

5<sup>th</sup> Grade Math

Power Standard: none		
M.O.5.4.6	estimate and/or measure the weight/mass of real objects in ounces, pounds, grams, and kilograms.	DOK 2
	<ul style="list-style-type: none"> <li>Estimate the weight/mass of real objects in ounces</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>Estimate the weight/mass of real objects in pounds</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>Estimate the weight/mass of real objects in grams</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>Estimate the weight/mass of real objects in kilograms</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>Measure the weight/mass of real objects in ounces</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Measure the weight/mass of real objects in pounds</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Measure the weight/mass of real objects in grams</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Measure the weight/mass of real objects in kilograms</li> </ul>	Performance
Power Standard: <i>Students will construct a circle or circle graph with a given radius or diameter or real world data and present their data and draw conclusions; and create designs with more than one line of symmetry.</i>		
M.O.5.5.3	collect and organize real-world data to construct a circle graph (with and without technology), present data and draw conclusions.	DOK 2
	<ul style="list-style-type: none"> <li>Collect real-world data to construct a circle graph (with and without technology)</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Collect real-world data to present data</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Collect real-world data to draw conclusions</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Organize real-world data to construct a circle graph (with and without technology)</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Organize real-world data to present data</li> </ul>	Performance

	<ul style="list-style-type: none"> <li>Organize real-world data to draw conclusions</li> </ul>	Performance
M.O.5.3.4	construct a circle with a given radius or diameter.	DOK 4
	<ul style="list-style-type: none"> <li>Construct a circle with a given radius</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Construct a circle with a given diameter</li> </ul>	Performance
M.O.5.3.3	create a design with more than one line of symmetry.	DOK 3
		Performance
<p><i>Power Standard: Students will model, calculate, and compare area of triangles and classify, compare, and measure them; describe and justify the effects on the perimeter and area when the shape is changed in some way.</i></p>		
M.O.5.4.4	describe the effects on the measurements of a two-dimensional shape (such as its perimeter and area) when the shape is changed in some way, justify changes.	DOK 2
	<ul style="list-style-type: none"> <li>Describe the effects on the measurements of two-dimensional shape when the shape is changed in some way</li> </ul>	Reasoning/Performance
	<ul style="list-style-type: none"> <li>Justify the effects on the measurements of two-dimensional shape when the shape is changed in some way</li> </ul>	Reasoning
M.O.5.4.2	model, calculate and compare area of triangles and parallelograms using multiples strategies (including, but not limited to, formulas).	DOK 2
	<ul style="list-style-type: none"> <li>Model area of a triangle using multiple strategies</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Calculate area of a triangle using multiple strategies</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>Model area of a parallelogram using multiple strategies</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Calculate area of a parallelogram using multiple strategies</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>Compare area of triangles and parallelograms using multiple strategies</li> </ul>	Reasoning
M.O.5.3.1	classify and compare triangles by sides and angles; measure the angles of a triangle using a protractor.	DOK 2
	<ul style="list-style-type: none"> <li>Classify triangles by sides</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>Classify triangles by angles</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>Compare triangles by sides</li> </ul>	Reasoning

	<ul style="list-style-type: none"> <li>• Compare triangles by angles</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>• Measure angles of a triangle using a protractor</li> </ul>	Performance
<i>Power Standard: Students will construct, analyze and determine volume for three-dimensional shapes and solve application problems.</i>		
M.O.5.3.2	construct and analyze three-dimensional shapes using properties (i.e. edges, faces or vertices).	DOK 3
	<ul style="list-style-type: none"> <li>• Construct three-dimensional shapes using properties</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>• Analyze three-dimensional shapes using properties</li> </ul>	Reasoning
M.O.5.4.3	develop strategies (i.e. finding number of same sized units of volume)to determine the volume of a rectangular prism; solve application problems involving estimating or measuring volume of rectangular prisms.	DOK 2
	develop strategies to determine the volume of a rectangular prism	Performance
	solve application problems involving estimating volume of rectangular prisms	Reasoning/Performance
<i>Power Standard: Students will demonstrate an understanding of measureable attributes of objects and the units, systems, and processes of measurement and solve real-world problems requiring conversion within a system of measurement and demonstrate an understanding of scale drawings.</i>		
M.O.5.4.8	determine the actual measurements of a figure from a scale drawing, using multiple strategies.	DOK 2
		Performance
M.O.5.3.5	draw a similar figure using a scale, given a real-world situation.	DOK 2
		Performance
M.O.5.4.1	estimate, measure, compare, order and draw lengths of real objects in parts of an inch up to 1/8 of an inch and millimeters.	DOK 2
	<ul style="list-style-type: none"> <li>• estimate lengths of real objects in parts of an inch up to 1/8 of an inch and millimeters.</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>• measure lengths of real objects in parts of an inch up to 1/8 of an inch and millimeters.</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>• compare lengths of real objects in parts of an inch up to 1/8 of an inch millimeters.</li> </ul>	Reasoning

	<ul style="list-style-type: none"> <li>order lengths of real objects in parts of an inch up to 1/8 of an inch and millimeters.</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>draw lengths of real objects in parts of an inch up to 1/8 of an inch and millimeters.</li> </ul>	Performance
M.O.5.4.5	solve real-world problems requiring conversions within a system of measurement.	DOK 2
		Performance/Reasoning
Power Standard: Collect and analyze data using statistical measures and construct tables, charts, and graphs to draw inferences or verify predictions; collect, record, estimate, and calculate elapsed times.		
M.O.5.5.4	collect and analyze data using mean, median and mode to determine the best statistical measure.	DOK 2
	<ul style="list-style-type: none"> <li>collect data using mean, median and mode to determine the best statistical measure.</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>analyze data using mean, median and mode to determine the best statistical measure.</li> </ul>	Reasoning
M.O.5.4.7	collect, record, estimate and calculate elapsed times from real-world situations (with and without technology).	DOK 2
	<ul style="list-style-type: none"> <li>Collect elapsed times from real-world situations with technology</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Collect elapsed times from real-world situations without technology</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Record elapsed times from real-world situations with technology</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Record elapsed times from real-world situations without technology</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Estimate elapsed times from real-world situations with technology</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>Estimate elapsed times from real-world situations without technology</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>Calculate elapsed times from real-world situations with technology</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Calculate elapsed times from real-world situations without technology</li> </ul>	Performance
M.O.5.5.2	construct tables, charts, and graphs including stem and leaf plots to draw reasonable inferences or verify predictions.	DOK 2
	read tables, charts, and graphs including stem	Knowledge/Reasoning

	and leaf plots to draw reasonable inferences or verify predictions.	
	interpret tables, charts, and graphs including stem and leaf plots to draw reasonable inferences or verify predictions.	Reasoning
	construct, read, and interpret tables, charts, and graphs including stem and leaf plots to draw reasonable inferences or verify predictions.	Performance
M.O.5.3.1	classify and compare triangles by sides and angles; measure the angles of a triangle using a protractor.	DOK 2
Power Standard: None		
M.O.5.2.3	solve simple equations and inequalities using patterns and models of real-world situations, create graphs on number lines of the equations and interpret the results.	DOK 3
	<ul style="list-style-type: none"> <li>Solve simple equations using patterns</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Solve simple equations using models of real-world situations</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Solve simple inequalities using patterns</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Solve simple inequalities using models of real-world situations</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Create graphs on number lines of the equations</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Interpret results</li> </ul>	Reasoning
Power Standard: Use inductive reasoning to find missing elements in a variety of patterns (including input/output models); model, identify, and describe square, prime, and composite numbers and utilize standard and expanded form in any whole number.		
M.O.5.2.1	use inductive reasoning to find missing elements in a variety of patterns (e.g., square numbers, arithmetic sequences).	DOK 3
		Reasoning/Performance
M.O.5.2.2	given an input/output model using two operations, determine the rule, output or input.	DOK 2
		Reasoning/Performance
M.O.5.2.4	model identify and describe square, prime and composite numbers.	DOK 3
	<ul style="list-style-type: none"> <li>Model prime numbers</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Identify prime numbers</li> </ul>	Knowledge

	<ul style="list-style-type: none"> <li>Describe prime numbers</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>Model composite numbers</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>Identify composite numbers</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>Describe composite numbers</li> </ul>	Knowledge
M.O.5.1.2	demonstrate an understanding of place value of each digit utilizing standard and expanded form in any whole number using powers of 10 [(3 X 10 <sup>5</sup> ) + (4 X 10 <sup>3</sup> ) + (7 X 10 <sup>2</sup> ) + (1 X 10 <sup>1</sup> ) + 6].	DOK 2
	demonstrate an understanding of place value of each digit utilizing standard form in any whole number using powers of 10	Performance
	demonstrate an understanding of place value of each digit utilizing expanded form in any whole number using powers of 10	Performance
Power Standard: Apply the distributive property and divisibility rules of 2, 3, 5, 9 and 10 and demonstrate fluency in number operations.		
M.O.5.1.8	apply the distributive property as it relates to multiplication over addition.	DOK 2
		Performance
M.O.5.1.10	demonstrate fluency in addition, subtraction, multiplication and division of whole numbers.	DOK 3
	<ul style="list-style-type: none"> <li>demonstrate fluency in addition of whole numbers.</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>demonstrate fluency in subtraction of whole numbers.</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>demonstrate fluency in multiplication of whole numbers.</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>demonstrate fluency in division of whole numbers.</li> </ul>	Knowledge
M.O.5.1.9	Solve multi-digit whole number division problems using a variety of strategies, including the standard algorithm and justify the solutions.	DOK 2
	Solve multi-digit whole number division problems using a variety of strategies	Performance
	Justify whole number division problems using a variety of strategies	Reasoning
M.O.5.1.4	use inductive reasoning to identify the divisibility rules of 2, 3, 5, 9 and 10 and apply the rules to solve application problems.	DOK 1
	<ul style="list-style-type: none"> <li>use inductive reasoning to identify the divisibility rules of 2, 3, 5, 9 and 10 and</li> </ul>	Reasoning/Performance

	apply the rules to solve application problems.	
	<ul style="list-style-type: none"> <li>use inductive reasoning to identify the divisibility rule of 2 and apply the rule to solve application problems.</li> </ul>	Reasoning/Performance
	<ul style="list-style-type: none"> <li>use inductive reasoning to identify the divisibility rule of 3 and apply the rule to solve application problems.</li> </ul>	Reasoning/Performance
	<ul style="list-style-type: none"> <li>use inductive reasoning to identify the divisibility rules of 5 and apply the rule to solve application problems.</li> </ul>	Reasoning/Performance
	<ul style="list-style-type: none"> <li>use inductive reasoning to identify the divisibility rule of 9 and apply the rule to solve application problems.</li> </ul>	Reasoning/Performance
Power Standard: Model, write, read, write equivalences, and order fractions, percents, decimals, and ratios & determine and apply GCF & LCM.		
M.O.5.1.6	model and write equivalencies of fractions, decimals, percents, and ratios.	DOK 2
	<ul style="list-style-type: none"> <li>Model equivalencies of fractions</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>model equivalencies of decimals</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>model equivalencies of percents</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>model equivalencies of ratios</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>write equivalencies of fractions</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>write equivalencies of decimals</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>write equivalencies of percents</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>write equivalencies of ratios</li> </ul>	Knowledge
M.O.5.1.1	read, write, order and compare all whole numbers, fractions, mixed numbers and decimals using multiple strategies (e.g., symbols, manipulatives, number line).	DOK 2
	<ul style="list-style-type: none"> <li>Read whole numbers using multiple strategies</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>Write whole numbers using multiple strategies</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>Order whole numbers using multiple strategies</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>Compare whole numbers using multiple</li> </ul>	Reasoning

	strategies	
	<ul style="list-style-type: none"> <li>• Read fractions using multiple strategies</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>• Write fractions using multiple strategies</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>• Order fractions using multiple strategies</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>• Compare fractions using multiple strategies</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>• Read mixed numbers using multiple strategies</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>• Write mixed numbers using multiple strategies</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>• Order mixed numbers using multiple strategies</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>• Compare mixed numbers using multiple strategies</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>• Read decimals using multiple strategies</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>• Write decimals using multiple strategies</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>• Order decimals using multiple strategies</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>• Compare decimals using multiple strategies</li> </ul>	Reasoning
M.O.5.1.5	determine and apply greatest common factor and lowest common multiple to write equivalent fractions and to real-world problem situations.	DOK 2
	<ul style="list-style-type: none"> <li>• Determine greatest common factor (GCF) to write equivalent fractions</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>• Determine lowest common multiple to write equivalent fractions</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>• Apply greatest common factor to real-world problem situations</li> </ul>	Performance/Reasoning
	<ul style="list-style-type: none"> <li>• Apply lowest common multiple to real-world situations</li> </ul>	Performance/Reasoning
Power Standard: Students will solve real-world problems involving whole numbers, decimals and fractions using multiple strategies (including estimation) and justify the reasonableness using benchmarks.		
M.O.5.1.7	analyze and solve application problems and justify reasonableness of solution in problems involving addition and subtraction of: <ul style="list-style-type: none"> <li>• fractions and mixed numbers</li> <li>• decimals.</li> </ul>	DOK 1
	<ul style="list-style-type: none"> <li>• analyze application problems involving</li> </ul>	Reasoning

	addition of fractions	
	<ul style="list-style-type: none"> <li>analyze application problems involving addition of mixed numbers</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>analyze application problems involving addition of decimals</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>analyze application problems involving subtraction of fractions</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>analyze application problems involving subtraction of mixed numbers</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>analyze application problems involving subtraction of decimals</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>solve application problems involving addition of fractions</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>solve application problems involving addition of mixed numbers</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>solve application problems involving addition of decimals</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>solve application problems involving subtraction of fractions</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>solve application problems involving subtraction of mixed numbers</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>solve application problems involving subtraction of decimals</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>justify reasonableness of solution involving addition of fractions</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>justify reasonableness of solution problems involving addition of mixed numbers</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>justify reasonableness of solution involving addition of decimals</li> </ul>	Reasoning

	<ul style="list-style-type: none"> <li>justify reasonableness of solution involving subtraction of fractions</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>justify reasonableness of solution involving subtraction of mixed numbers</li> </ul>	Reasoning
	<ul style="list-style-type: none"> <li>justify reasonableness of solution involving subtraction of decimals</li> </ul>	Reasoning
M.O.5.1.11	solve real-world problems involving whole numbers, decimals and fractions using multiple strategies and justify the reasonableness by estimation.	DOK 2
	<ul style="list-style-type: none"> <li>solve real-world problems involving whole numbers using multiple strategies</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>solve real-world problems involving decimals using multiple strategies</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>solve real-world problems involving fractions using multiple strategies</li> </ul>	Performance
	<ul style="list-style-type: none"> <li>justify the reasonableness by estimation</li> </ul>	Reasoning
M.O.5.1.3	estimate solutions to problems involving whole numbers, decimals, fractions, and percents to determine reasonableness using benchmarks.	DOK 2
	<ul style="list-style-type: none"> <li>estimate solutions to problems involving whole numbers to determine reasonableness using benchmarks.</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>estimate solutions to problems involving decimals to determine reasonableness using benchmarks.</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>estimate solutions to problems involving fractions to determine reasonableness using benchmarks.</li> </ul>	Knowledge
	<ul style="list-style-type: none"> <li>estimate solutions to problems involving percents to determine reasonableness using benchmarks.</li> </ul>	Knowledge
<b>Power Standard: None</b>		
M.O.5.5.1	construct a sample space and make a hypothesis as to the probability of a real life situation overtime, test the prediction with experimentation, and present conclusions (with and without technology).	DOK 4
	<ul style="list-style-type: none"> <li>construct a sample space as to the</li> </ul>	Product

	probability of a real life situation overtime	
	<ul style="list-style-type: none"> <li>• make a hypothesis as to the probability of a real life situation overtime</li> </ul>	Product
	<ul style="list-style-type: none"> <li>• test the prediction with experimentation</li> </ul>	Product
	<ul style="list-style-type: none"> <li>• present conclusions with technology</li> </ul>	Product
	<ul style="list-style-type: none"> <li>• present conclusions without technology</li> </ul>	Product