places & how whole numbers & decimals relate to simple fractions. Students use the concepts of negative numbers	
Read & write whole numbers in the millions	
Order & compare whole numbers & decimals to two decimal places	
Round whole numbers through the millions to the nearest ten, hundred, thousand, ten thousand, or hundred thousand	
Decide when a rounded solution is called for & explain why such a solution may be appropriate	
Explain different interpretations of fractions, parts of a whole, parts of a set, & division of whole numbers by whole numbers' explain equivalents of fractions	
Write tenths & hundredths in decimal & fraction notations & know the fraction & decimal equivalents for halves & fourths	
Write the fraction represented by a drawing of parts of a figure; represent a given fraction by using drawings; & relate a fraction to a simple decimal on a number line	
Use concepts of negative numbers	
Identify on a number line the relative position of positive fractions, positive mixed numbers, & positive decimals to two decimal places	
2.0 Students extend their use & understanding of whole numbers to the addition & subtraction of simple decimals	✓
Estimate & compute the sum or difference of whole numbers & positive decimals to two places	✓
Round two-place decimals to one decimal or the nearest whole number & judge the reasonableness of the rounded answer	

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3.0 Students solve problems involving addition, subtraction, multiplication & division of whole numbers & understand the relationships among the operations	✓
Demonstrate an understanding of, & the ability to use, standard algorithms for multiplying a multidigit	✓
number by a two-digit number & for dividing a multidigit number by a one-digit number; use relationships	
between them to simplify computations & to check results	
Solve problems involving multiplication of multidigit numbers by two-digit numbers	✓
Solve problems involving division of multidigit numbers by one-digit numbers	✓
4.0 Students know how to factor small whole numbers	
Understanding that many whole numbers break down in different ways	
Know that numbers such as 2, 3, 5, 7, and 11 do not have any factors except 1 & themselves & that such	
numbers are called prime numbers	
ALGEBRA AND FUNCTIONS	
1.0 Students use & interpret variables, mathematical symbols, & properties to write & simplify expressions & sentences	✓
Use letters, boxes, or other symbols to stand for any number in simple expressions or equations	
Interpret & evaluate mathematical expressions that now use parentheses	
Use parentheses to indicate which operation to perform first when writing expressions containing more	
than two terms & different operations	
Use & interpret formulas to answer questions about quantities & their relationships	
Understand that an equation such as $y=3x +5$ is a prescription for determining a second number when a	✓
first number is given	
2.0 Students know how to manipulate equations	
Know & understand that equals added to equals are equals	
Know & understand the equals multiplied by equals are equal	
MEASUREMENT AND GEOMETRY	
1.0 Students Understand Perimeter and area	
Measure the area of rectangular shapes by using appropriate units, such as square centimeter, square meter,	
square kilometer, square inch, square yard	

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Recognize that rectangles that have the same area can have different perimeters	
Understand that rectangles that have the same perimeter can have different areas	
Understand & use formulas to solve problems involving perimeters & areas of rectangles & squares,	
use those formulas to find the areas of more complex figures by dividing the figures into basic shapes	
2.0 Students use two-dimensional coordinate grids to represent points & graph lines & simple figures	
Draw the points corresponding to linear relationships on graph paper	
Understand that the length of a horizontal line segment equals the difference of the x-coordinates	
Understand that the length of a vertical line segment equals the difference of the y-coordinates	
3.0 Students demonstrate an understanding of plane & solid geometric objects & use this knowledge to show relationships & solve problems	
Identify lines that are parallel & perpendicular	
Identify the radius & diameter of a circle	
Identify congruent figures	
Identify figures that have bilateral & rotational symmetry	
Know the definitions of a right angle, an acute angle, & an obtuse angle. Understand that 90, 180, 270, & 360	
are associated, respectively, with $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ and full turns	
Visualize, describe, & make models of geometric solids in terms of the number & shape of faces, edges,	
& vertices; interpret two-dimensional representations of three-dimensional objects; & draw patterns for a	
solid that, when cut & folded, will make a model of the solid	
Know the definitions of different triangles	
Know the definition of different quadrilaterals	
STATISTICS, DATA ANALYSIS, & PROBABILITY	
1.0 Students organize, represent, & interpret numerical & categorical data & clearly communicate their findings	
Formulate survey questions; systematically collect & represent data on a number line; & coordinate graphs,	
tables, & charts	

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Identify the mode(s) for sets of categorical data & the mode(s), median, & any apparent outliers for numerical data sets	
Interpret one-and two-variable data graphs to answer questions about a situation	
2.0 Students make predictions for simple probability situations	
Represent all possible outcomes for a simple probability situation in an organized way	
Express outcomes of experimental probability situations verbally & numerically	
MATHEMATICAL REASONING	
1.0 students make decisions about how to approach problems	
Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, sequencing & prioritizing information, & observing patterns	
Determine when and how to break a problem into simpler parts	
2.0 Students use strategies, skills, & concepts in finding solutions	✓
Use estimation to verify the reasonableness of calculated results	
Apply strategies & results from simpler problems to more complex problems	
Use a variety of methods, such as words, numbers, symbols, charts, graphs tables, diagrams & models, to explain mathematical reasoning	
Estimate unknown quantities graphically & solve for them by using logical reasoning & arithmetic & algebraic techniques	
Express the solution clearly & logically by using the appropriate mathematical notation & terms & clear language, support solutions with evidence in both verbal symbolic work	
Indicate the relative advantages of exact & approximate solutions to problems & give answers to a specified degree of accuracy	✓
Make precise calculations & check the validity of the results from the context of the problem	✓

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3.0 Students move beyond a particular problem by generalizing to other situations	✓
Evaluate the reasonableness of the solution in the context of the original situation	✓
Note the method of deriving the solution & demonstrate a conceptual understanding of the derivation by solving similar problems	✓
Develop generalizations of the results obtained & apply them in other	