

**South Carolina
Curricular Standards
Mathematics - Grade 4
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1.800.900.2290**

Benchmark Number	Benchmark • Instructional Targets	Gourmet Resource	Taught	Tested
	Number and Operations			
	I. Understand numbers, ways of representing numbers, relationships among numbers, and number systems.			
A.	Understand the place-value structure of the base-ten numbers system and be able to represent and compare whole numbers and decimals.			
1	<ul style="list-style-type: none"> Explain the place value structure of whole numbers including periods (thousands, millions, billions, etc.). 	Appetizers 1 C; Main Dish Objective 1 (Number Concepts) Lesson 3; Applications; Final Tests; Reasonableness Problems; Journal Topics		
*2	<ul style="list-style-type: none"> Compare decimals (through hundredths) using symbols ($>$, $<$, and $=$) and words (is greater than, is less than, and equals). 	Appetizers 1 E; Main Dish Objective 1 (Number Concepts) Lesson 5; Applications; Final Tests; Reasonableness Problems; Journal Topics		
B.	Recognize equivalent representations for the same number and generate them by decomposing and composing numbers.			
1	<ul style="list-style-type: none"> Write whole numbers in standard form, in expanded form, and in words. 	Appetizers 1 A & C; Main Dish Objective 1 (Number Concepts) Lessons 1 & 3; Applications; Final Tests; Reasonableness Problems; Journal Topics		
C.	Develop understanding of fractions as parts of unit wholes, as parts of a collection, as locations on number lines, and as divisions of whole numbers.			
1	<ul style="list-style-type: none"> Describe fractional parts of collections of objects. 	Appetizers 1 C; Main Dish Objective 1 (Number Concepts) Lesson 3; Applications; Final Tests; Reasonableness Problems; Journal Topics		

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2	<ul style="list-style-type: none"> Locate points on a number line corresponding to a unit fraction and its multiples between 0 and 1. 	Appetizers 2 C; Main Dish Objective 2 (Mathematical Relations) Lesson 3; Applications; Final Tests; Reasonableness Problems; Journal Topics		
D.	Use models, benchmarks, and equivalent forms to judge the size of fractions.			
1	<ul style="list-style-type: none"> Relate the size of fractions to the benchmark fractions of 0, 1/2, and 1. 	Appetizers 1 G; Main Dish Objective 1 (Number Concepts) Lesson 7; Applications; Final Tests; Reasonableness Problems; Journal Topics		
2	<ul style="list-style-type: none"> Compare concrete or pictorial models of fractions using the symbols $>$, $<$, and $=$. 	Appetizers 1 G; Main Dish Objective 1 (Number Concepts) Lesson 7; Applications; Final Tests; Reasonableness Problems; Journal Topics		
E.	Recognize and generate equivalent forms of commonly used fractions, decimals, and percents.			
1	<ul style="list-style-type: none"> Write equivalent forms of commonly used fractions. 	Appetizers 1 H; Main Dish Objective 1 (Number Concepts) Lesson 8; Applications; Final Tests; Reasonableness Problems; Journal Topics		
2	<ul style="list-style-type: none"> Write equivalent forms of decimals. 			
*3	<ul style="list-style-type: none"> Identify and represent common fraction-decimal equivalents. 			

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F.	Explore numbers less than 0 by extending the number line and through familiar applications.			
1	• <i>Identify situations in which numbers less than 0 are used.</i>			
G.	Describe classes of numbers according to characteristics such as the nature of their factors.			
*1	• <i>Determine the factors of a given number up to 50.</i>	Appetizers 8 A; Main Dish Objective 8 (Multiplication) Lesson 1; Applications; Final Tests; Reasonableness Problems; Journal Topics		
*2	• <i>Determine common multiples of pairs of whole numbers each of which is less than or equal to 12.</i>	Appetizers 8 A; Main Dish Objective 8 (Multiplication) Lesson 1; Applications; Final Tests; Reasonableness Problems; Journal Topics		
II. Understand meanings of operations and how they relate to one another.				
A.	Understand various meanings of multiplication and division.			
1	• <i>Explain the meaning of a remainder.</i>	Appetizers 9 A & B; Main Dish Objective 9 (Division) Lessons 1 & 2; Applications; Final Tests; Reasonableness Problems; Journal Topics		
B.	Understand the effects of multiplying and dividing whole numbers.			
1	• <i>Explain the effect on the product when one of the factors is changed.</i>	Appetizers 8 A; Main Dish Objective 8 (Multiplication) Lesson 1; Applications; Final Tests; Reasonableness Problems; Journal Topics		

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2	<ul style="list-style-type: none"> Compare the size of the quotient to the dividend when dividing two whole numbers. 	Appetizers 9 B; Main Dish Objective 9 (Division) Lesson 2; Applications; Final Tests; Reasonableness Problems; Journal Topics		
C.	Identify and use relationships between operations, such as division as the inverse of multiplication, to solve problems.			
*1	<ul style="list-style-type: none"> Use the inverse relationships between multiplication and division to solve problems. 	Appetizers 2 A; Main Dish Objective 2 (Mathematical Relations) Lesson 1; Applications; Final Tests; Reasonableness Problems; Journal Topics		
D.	Understand and use properties of operations, such as the distributivity of multiplication over addition.			
1	<ul style="list-style-type: none"> Recognize commutativity in the multiplication facts. 	Appetizers 2 A; Main Dish Objective 2 (Mathematical Relations) Lesson 1; Applications; Final Tests; Reasonableness Problems; Journal Topics		
2	<ul style="list-style-type: none"> Use the associative and distributive properties to multiply efficiently. 	Appetizers 2 A; Main Dish Objective 2 (Mathematical Relations) Lesson 1; Applications; Final Tests; Reasonableness Problems; Journal Topics		
3	<ul style="list-style-type: none"> Apply divisibility rules for 2, 5, and 10. 			
III. Compute fluently and make reasonable estimates.				
A.	Develop fluency with basic number combinations for multiplication and division and use these combinations to mentally compute related problems, such as 30×50.			
1	<ul style="list-style-type: none"> Use basic number combinations to compute related problems in multiplication and division using multiples of 100 and 1,000. 			

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B.	Develop fluency in adding, subtracting, multiplying, and dividing whole numbers.			
*1	• <i>Construct and analyze algorithms for all operations on whole numbers.</i>	Appetizers 11 A & B; 12 A; Main Dish Objectives 11 (Problem Solving) Lessons 1 & 2; 12 (Mathematical Representation) Lesson 1; Applications; Final Tests; Reasonableness Problems; Journal Topics		
*2	• <i>Demonstrate fluency in the use of a multiplication algorithm and explain the steps involved.</i>	Appetizers 11 B; 12 A; Main Dish Objectives 11 (Problem Solving) Lesson 2; 12 (Mathematical Representation) Lesson 1; Applications; Final Tests; Reasonableness Problems; Journal Topics		
C.	Develop and use strategies to estimate the results of whole-number computations and to judge the reasonableness of such results.			
1	• <i>Round whole numbers to the nearest 10,000, 100,000, and 1,000,000.</i>	Appetizers 1 D; Main Dish Objective 1 (Number Concepts) Lesson 4; Applications; Final Tests; Reasonableness Problems; Journal Topics		
*2	• <i>Estimate and determine the reasonableness of the product of whole numbers (one factor with two digits or less and the other factor with three digits or less).</i>	Appetizers 10 C; Main Dish Objective 10 (Estimation) Lesson 3; Applications; Final Tests; Reasonableness Problems; Journal Topics		
3	• <i>Estimate the quotient of whole numbers with a one-digit divisor, a two-digit divisor, and multiples of 10 and determine the reasonableness of results.</i>			
4	• <i>Refine estimates using terms such as closer to, between, and a little more than.</i>			

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D.	Develop and use strategies to estimate computations involving fractions and decimals in situations relevant to students' experiences.			
1	• <i>Round decimals to the nearest tenth and hundredth.</i>			
2	• <i>Develop and use strategies to estimate sum and difference of decimals.</i>			
E.	Use visual models, benchmarks, and equivalent forms to add and subtract commonly used fractions and decimals.			
1	• <i>Add and subtract decimals through hundredths using concrete and pictorial models.</i>	Appetizers 6 C; 7 C; Main Dish Objectives 6 (Addition) Lesson 3; 7 (Subtraction) Lesson 3; Applications; Final Tests; Reasonableness Problems; Journal Topics		
F.	Select appropriate methods and tools for computing with whole numbers from among mental computations, estimations, calculators, and paper and pencil according to the context and nature of the computation and use the selected method or tool.			
*1	• <i>Explain why a particular method or tool may be the most appropriate one to use in solving a given problem.</i>	Appetizers; Main Dish Objectives - Cooperative Learning Activities - "I Have, Who Has?" Applications; Final Tests; Reasonableness Problems; Journal Topics		
Algebra				
I. Understand patterns, relations, and functions.				
A.	Describe, extend, and make generalizations about geometric and numeric patterns.			
1	• <i>Using models and calculators, create, extend, and analyze numeric patterns (including decimal patterns through thousandths).</i>	Appetizers 2 B; Main Dish Objective 2 (Mathematical Relations) Lesson 2; Applications; Final Tests; Reasonableness Problems; Journal Topics		

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B.	Represent and analyze patterns and functions, using words, tables, and graphs.			
1	• <i>Describe and represent number relationships with tables.</i>	Appetizers 5 B & C; 12 B; Main Dish Objectives 5 (Probability/Statistics) Lessons 2 & 3; 12 (Mathematical Representation) Lesson 2; Applications; Final Tests; Reasonableness Problems; Journal Topics		
*2	• <i>Determine the rule to identify missing numbers in a sequence or a table.</i>	Appetizers 1 F; 2 B; Main Dish Objectives 1 (Number Concepts) Lesson 6; 2 (Mathematical Relations) Lesson 2; Applications; Final Tests; Reasonableness Problems; Journal Topics		
	II. Represent and analyze mathematical situations and structures using algebraic symbols.			
A.	Identify such properties as commutativity, associativity, and distributivity and use them to compute with whole numbers. <i>For all three grade levels, refer to these concepts in the “Number and Operations” strand.</i>			
B.	Represent the idea of a variable as an unknown quantity using a letter or a symbol.			
1	• <i>Use variables to represent an unknown quantity using a letter or a symbol.</i>			
C.	Express mathematical relationships using equations.			
*1	• <i>Use equations to represent relationships.</i>	Appetizers 12 A; Main Dish Objective 12 (Mathematical Representation) Lesson 1; Applications; Final Tests; Reasonableness Problems; Journal Topics		

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	III. Use mathematical models to represent and understand quantitative relationships.			
A.	Model problem situations with objects and use representations such as graphs, tables, and equations to draw conclusions.			
	IV. Analyze change in various contexts.			
A.	Investigate how a change in one variable relates to a change in a second variable.			
1	<ul style="list-style-type: none"> Describe how a rate of growth varies over time. 	Appetizers 5 C; Main Dish Objective 5 (Probability/Statistics) Lesson 3; Applications; Final Tests; Reasonableness Problems; Journal Topics		
B.	Identify and describe situations with constant or varying rates of change and compare them.			
*1	<ul style="list-style-type: none"> Using charts and graphs, describe changes over time as increasing, decreasing, and varying. 	Appetizers 5 C; 12 B; Main Dish Objectives 5 (Probability/Statistics) Lesson 3; 12 (Mathematical Representation) Lesson 2; Applications; Final Tests; Reasonableness Problems; Journal Topics		
	Geometry			
	I. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.			
A.	Identify, compare, and analyze attributes of two- and three-dimensional shapes and develop vocabulary to describe the attributes.			
*1	<ul style="list-style-type: none"> Choose appropriate models of two- and three-dimensional shapes from descriptions of attributes. 	Appetizers 3 A; Main Dish Objective 3 (Geometry) Lesson 1; Applications; Final Tests; Reasonableness Problems; Journal Topics		

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B.	Classify two- and three-dimensional shapes according to their properties and develop definitions of classes of shapes such as triangles and pyramids.			
*1	<ul style="list-style-type: none"> <i>Classify triangles by lengths of sides (scalene, isosceles, and equilateral) and sizes of angles (acute, obtuse, and right).</i> 	Appetizers 3 D; Main Dish Objective 3 (Geometry) Lesson 4; Applications; Final Tests; Reasonableness Problems; Journal Topics		
C.	Investigate, describe, and reason about the results of subdividing, combining, and transforming shapes.			
1	<ul style="list-style-type: none"> <i>Subdivide two-dimensional shapes to form new shapes and draw conclusions about area and fractional relationships.</i> 	Appetizers 3 A; Main Dish Objective 3 (Geometry) Lesson 1; Applications; Final Tests; Reasonableness Problems; Journal Topics		
D.	Explore congruence and similarity.			
E.	Make and test conjectures about geometric properties and relationships and develop logical arguments to justify conclusions.			
1	<ul style="list-style-type: none"> <i>Using models and mathematical vocabulary, make and test conjectures about geometric properties and relationships and explain the conclusions.</i> 	Appetizers 3 A & B; Main Dish Objective 3 (Geometry) Lessons 1 & 2; Applications; Final Tests; Reasonableness Problems; Journal Topics		
	II. Specify locations and describe spatial relationships using coordinate geometry and other representational systems.			
A.	Describe location and movement using common language and geometric vocabulary.			
1	<ul style="list-style-type: none"> <i>Describe location and movement using common language and geometric vocabulary and illustrate both with and without technology.</i> 	Appetizers 3 A, B, C, & D; Main Dish Objective 3 (Geometry) Lessons 1, 2, 3, & 4; Applications; Final Tests; Reasonableness Problems; Journal Topics		

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B.	Make and use coordinate systems to specify locations and to describe paths.			
*1	<ul style="list-style-type: none"> Investigate possible paths from one point to another along vertical and horizontal grid-lines. 	Appetizers 2 D; Main Dish Objective 2 (Mathematical Relations) Lesson 4; Applications; Final Tests; Reasonableness Problems; Journal Topics		
2	<ul style="list-style-type: none"> Identify and name points on a coordinate grid using an ordered pair of whole numbers. 	Appetizers 2 D; Main Dish Objective 2 (Mathematical Relations) Lesson 4; Applications; Final Tests; Reasonableness Problems; Journal Topics		
C.	Find the distance between points along horizontal and vertical lines of a coordinate system.			
	III. Apply transformations and use symmetry to analyze mathematical situations.			
A.	Predict and describe the results of sliding, flipping, and turning two-dimensional shapes.			
1	<ul style="list-style-type: none"> Using models, describe the results of translations (slides), reflections (flips), and rotations (turns). 	Appetizers 3 C; Main Dish Objective 3 (Geometry) Lesson 3; Applications; Final Tests; Reasonableness Problems; Journal Topics		
2	<ul style="list-style-type: none"> Using models and technology, create simple tessellations. 			
B.	Describe a motion or series of motions that will show that two shapes are congruent.			
*1	<ul style="list-style-type: none"> Draw two-dimensional shapes that are related by translation (slide) or reflection (flip). 	Appetizers 3 C; Main Dish Objective 3 (Geometry) Lesson 3; Applications; Final Tests; Reasonableness Problems; Journal Topics		
2	<ul style="list-style-type: none"> Given a shape and its translation (slide) or reflection (flip), describe the motion that has been applied. 	Appetizers 3 C; Main Dish Objective 3 (Geometry) Lesson 3; Applications; Final Tests; Reasonableness Problems; Journal Topics		

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C.	Identify and describe line and rotational symmetry in two- and three-dimensional shapes and designs.			
	IV. Use visualization, spatial reasoning, and geometric modeling to solve problems.			
A.	Build and draw geometric objects.			
*1	• <i>Draw and label representations of points, lines, line segments, rays, and angles, using mathematical notation.</i>	Appetizers 3 D; Main Dish Objective 3 (Geometry) Lesson 4; Applications; Final Tests; Reasonableness Problems; Journal Topics		
B.	Create and describe mental images of objects, patterns, and paths.			
*1	• <i>Write a description of a given three-dimensional object.</i>	Appetizers 3 A; Main Dish Objective 3 (Geometry) Lesson 1; Applications; Final Tests; Reasonableness Problems; Journal Topics		
2	• <i>Describe a path along grid lines from one point to another.</i>	Appetizers 2 D; Main Dish Objective 2 (Mathematical Relations) Lesson 4; Applications; Final Tests; Reasonableness Problems; Journal Topics		
3	• <i>Given a verbal description, draw two- or three-dimensional objects.</i>	Appetizers 3 A; Main Dish Objective 3 (Geometry) Lesson 1; Applications; Final Tests; Reasonableness Problems; Journal Topics		
C.	Identify and build a three-dimensional object from two-dimensional representations of that object.			
*1	• <i>Identify and build rectangular prisms and cylinders from a given two-dimensional representation (net).</i>	Appetizers 3 A; Main Dish Objective 3 (Geometry) Lesson 1; Applications; Final Tests; Reasonableness Problems; Journal Topics		

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D.	Identify and build a two-dimensional representation of a three-dimensional object.			
1	• <i>Identify and build a two-dimensional representation (net) of a given rectangular prism.</i>	Appetizers 3 A; Main Dish Objective 3 (Geometry) Lesson 1; Applications; Final Tests; Reasonableness Problems; Journal Topics		
E.	Use geometric models to solve problems in other areas of mathematics, such as number and measurement. <i>For all three grade levels, refer to these concepts in the “Number and Operations” and the “Measurement” strands.</i>			
F.	Recognize geometric ideas and relationships and apply them to other disciplines and to problems that arise in the classroom or in everyday life.			
1	• <i>Connect geometry to other areas of mathematics, to other disciplines, and to the world outside the classroom.</i>	Journal Topics		
Measurement				
	I. Understand measurable attributes of objects and the units, systems, and processes of measurement.			
A.	Understand such attributes as length, area, weight, volume, and size of angle and select the appropriate type of unit for measuring each attribute.			
1	• <i>Apply counting procedures to estimate measurements of length, area, volume, and weight/mass.</i>	Appetizers 4 D; Main Dish Objective 4 (Measurement) Lesson 4; Applications; Final Tests; Reasonableness Problems; Journal Topics		
*2	• <i>Investigate and compare angle measures using models and manipulatives with angles of measure 45 degrees, 90 degrees, and 180 degrees.</i>	Appetizers 3 D; Main Dish Objective 3 (Geometry) Lesson 4; Applications; Final Tests; Reasonableness Problems; Journal Topics		
*3	• <i>Using models, find the area of geometric shapes.</i>	Appetizers 4 H; Main Dish Objective 4 (Measurement) Lesson 8; Applications; Final Tests; Reasonableness Problems; Journal Topics		

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4	<ul style="list-style-type: none"> Select units appropriate for the attributes being measured (length and area) and explain the basis for the selection. 	Appetizers 4 C & H; 11 E; Main Dish Objectives 4 (Measurement) Lessons 3 & 8; 11 (Problem Solving) Lesson 5; Applications; Final Tests; Reasonableness Problems; Journal Topics		
B.	Understand the need for measuring with standard units and become familiar with standard units in the customary and metric systems.			
C.	Carry out simple unit conversions, such as from centimeters to meters, within a system of measurement.			
*1	<ul style="list-style-type: none"> Convert units of measure within the metric system: length (centimeters, meters, kilometers), mass (grams, kilograms), and capacity (milliliters, liters); and within the customary system: length (inches, feet, yards), weight (ounces, pounds), and liquid volume (cups, pints, quarts, gallons). 	Appetizers 4 C, E, & F; Main Dish Objective 4 (Measurement) Lessons 3, 5, & 6; Applications; Final Tests; Reasonableness Problems; Journal Topics		
2	<ul style="list-style-type: none"> Convert units of time including days, hours, minutes, and seconds. 	Appetizers 4 A & B; Main Dish Objective 4 (Measurement) Lessons 1 & 2; Applications; Final Tests; Reasonableness Problems; Journal Topics		
D.	Understand that measurements are approximations and understand how differences in units affect precision.			
E.	Explore what happens to measurements of a two-dimensional shape such as its perimeter and area when the shape is changed in some way.			

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	II. Apply appropriate techniques, tools, and formulas to determine measurements.			
A.	Develop strategies for estimating the perimeters, areas, and volume of irregular shapes.			
1	<ul style="list-style-type: none"> Develop and describe strategies for estimating the area and perimeter of irregular shapes using manipulatives (e.g., geoboards, square tiles, graphic representations). 	Appetizers 4 G & H; 11 E; Main Dish Objectives 4 (Measurement) Lessons 7 & 8; 11 (Problem Solving) Lesson 5; Applications; Final Tests; Reasonableness Problems; Journal Topics		
B.	Select and apply appropriate standard units and tools to measure length, area, volume, weight, time, temperature, and the size of angles.			
1	<ul style="list-style-type: none"> Estimate the distance to objects or places and determine the amounts of various units of time (minutes, hours, days, weeks, etc.) it will take to reach these objects or places. 			
*2	<ul style="list-style-type: none"> Select and use an appropriate tool to measure liquid volume including pints and quarts. 			
3	<ul style="list-style-type: none"> Determine the amount of elapsed time in hours and minutes within a twelve-hour period. 			
*4	<ul style="list-style-type: none"> Using analog and digital clocks, tell time to the nearest minute and to the nearest five-minute interval, including use of A.M. and P.M. 			
5	<ul style="list-style-type: none"> Determine temperature changes during time intervals from a Celsius thermometer and a Fahrenheit thermometer. 			

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C.	Select and use benchmarks to estimate measurements.			
D.	Develop, understand, and use formulas to find the area of rectangles and related triangles and parallelograms.			
*1	<ul style="list-style-type: none"> Use concrete and graphic models to discover formulas for finding the area of common two-dimensional shapes. 	Appetizers 11 E; Main Dish Objective 11 (Problem Solving) Lesson 5; Applications; Final Tests; Reasonableness Problems; Journal Topics		
E.	Develop strategies to determine the surface areas and volumes of rectangular solids.			
Data Analysis and Probability				
	I. Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.			
A.	Design investigations to address a question and consider how data-collection methods affect the nature of the data set.			
1	<ul style="list-style-type: none"> Develop strategies for administering a simple survey to obtain unbiased results. 	Appetizers 5 C; 12 B; Main Dish Objectives 5 (Probability/Statistics) Lesson 3; 12 (Mathematical Representation) Lesson 2; Applications; Final Tests; Reasonableness Problems; Journal Topics		
B.	Collect data using observations, surveys, and experiments.			
1	<ul style="list-style-type: none"> Systematically collect data using surveys. 	Appetizers 5 C; 12 B; Main Dish Objectives 5 (Probability/Statistics) Lesson 3; 12 (Mathematical Representation) Lesson 2; Applications; Final Tests; Reasonableness Problems; Journal Topics		

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C.	Represent data using tables and graphs such as line plots, bar graphs, and line graphs.			
*1	<ul style="list-style-type: none"> Construct bar graphs for collected data sets with scale increments of one or greater. 	Appetizers 5 C; 12 B; Main Dish Objectives 5 (Probability/Statistics) Lesson 3; 12 (Mathematical Representation) Lesson 2; Applications; Final Tests; Reasonableness Problems; Journal Topics		
*2	<ul style="list-style-type: none"> Read and interpret information from tables, line graphs, and bar graphs. 	Appetizers 5 C; 12 B; Main Dish Objectives 5 (Probability/Statistics) Lesson 3; 12 (Mathematical Representation) Lesson 2; Applications; Final Tests; Reasonableness Problems; Journal Topics		
D.	Recognize the differences in representing categorical and numerical data.			
1	<ul style="list-style-type: none"> Describe types of graphs that may be used to represent categorical data. 	Appetizers 5 C; 12 B; Main Dish Objectives 5 (Probability/Statistics) Lesson 3; 12 (Mathematical Representation) Lesson 2; Applications; Final Tests; Reasonableness Problems; Journal Topics		
2	<ul style="list-style-type: none"> Describe types of graphs that may be used to represent numerical data. 	Appetizers 5 C; 12 B; Main Dish Objectives 5 (Probability/Statistics) Lesson 3; 12 (Mathematical Representation) Lesson 2; Applications; Final Tests; Reasonableness Problems; Journal Topics		

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	II. Select and use appropriate statistical methods to analyze data.			
A.	Describe the shape and important features of a set of data and compare related data sets, with an emphasis on how the data are distributed.			
1	<ul style="list-style-type: none"> Compare the shapes of graphs of two different numerical data sets that address the same question for different populations. 	Appetizers 5 C; 12 B; Main Dish Objectives 5 (Probability/Statistics) Lesson 3; 12 (Mathematical Representation) Lesson 2; Applications; Final Tests; Reasonableness Problems; Journal Topics		
B.	Use measures of center, focusing on the median, and understand what each does and does not indicate about the data set.			
1	<ul style="list-style-type: none"> Use the mode to describe a set of categorical data. 			
C.	Compare different representations of the same data and evaluate how well each representation shows important aspects of the data.			
1	<ul style="list-style-type: none"> Compare the line graph and bar graph representations of a given data set and explain the benefits of each. 	Appetizers 5 C; 12; Main Dish Objectives 5 (Probability/Statistics) Lesson 3; 12 (Mathematical Representation); Applications; Final Tests; Reasonableness Problems; Journal Topics		
	III. Develop and evaluate inferences and predictions that are based on data.			
A.	Propose and justify conclusions and predictions that are based on data and design studies to further investigate the conclusions or predictions.			
*1	<ul style="list-style-type: none"> Use line graphs to make conjectures about populations based on data sets. 	Appetizers 5 C; 12 C; Main Dish Objectives 5 (Probability/Statistics) Lesson 3; 12 (Mathematical Representation) Lesson 3; Applications; Final Tests; Reasonableness Problems; Journal Topics		

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IV. Understand and apply basic concepts of probability.				
A.	Describe events as likely or unlikely and discuss the degree of likelihood using such words as certain, equally likely, and impossible.			
1	<ul style="list-style-type: none"> Record the outcomes of a multiple-stage event (e.g., tossing two coins), explain the method used, and determine whether the outcomes are equally likely. 	Appetizers 5 A; Main Dish Objective 5 (Probability/Statistics) Lesson 1; Applications; Final Tests; Reasonableness Problems; Journal Topics		
B.	Predict the probability of outcomes of simple experiments and test the predictions.			
1	<ul style="list-style-type: none"> Using models, determine the probability of a given simple event. 	Appetizers 5 A; Main Dish Objective 5 (Probability/Statistics) Lesson 1; Applications; Final Tests; Reasonableness Problems; Journal Topics		
2	<ul style="list-style-type: none"> Construct tree diagrams to list the possible outcomes for multiple-stage events (e.g., tossing two coins). 	Appetizers 5 B; Main Dish Objective 5 (Probability/Statistics) Lesson 2; Applications; Final Tests; Reasonableness Problems; Journal Topics		
C.	Understand that the measure of the likelihood of an event can be represented by a number from 0 to 1.			
*1	<ul style="list-style-type: none"> Give examples of events for which the probability is a fraction between 0 and 1 inclusive and explain. 			