

# 5<sup>th</sup> GRADE KID-FRIENDLY MATH STANDARDS

Standards Being Tested	FIFTH GRADE-MATH	Check for Progress 1	Check for Progress 2	Check for Progress 3	Check for Progress 4	Check for Progress 5
	By the end of grade five, students increase their facility with the four basic arithmetic operations applied to fractions, decimals, and positive and negative numbers. They know and use common measuring units to determine length and area and know and use formulas to determine the volume of simple geometric figures. Students know the concept of angle measurements and use a protractor and compass to solve problems. They use grids, tables, graphs, and charts to record and analyze data.					
<b>29 ITEMS 45%</b>	<b>NUMBER SENSE</b>					
	<b>1.0</b> <i>Students compute with very large and very small numbers, positive integers, decimals, and fractions. Students understand the relationship between decimals, fractions and percents. They understand the relative magnitudes of numbers.</i>					
1	<b>1.1</b> <ul style="list-style-type: none"> <li>• I can estimate very large (into the millions) and very small (into the thousandths) numbers.</li> <li>• I can round very large (into the millions) and very small (into the thousandths) numbers.</li> <li>• I can manipulate very large (into the millions) and very small (into the thousandths) numbers.</li> </ul>					
5	<b>1.2*</b> <ul style="list-style-type: none"> <li>• I understand why we could describe percents as parts of a hundred. (Example: 75%=.75=75/100)</li> <li>• I understand how to change percents to parts of a hundred.</li> <li>• I can find decimal equivalents for common fractions. (Example: <math>\frac{3}{4} = .75</math>) <ul style="list-style-type: none"> <li><input type="checkbox"/> I can explain why they represent the same value.</li> </ul> </li> <li>• I can find percent equivalents for common fractions. (Example: <math>\frac{3}{4} = .75 = 75\%</math>) <ul style="list-style-type: none"> <li><input type="checkbox"/> I can explain why they represent the same value.</li> </ul> </li> <li>• I can calculate what number is a given percent of a whole number. (Example: 75% of 40= _____? 75% of 40= <u>30</u> )</li> </ul>					
1	<b>1.3</b> <ul style="list-style-type: none"> <li>• I understand what the term "power" means when discussing math. ( Example: "Two to the 3<sup>rd</sup> power" = <math>2 \times 2 \times 2</math>, written as <math>2^3</math> )</li> <li>• When the power (in the example above, the power, or exponent, is 3) is a positive whole number, and the value brought to that power (Above example: 2) is also a positive whole number, I can compute the answer. (Example: <math>2^3 = \underline{\quad}</math>? <math>2^3 = \underline{8}</math> )</li> <li>• I can show that the calculation of power is repeated multiplication. ( Example: <math>2^3 = 2 \times 2 \times 2</math> )</li> </ul>					
3	<b>1.4*</b> <ul style="list-style-type: none"> <li>• I know how to find the prime factors of all numbers through 50.</li> <li>• I can write numbers as the product (answer to a multiplication problem) of their prime factors.</li> <li>• I can use exponents to show multiples of a factor. (Example: <math>24 = 2 \times 2 \times 2 \times 3 = 2^3 \times 3</math>)</li> </ul>					
2	<b>1.5*</b> <ul style="list-style-type: none"> <li>• I can tell what number is shown on a number line by describing it as a: <ul style="list-style-type: none"> <li><input type="checkbox"/> Decimal</li> <li><input type="checkbox"/> Fraction</li> <li><input type="checkbox"/> Mixed number</li> <li><input type="checkbox"/> Positive or negative integer</li> </ul> </li> <li>• I can show the place on a number line for values described to me in each of those ways.</li> </ul>					

\* Key standards (Mathematics Framework for California Public Schools, chapter 3) comprise a minimum of 70% of the test

\*\* Fractional values indicate rotated standards (e.g.,  $\frac{1}{2}$ =rotated every two years;  $\frac{1}{3}$ =rotated every three years)

\*\*\* Not assessable in a multiple-choice format

Embedded: Content of standard is embedded within items in other strands

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Standards Being Tested	FIFTH GRADE-MATH (cont)	Check for Progress 1	Check for Progress 2	Check for Progress 3	Check for Progress 4	Check for Progress 5
	<b>2.0</b> <i>Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:</i>					
7	2.1* <ul style="list-style-type: none"> <li>• I can accurately add, subtract, multiply and divide with decimals.</li> <li>• I can add with negative integers.</li> <li>• I can subtract positive integers from negative integers.</li> <li>• I can verify the reasonableness of the results.</li> </ul>					
3	2.2* <ul style="list-style-type: none"> <li>• I can demonstrate that I am accurate in doing division.</li> <li>• I can divide with positive decimals.</li> <li>• I can solve long division problems with multi-digit divisors.</li> </ul>					
5	2.3* <ul style="list-style-type: none"> <li>• I can solve simple problems, including adding and subtracting problems with fractions and mixed numbers (with like and unlike denominators of 20 or less).</li> <li>• I can set up and solve adding and subtracting problems with fractions and mixed numbers when I find them in a word problem or other problem situation.</li> <li>• I show the answers in the simplest form (I reduce my fractions).</li> </ul>					
1	2.4 <ul style="list-style-type: none"> <li>• I understand how to multiply and divide fractions.</li> <li>• I understand what it means to multiply or divide by a fraction.</li> </ul>					
1	2.5 <ul style="list-style-type: none"> <li>• I can do simple multiplication and division of fractions.</li> <li>• I can use these tools to solving problems.</li> </ul>					
<b>17 ITEMS 26%</b>	<b>ALGEBRA AND FUNCTIONS</b>					
	<b>1.0</b> <i>Students use variables in simple expressions, compute the value of the expression for specific values of the variable, and plot and interpret the results.</i>					
1	1.1 <ul style="list-style-type: none"> <li>• I use information taken from a graph or equation to answer questions about a problem situation.</li> </ul>					
6	1.2* <ul style="list-style-type: none"> <li>• I use a letter variable to represent an unknown number.</li> <li>• I write simple algebraic expressions.</li> <li>• I can use substitution to solve simple algebraic expressions to one variable.</li> </ul>					
1	1.3 <ul style="list-style-type: none"> <li>• I know and use the distributive property in equations and expressions with variables.</li> </ul>					
4	1.4* <ul style="list-style-type: none"> <li>• I can show which ordered pair on a coordinate plane is being described.</li> <li>• I can correctly place, or graph, ordered pairs in the four quadrants of the coordinate plane.</li> </ul>					
5	1.5* <ul style="list-style-type: none"> <li>• I solve problems involving linear functions with integer values. (Example: <math>y=2x+1</math>; if <math>x=3</math>, <math>y=</math>____? <math>y=7</math>)</li> <li>• I can write the equation; and graph the resulting ordered pairs of integers on a grid.</li> </ul>					

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Standards Being Tested		FIFTH GRADE-MATH (cont)	Check for Progress 1	Check for Progress 2	Check for Progress 3	Check for Progress 4	Check for Progress 5
17 ITEMS 26%		<b>MEASUREMENT AND GEOMETRY</b>					
	1.0	<b><i>Students understand and compute the volumes and areas of simple objects:</i></b>					
2 $\frac{1}{2}$ **	1.1*	<ul style="list-style-type: none"> <li>I can use the formula for finding the area for a rectangle to see how to find the formula for the area of a triangle.</li> <li>I can use the formula for finding the area for a rectangle to see how to find the formula for the area of a parallelogram. (Example: two of the same triangles make a parallelogram with twice the area; a parallelogram is compared with a rectangle of the same area by cutting and pasting a right triangle on the parallelogram).</li> </ul>					
$\frac{1}{2}$ **	1.2*	<ul style="list-style-type: none"> <li>I can make a cube from a two-dimensional pattern.</li> <li>I can make a rectangular box from a two-dimensional pattern.</li> <li>I can use these patterns to compute the surface area of these objects.</li> </ul>					
3	1.3*	<ul style="list-style-type: none"> <li>I understand the concept of volume.</li> <li>I use the appropriate units in common measuring systems (cubic inches [in<sup>3</sup>], cubic feet [ft.<sup>3</sup>], cubic centimeters [cm<sup>3</sup>], cubic meters [m<sup>3</sup>]) to compute the volume of rectangular solids.</li> </ul>					
1	1.4	<ul style="list-style-type: none"> <li>I know the difference between, and I use the appropriate units to measure the perimeter and area of two-dimensional objects.</li> <li>I know the difference between, and I use the appropriate units to measure the surface area and volume of three-dimensional objects.</li> <li>I know the difference between two- and three-dimensional units and when to use each.</li> </ul>					
	2.0	<b><i>Students identify, describe, and classify the properties of, and the relationships between, plane and solid geometric figures:</i></b>					
3	2.1*	<ul style="list-style-type: none"> <li>I can measure, identify and draw angles, perpendicular and parallel lines, rectangles and triangles by using the straightedge, protractor, and compass as tools.</li> </ul>					
4	2.2*	<ul style="list-style-type: none"> <li>I know the sum of angles of any triangle is 180° and the sum of the angles in any quadrilateral is 360°.</li> <li>I use this information to solve problems.</li> </ul>					
1	2.3	<ul style="list-style-type: none"> <li>I can use my imagination to visualize two-dimensional views of three-dimensional objects that are made from rectangular solids. (I can imagine what an object made of groups of rectangular shapes would look like when seen from a particular point of view.)</li> <li>I can draw two-dimensional views of three-dimensional objects made from rectangular solids. (I can draw the shape I see in my mind.)</li> </ul>					
4 ITEMS 6%		<b>STATISTICS, DATA, ANALYSIS AND PROBABILITY</b>					
	1.0	<b><i>Students display, analyze, compare, and interpret different data sets, including data sets of different sizes.</i></b>					
1/3**	1.1	<ul style="list-style-type: none"> <li>I know the difference between mean, median, and mode.</li> <li>I know how to compute the mean, median, and mode of a data set.</li> <li>I can compare simple examples of data sets to show that they may differ.</li> </ul>					
1/3**	1.2	<ul style="list-style-type: none"> <li>I can organize and display single-variable data in appropriate graphs and representations (e.g., histogram, circle graphs).</li> <li>I can explain which types of graphs are appropriate for various data sets.</li> </ul>					
1/3**	1.3	<ul style="list-style-type: none"> <li>I use fractions and percentages to compare data sets of different sizes.</li> </ul>					
2 $\frac{1}{2}$ **	1.4*	<ul style="list-style-type: none"> <li>I can identify ordered pairs of data from a graph.</li> <li>I can describe what the data in the graph tells me about the situation depicted by the graph.</li> </ul>					
$\frac{1}{2}$ **	1.5	<ul style="list-style-type: none"> <li>I know how to write ordered pairs correctly; for example, (x,y).</li> </ul>					

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Embedded		<b>MATHEMATICAL REASONING</b>					
Embedded	<b>1.0</b>	<b><i>Students make decisions about how to approach problems:</i></b>					
Embedded	1.1	<ul style="list-style-type: none"> <li>• I analyze problems by               <ul style="list-style-type: none"> <li><input type="checkbox"/> identifying relationships.</li> <li><input type="checkbox"/> distinguishing relevant from irrelevant information.</li> <li><input type="checkbox"/> sequencing and prioritizing information.</li> <li><input type="checkbox"/> observing patterns.</li> </ul> </li> </ul>					
Embedded	1.2	<ul style="list-style-type: none"> <li>• I know when and how to break a problem into simpler parts.</li> </ul>					
Embedded	<b>2.0</b>	<b><i>Students use strategies, skills, and concepts in finding solutions:</i></b>					
Embedded	2.1	<ul style="list-style-type: none"> <li>• I use estimation to verify the reasonableness of calculated results.</li> </ul>					
Embedded	2.2	<ul style="list-style-type: none"> <li>• I apply strategies and results from simpler problems to figure out more complex problems.</li> </ul>					
Embedded	2.3	<ul style="list-style-type: none"> <li>• I use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.</li> </ul>					
Embedded	2.4	<ul style="list-style-type: none"> <li>• I express the solution clearly and logically</li> <li>• I write the problem, do the work, and write the solution using the correct symbols.</li> <li>• I clearly describe my problem, process and solution using the right words.</li> <li>• I support my work with both verbal and written evidence.</li> </ul>					
Embedded	2.5	<ul style="list-style-type: none"> <li>• I can describe the relative advantages of using an exact or an approximate solution to a problem</li> <li>• I can give answers to a specified degree of accuracy.</li> </ul>					
Embedded	2.6	<ul style="list-style-type: none"> <li>• I make precise calculations and check the validity of the results from the context of the problem.</li> </ul>					
Embedded	<b>3.0</b>	<b><i>Students move beyond a particular problem by generalizing to other situations.</i></b>					
Embedded	3.1	<ul style="list-style-type: none"> <li>• I evaluate the reasonableness of the solution in the context of the original situation.</li> </ul>					
Embedded	3.2	<ul style="list-style-type: none"> <li>• I notice the method for finding the solution.</li> <li>• I apply the method by using it to solve similar problems.</li> </ul>					
Embedded	3.3	<ul style="list-style-type: none"> <li>• I show that I can see a pattern in the solutions found and apply this knowledge to other circumstances.</li> </ul>					
<b>65 ITEMS</b>		<b>MATH TOTAL</b>					

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