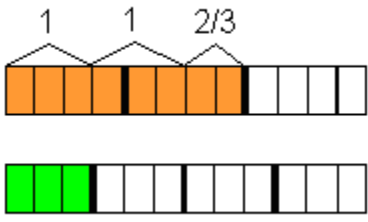


Benchmark Results

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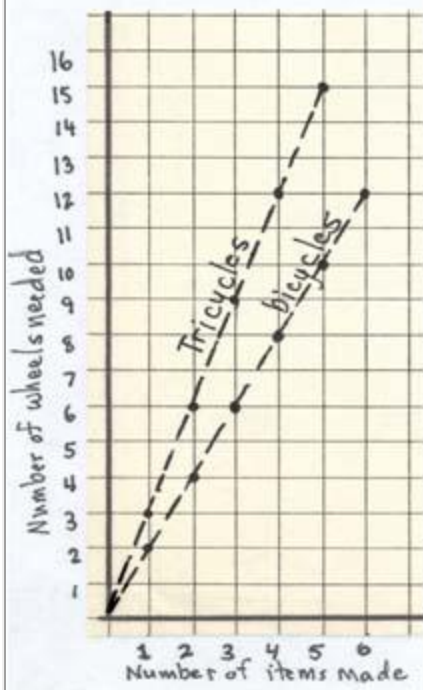
Benchmark#	Description	Remarks/Example	Idea/Standard	Subject	Grade	Body Of Knowledge/ Strand	Cognitive/Con	Rati
MA.6.A.1.1	Explain and justify procedures for multiplying and dividing fractions and decimals.	<p>For division of fractions, students might use drawings, manipulatives, and symbolic notation to describe how and explain why they can find a common denominator and then divide just the numerators to find the quotient.</p> <p>Example: In order to divide $\frac{2}{3}$ by $\frac{1}{4}$, a student may reason that $\frac{2}{3} = \frac{8}{12}$ and $\frac{1}{4} = \frac{3}{12}$. So, $(\frac{2}{3}) \div (\frac{1}{4})$ is equivalent to $(\frac{8}{12}) \div (\frac{3}{12})$, which gives the same result as $8 \div 3 = 2 \frac{2}{3}$. The following picture is a representation that matches the above explanation:</p>  <p>In the following fraction multiplication examples, students may use drawings or physical objects to represent the problems and explain their solution.</p> <p>Example 1: One-half of your yard is garden. One-fourth of your garden is a vegetable garden. What fraction of your yard is a vegetable garden? Draw a picture and write a number sentence that both describe the problem and</p>	BIG IDEA 1	1	6	Algebra	Level Basi App of S Con	

		<p>solution.</p> <p><u>Pizza Parlor Scenarios</u></p> <p>Example 2: A cook made four pizzas that had $\frac{3}{5}$ of a package of mushrooms on each. How many packages of mushrooms were used?</p> <p>Example 3: Sue ate some pizza. $\frac{2}{3}$ of a pizza is left over. Jim ate $\frac{3}{4}$ of the left over pizza. How much of a whole pizza did Jim eat?</p> <p>Example 4: A party dessert pizza measures $\frac{2}{3}$ of a yard by $\frac{3}{4}$ of a yard. How much of a square yard is the party dessert pizza?</p> <p>Example 5: There was $\frac{4}{5}$ of a pound of pizza dough leftover in the freezer from the previous day. The cook thawed out $\frac{3}{8}$ of the leftover dough. How much of a pound of dough did the cook thaw?</p>					
MA.6.A.1.2	Multiply and divide fractions and decimals efficiently.	Students may learn techniques such as mental math or specified algorithms to perform these operations.	BIG IDEA 1	1	6	Algebra	Level Rec
MA.6.A.1.3	Solve real-world problems involving multiplication and division of fractions and	<p>This standard includes finding the solution to multi-step problems.</p> <p>Example: How many quarter-pound hamburgers can be made</p>	BIG IDEA 1	1	6	Algebra	Level Strat Thir Com Reas

	decimals.	from 3 1/2 pounds of ground beef?					
MA.6.A.2.1	Use reasoning about multiplication and division to solve ratio and rate problems.	Example: Four items cost \$5.00 and all items are the same price. Explain how to find the cost for 9 items.	BIG IDEA 2	1	6	Algebra	Level Strategic Thinking Communication Reasoning
MA.6.A.2.2	Interpret and compare ratios and rates.	Example: Jessica made 8 out of 24 free throws. Bob made 5 out of 20 free throws. Who has the highest free throw ratio? Ratios may be represented in various forms such as simple drawings or multiplication tables.	BIG IDEA 2	1	6	Algebra	Level Basic Application of Skills Communication
MA.6.A.3.1	Write and evaluate mathematical expressions that correspond to given situations.	Example: A plant is 3 cm high on Day 1. Each day after that the plant grows 2 cm taller. Assume that the plant grows at the same rate. Make a table and graph that show the height of the plant for Days 1 through 10. Write an expression to show the height on day n.	BIG IDEA 3	1	6	Algebra	Level Basic Application of Skills Communication
MA.6.A.3.2	Write, solve, and graph one- and two- step linear equations and inequalities.	The context should include patterns, models and relationships. Students should explore how "greater than or equal to" and strictly "greater than" are similar and different. A number line is a useful tool for modeling situations and inequalities such as "You have to be at least 40 inches tall to a ride roller coaster." and " $x = 40$ ". Graphing on coordinate plane is still limited to the first quadrant, but they can explore negative and positive integers on number line.	BIG IDEA 3	1	6	Algebra	Level Basic Application of Skills Communication

		<p>Example: The height of a tree was 7 inches in the year 2000. Each year the same tree grew an additional 10 inches. Write an equation to show the height h of the tree in y years. Let y be the number of years after the year 2000. Graph the height of the tree for the first 20 years.</p> <p>The most literal equation might be $7 + 10y = h$.</p>																	
MA.6.A.3.3	Work backward with two-step function rules to undo expressions.	<p>Example: Sam set a function machine to multiply by 3, and then to add 4. He showed his chart to Wanda. How can Wanda find the missing input number?</p> <table border="1"> <thead> <tr> <th>IN</th> <th>OUT</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>7</td> </tr> <tr> <td>5</td> <td>19</td> </tr> <tr> <td>20</td> <td>64</td> </tr> <tr> <td>100</td> <td>304</td> </tr> <tr> <td>?</td> <td>79</td> </tr> </tbody> </table>	IN	OUT	1	7	5	19	20	64	100	304	?	79	BIG IDEA 3	1	6	Algebra	Level Basic App of S Con
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MA.6.A.3.4	Solve problems given a formula.	<p>Example: The pressure exerted by a solid object on a solid surface can be calculated by using the formula, $P = \frac{F}{A}$, where the variables P, F, and A represent pressure, force, and area respectively. A newly refinished wood floor can withstand a pressure of up to 40 pounds per square inch without sustaining damage. A 120 pound woman with high heels and a 240 pound man with flat heels each enter this room. Assume that at some point all of their weight is supported equally by the heels of both of their shoes. Given that each of the woman's heels occupies an area of 0.25 in^2 and each of the man's heels occupies an area of 12 in^2, find out each person's potential for causing damage to the wood floor. Justify your answer.</p>	BIG IDEA 3	1	6	Algebra	Level Basic App of S Con												


		If a 15,000 pound African elephant with feet that each has an area of 100 in^2 were to stand on this floor, would it cause damage to the floor? Explain your answer. Compare the three cases with each other.					
MA.6.A.3.5	Apply the Commutative, Associative, and Distributive Properties to show that two expressions are equivalent.	Example: Is $7(m+2)$ the same as $7m + 2$ or $7m + 14$? Explain your choice.	BIG IDEA 3	1	6	Algebra	Level Basic App of S Con
MA.6.A.3.6	Construct and analyze tables, graphs, and equations to describe linear functions and other simple relations using both common language and algebraic notation.	Example 1: Each unicycle made needs 1 wheel. Explain why $w=u$ where w is the number of wheels and u is the number of unicycles describes this relationship. Example 2: Each bicycle made needs 2 wheels. Explain why $w=2b$ where w is the number of wheels and b is the number of bicycles describes this relationship. Example 3: Each tricycle made needs 3 wheels. Explain why $w=3t$ where w is the number of wheels and t is the number of tricycles describes this relationship. Example 4: Below is a graph of the relationships in Examples 2 and 3. Explain why one of the lines is steeper than the other line.	BIG IDEA 3	1	6	Algebra	Level Strat Thir Com Reas



What would the graph of $w=u$ look like?

MA.6.A.5.1	Use equivalent forms of fractions, decimals, and percents to solve problems.	Example: John scored 75% on a test and Mary has 8 out of 12 correct on the same test. Each test item is worth the same amount of points. Who has the better score?	Number and Operations	1	6	Algebra	Level: Basic Application of Skills Concepts
MA.6.A.5.2	Compare and order fractions, decimals, and percents, including finding their approximate location on a number line.	Example: Approximate the location of each of these values on a number line: $\frac{2}{3}$, 0.57, and 0.575.	Number and Operations	1	6	Algebra	Level: Basic Application of Skills Concepts
MA.6.A.5.3	Estimate the results of computations with fractions, decimals, and percents, and judge the	Example: Amy bought 5 notebooks at \$3.61 each. She estimated how much she needs to pay and gave the cashier \$15. Is Amy's estimation appropriate? Explain your reasoning.	Number and Operations	1	6	Algebra	Level: Basic Application of Skills Concepts

	reasonableness of the results.						
MA.6.G.4.1	Understand the concept of Pi, know common estimates of Pi (3.14; 22/7) and use these values to estimate and calculate the circumference and the area of circles.	Using various circular objects, students determine that the ratio of circumference to diameter approximates the value of Pi.	Geometry and Measurement	1	6	Geometry	Level Basic App of S Con
MA.6.G.4.2	Find the perimeters and areas of composite two-dimensional figures, including non-rectangular figures (such as semicircles) using various strategies.	Example: Students see that the formula for the area of a circle is plausible by decomposing a circle into a number of wedges and rearranging them into shapes that approximates a parallelogram. Example: Students might trace their foot on a piece of grid paper and use the full squares and the partial squares to estimate the area of the bottom of their foot.	Geometry and Measurement	1	6	Geometry	Level Basic App of S Con
MA.6.G.4.3	Determine a missing dimension of a plane figure or prism given its area or volume and some of the dimensions, or determine the area or volume given the dimensions.	Example: The volume of a rectangular prism is 112 cubic cm. The length is 7 cm, and the height is 8 cm. What is the depth of the prism? Example: The figure below shows the floor of a living room. The rectangular part is covered with a carpet that covers a 22 square feet area. The house owner wants to cover the triangular part with carpet as well. Use the information provided in figure to determine the minimum	Geometry and Measurement	1	6	Geometry	Level Basic App of S Con

		<p>additional carpet that will need to be purchased to cover the floor.</p> 					
MA.6.S.6.1	<p>Determine the measures of central tendency (mean, median, mode) and variability (range) for a given set of data.</p>	<p>Students should make frequency tables for numerical or categorical data, grouping data in different ways to investigate how different groupings describe the data.</p> <p>This is the first time in 2007 Florida mathematics standards that students are expected to use mean, median, mode, and range in a formal sense to describe a set of data.</p>	Data Analysis	1	6	Statistics	Level Recall
MA.6.S.6.2	<p>Select and analyze the measures of central tendency or variability to represent, describe, analyze, and/or summarize a data set for the purposes of answering questions appropriately.</p>	<p>A teacher can give students data sets that contain test/quiz grades for hypothetical classes. Students are asked to calculate and compare the class mean, median, mode, and range and discuss the effects of any outliers on the measures of central tendency.</p>	Data Analysis	1	6	Statistics	Level Strategic Thinking Complex Reasoning