

Georgia
Georgia Performance Standards (GPS)
Mathematics - Grade 6
Correlations with Gourmet Curriculum Press, Inc.®
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Concepts / Skills to Maintain

- Operations with decimal fractions
- Addition and subtraction of common fractions and mixed numbers with unlike denominators such as 2, 3, 4, 5, 6, 8, 10 and 12
- Modeling multiplication of common fractions
- Modeling percent
- Graphing data
- Multiples and factors
- Perimeter, capacity and area of geometric figures
- Evaluating algebraic expressions

<i>Benchmark Number</i>	<i>Benchmark</i> • <i>Instructional Target</i>	<i>Gourmet Resource</i>	<i>Taught</i>	<i>Tested</i>
M 6 N.	<i>Number and Operations</i>			
	Students will understand the meaning of the four arithmetic operations as related to positive rational numbers and will apply these concepts and associated skills in real world situations.			
M 6 N 1.	Students will understand the meaning of the four arithmetic operations as related to positive rational numbers and will apply these concepts and associated skills in real world situations.			
a.	• <i>Apply factors and multiples.</i>	Appetizers 1 D; Main Dish Objective 1 (Number Concepts)		

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b.	• <i>Decompose numbers into their prime factorization (Fundamental Theorem of Arithmetic).</i>	Appetizers 1 D; Main Dish Objective 1 (Number Concepts)		
c.	• <i>Determine the greatest common factor (GCF) and the least common multiple (LCM) for a set of numbers.</i>	Appetizers 1 D; Main Dish Objective 1 (Number Concepts)		
d.	• <i>Add and subtract fractions and mixed numbers with unlike denominators.</i>	Appetizers 6 C; 7 B; Main Dish Objectives 6 (Addition); 7 (Subtraction)		
e.	• <i>Multiply and divide fractions and mixed numbers.</i>	Appetizers 9 G; Main Dish Objective 9 (Division)		
f.	• <i>Use fractions, decimals, and percents interchangeably.</i>	Appetizers 1 E; Main Dish Objective 1 (Number Concepts)		
g.	• <i>Solve problems involving fractions, decimals, and percents.</i>	Appetizers 1 E; Main Dish Objective 1 (Number Concepts); Practice Applications; Final Tests; Reasonableness Problems		
M 6 M.	<i>Measurement</i>			
	Students will understand how to determine the volume and surface area of solid figures. They will understand and use the customary and metric systems of measurement to measure quantities efficiently and to represent volume and surface area appropriately.			

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M 6 M 1.	Students will convert from one unit to another within one system of measurement (customary or metric) by using proportional relationships.			
M 6 M 2.	Students will use appropriate units of measure for finding length, perimeter, area and volume and will express each quantity using the appropriate unit.			
a.	• <i>Measure length to the nearest half, fourth, eighth, and sixteenth of an inch.</i>	Appetizers 4 C; Main Dish Objective 4 (Measurement)		
b.	• <i>Select and use units of appropriate size and type to measure length, perimeter, area, and volume.</i>	Appetizers 4 D & E; Main Dish Objective 4 (Measurement)		
c.	• <i>Compare and contrast units of measure for perimeter, area, and volume.</i>	Appetizers 4 E; Main Dish Objective 4 (Measurement)		
M 6 M 3.	Students will determine the surface area of solid figures (right rectangular prisms and cylinders).			
a.	• <i>Determine the formula for finding the volume of fundamental solid figures.</i>	N/A		
b.	• <i>Compute the volumes of fundamental solid figures, using appropriate units of measure.</i>	N/A		
c.	• <i>Estimate the volumes of simple geometric solids.</i>	Appetizers 4 E; Main Dish Objective 4 (Measurement)		
d.	• <i>Solve application problems involving the volume of fundamental solid figures.</i>	Appetizers 4 E; Main Dish Objective 4 (Measurement)		

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M 6 M 4.	Students will determine the surface area of solid figures (right rectangular prisms and cylinders).			
a.	• <i>Find the surface area of right rectangular prisms and cylinders using manipulatives and constructing nets.</i>	N/A		
b.	• <i>Compute the surface area of right rectangular prisms and cylinders using formulae.</i>	N/A		
c.	• <i>Estimate the surface areas of simple geometric solids.</i>	Appetizers 4 D; Main Dish Objective 4 (Measurement)		
d.	• <i>Solve application problems involving surface area of right rectangular prisms and cylinders.</i>	Appetizers 4 D; Main Dish Objective 4 (Measurement); Practice Applications; Final Tests; Reasonableness Problems		
M 6 G.	<i>Geometry</i>			
	Students will further develop their understanding of plane and solid figures, incorporating the use of appropriate technology and using this knowledge to solve authentic problems.			
M 6 G 1.	Students will further develop their understanding of plane figures.			
a.	• <i>Determine and use lines of symmetry.</i>	Appetizers 3 C; Main Dish Objective 3 (Geometry)		
b.	• <i>Investigate rotational symmetry, including degree of rotation.</i>	Appetizers 3 B; Main Dish Objective 3 (Geometry)		

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c.	• <i>Use the concepts of ratio, proportion and scale factor to demonstrate the relationships between similar plane figures.</i>	Appetizers 2 C; Main Dish Objective 2 (Mathematical Relations)		
d.	• <i>Interpret and sketch simple scale drawings.</i>	N/A		
e.	• <i>Solve problems involving scale drawings.</i>	N/A		
M 6 G 2.	Students will further develop their understanding of solid figures.			
a.	• <i>Compare and contrast right prisms and pyramids.</i>	N/A		
b.	• <i>Compare and contrast cylinders and cones.</i>	N/A		
c.	• <i>Interpret and sketch front, back, top, bottom and side views of solid figures.</i>	N/A		
d.	• <i>Construct nets for prisms, cylinders, pyramids, and cones.</i>	N/A		
M 6 A.	<i>Algebra</i>			
	Students will investigate relationships between two quantities. They will write and solve proportions and simple one-step equations that result from problem situations.			
M 6 A 1.	Students will understand the concept of ratio and use it to represent quantitative relationships.			

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M 6 A 2.	Students will consider relationships between varying quantities.			
a.	<ul style="list-style-type: none"> Analyze and describe patterns arising from mathematical rules, tables, and graphs. 	Appetizers 2 B & D; Main Dish Objective 2 (Mathematical Relations)		
b.	<ul style="list-style-type: none"> Use manipulatives or draw pictures to solve problems involving proportional relationships. 	N/A		
c.	<ul style="list-style-type: none"> Use proportions ($a/b = c/d$) to describe relationships and solve problems, including percent problems. 	Appetizers 1 E; Main Dish Objective 1 (Number Concepts)		
d.	<ul style="list-style-type: none"> Describe proportional relationships mathematically using $y = kx$, where k is the constant of proportionality. 	Appetizers 1 E; Main Dish Objective 1 (Number Concepts); Cooperative Learning		
e.	<ul style="list-style-type: none"> Graph proportional relationships in the form $y = kx$ and describe characteristics of the graphs. 	Appetizers 5 B; Main Dish Objective 5 (Probability/Statistics)		
f.	<ul style="list-style-type: none"> In a proportional relationship expressed as $y = kx$, solve for one quantity given values of the other two. Given quantities may be whole numbers, decimals, or fractions. Solve problems using the relationship $y = kx$. 	Appetizers 5 B; Main Dish Objective 5 (Probability/Statistics)		
g.	<ul style="list-style-type: none"> Use proportional reasoning ($a/b = c/d$ and $y = kx$) to solve problems. 	N/A		
M 6 A 3.	Students will evaluate algebraic expressions, including those with exponents, and solve simple one-step equations using each of the four basic operations.			

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M 6 D.	<i>Data Analysis and Probability</i>			
	Students will demonstrate understanding of data analysis by posing questions to be answered by collecting data. They will represent, investigate, and use data to answer those questions. Students will understand experimental and theoretical probability.			
M 6 D 1.	Students will pose questions, collect data, represent and analyze data, and interpret results.			
a.	<ul style="list-style-type: none"> Formulate questions that can be answered by data. Students should collect data by using samples from a larger population (surveys), or by conducting experiments. 	Appetizers 5 A; Main Dish Objective 5 (Probability/Statistics)		
b.	<ul style="list-style-type: none"> Using data, construct frequency distributions, frequency tables, and graphs. 	Appetizers 5 C; Main Dish Objective 5 (Probability/Statistics)		
c.	<ul style="list-style-type: none"> Choose appropriate graphs to be consistent with the nature of the data (categorical or numerical). Graphs should include pictographs, histograms, bar graphs, line graphs, circle graphs, and line plots. 	Appetizers 5 B; Main Dish Objective 5 (Probability/Statistics)		
d.	<ul style="list-style-type: none"> Use tables and graphs to examine variation that occurs within a group and variation that occurs between groups. 	Appetizers 5 D; Main Dish Objective 5 (Probability/Statistics)		
e.	<ul style="list-style-type: none"> Relate the data analysis to the context of the questions posed. 	Appetizers 5 B; Main Dish Objective 5 (Probability/Statistics); Practice Applications; Final Tests; Reasonableness Problems		

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M 6 D 2.	Students will use experimental and simple theoretical probability and understand the nature of sampling. They will also make predictions from investigations.			
a.	• <i>Predict the probability of a given event through trials/simulations (experimental probability), and represent the probability as a ratio.</i>	Appetizers 5 A & D; Main Dish Objective 5 (Probability/Statistics)		
b.	• <i>Determine and use a ratio to represent, the theoretical probability of a given event.</i>	Appetizers 5 A & D; Main Dish Objective 5 (Probability/Statistics)		
c.	• <i>Discover that experimental probability approaches theoretical probability when the number of trials is large.</i>	Appetizers 5 A; Main Dish Objective 5 (Probability/Statistics)		
M 6 P.	<i>Process Standards</i>			
	Each topic studied in this course should be developed with careful thought toward helping every student achieve the following process standards.			
M 6 P 1.	Students will solve problems (using appropriate technology).			
a.	• <i>Build new mathematical knowledge through problem solving.</i>	N/A		
b.	• <i>Solve problems that arise in mathematics and in other contexts.</i>	All Main Dish Objectives; Practice Applications; Final Tests; Reasonableness Problems		
c.	• <i>Apply and adapt a variety of appropriate strategies to solve problems.</i>	All Main Dish Objectives 1-13		
d.	• <i>Monitor and reflect on the process of mathematical problem solving.</i>	All Appetizers; All Main Dish Objectives 1-13		

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M 6 P 2.	Students will reason and evaluate mathematical arguments.			
a.	• <i>Recognize reasoning and proof as fundamental aspects of mathematics.</i>	All Main Dish Objectives 1-13		
b.	• <i>Make and investigate mathematical conjectures.</i>	All Main Dish Objectives 1-13		
c.	• <i>Develop and evaluate mathematical arguments and proofs.</i>	All Main Dish Objectives 1-13		
d.	• <i>Select and use various types of reasoning and methods of proof.</i>	All Main Dish Objectives 1-13		
M 6 P 3.	Students will communicate mathematically.			
a.	• <i>Organize and consolidate their mathematical thinking through communication.</i>	All Appetizers; Games; Cooperative Learning; Enrichment; Journal Topics		
b.	• <i>Communicate their mathematical thinking coherently and clearly to peers, teachers, and others.</i>	All Appetizers; Applications; Final Tests; Reasonableness Problems; Journal Topics		
c.	• <i>Analyze and evaluate the mathematical thinking and strategies of others.</i>	All Main Dish Objectives 1-13		
d.	• <i>Use the language of mathematics to express mathematical ideas precisely.</i>	All Main Dish Objectives 1-13		

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M 6 P 4.	Students will make connections among mathematical ideas and to other disciplines.			
a.	• <i>Recognize and use connections among mathematical ideas.</i>	N/A		
b.	• <i>Understand how mathematical ideas interconnect and build on one another to produce a coherent whole.</i>	Main Dish Objective 13 (Reasonableness)		
c.	• <i>Recognize and apply mathematics in contexts outside of mathematics.</i>	N/A		
M 6 P 5.	Students will represent mathematics in multiple ways.			
a.	• <i>Create and use representations to organize, record, and communicate mathematical ideas.</i>	N/A		
b.	• <i>Select, apply, and translate among mathematical representations to solve problems.</i>	N/A		
c.	• <i>Use representations to model and interpret physical, social, and mathematical phenomena.</i>			

Terms/Symbols:

positive rational numbers, factors, multiples, decompose, prime numbers, prime factorization, Fundamental Theorem of Arithmetic, GCF, LCM, evaluate, surface area, metric system of measurement, customary system of measurement, proportional relationships, right rectangular prism, cylinder, pyramid, cone, geometric solid, net, geometric figures, line symmetry, rotational symmetry, similar plane figures, scale factor, scale drawings, relations, varying quantities, ratio, direct proportion, proportions, proportional reasoning, frequency distributions, pictographs, histograms, bar graphs, line graphs, circle graphs, line plot, frequency table, experimental probability, theoretical probability, sampling, event, random sample, population, non-routine word problems