

UNIT/ORGANIZING PRINCIPLE: Rational number operations and solving linear equations					Pacing: Week 2-4
Essential Questions: How can you use numbers to describe concepts such as sea level, losing yardage in a football game, or temperatures that drop below zero?			Big Idea 3: Develop an understanding of operations on all rational numbers and solving linear equations.		
Concepts/Content	Learning Targets/Skills	Benchmarks	Essential Content	Key Terminology	Glencoe Resources
Integers	<p>read and write integers, and find the absolute value of an integer</p> <p>graph points on a coordinate plane use rules for adding and subtracting integers</p> <p>use rules for multiplying and dividing integers</p>	<p>MA.7.A.3.1 moderate</p> <p>MA.7.G.4.3 Low</p> <p>MA.7.A.3.2 Moderate</p>	<p>Use and justify rules for adding, subtracting, multiplying, dividing and finding the absolute value of integers</p> <p>Identify and plot ordered pairs in the coordinate plane</p> <p>Add, subtract, multiply and divide integers, fractions, and terminating decimals, and perform exponential operations</p>	<p>integer negative integer positive integer graph absolute value coordinate plane quadrant x-axis, y-axis origin ordered pair x-coordinate; y-coordinate zero pair opposite pair additive inverse</p>	<p><u>Digital:</u> www.glencoe.com, Personal Tutor, Self-Check Quiz, Visual Vocabulary Cards, Virtual Manipulatives</p> <p><u>Materials:</u> Textbook, paper, pencil, calculator Pretest p. 1, Skills Practice, Reteach, Homework Practice</p>

UNIT/ORGANIZING PRINCIPLE: Rational number operations and solving linear equations				Pacing: First Nine Weeks Weeks 5-6	
Essential Questions: What are rational numbers?		<u>Big Idea 3: Develop an understanding of operations on all rational numbers and solving linear equations.</u>			
Supporting Idea: Numbers and Operations					
Concepts/ Content	Learning Targets/Skills	Benchmarks	Essential Content	Key Terminology	<u>Glencoe Resources</u>
Rational Numbers	graph rational numbers on the number line add and subtract fractions with like denominators add and subtract fractions with unlike denominators add and subtract mixed numbers multiply and divide fractions and mixed numbers use powers and exponents	MA.7.A.5.1 low MA.7.A.3.2 moderate	Express rational numbers as terminating or repeating decimals Add, subtract, multiply and divide integers, fractions, terminating decimals, and perform exponential operations with rational bases and whole number exponents	repeating decimal bar notation rational numbers common denominator LCD like term unlike fractions factors exponent base power squared standard form exponential form	Explore Activity p. 96: Use algebra models to add and subtract fractions with unlike denominators. Use fraction bars/individual fraction sets Explore Fractions with Modelsp.110: Geoboards to demonstrate multiplication of fractions

UNIT/ORGANIZING PRINCIPLE: Rational number operations and solving linear equations					Pacing: First Nine Weeks Weeks 7-9
Essential Questions: What do you know about the solution to an equation?			Big Idea 3: Develop an understanding of operations on all rational numbers and solving linear equations.		
Concepts/ Content	Learning Targets/Skills	Benchmarks	Essential Content	Key Terminology	<u>Glencoe Resources</u>
Linear Equations	<p>write and solve addition and subtraction equations</p> <p>solve one-step equations using models</p> <p>write and solve equations with rational coefficients</p> <p>solve two-step equations</p> <p>solve equations with variables on each side</p>	<p>MA.7.A.3.3 moderate <i>MA.7.A.3.2</i></p> <p>MA.7.A.3.4 moderate</p>	<p>Formulate and use different strategies to solve one-step and two-step linear equations, including equations with rational coefficients</p> <p>Use the properties of equality to represent an equation in a different way and to show that two equations are equivalent in a given context</p>	<p>equation</p> <p>equilateral equation</p> <p>formula</p> <p>coefficient</p> <p>multiplicative</p> <p>inverse</p> <p>two-step equation</p>	<p>Problem-Solving Investigation p.144: MA.7.A.5.2: Solve non-routine problems by working backwards (high)</p> <p>Manipulatives: Algebra tiles; balanced equations (each class has classroom set); bar diagrams</p>

UNIT/ORGANIZING PRINCIPLE: Proportionality and Similarity				Pacing: Second Nine Weeks Weeks 10-12	
Essential Questions: What are ratios and proportions and how do we use them in our daily lives?		Big Idea 1: Develop an understanding of and apply proportionality, including similarity			
Concepts/ Content	Learning Targets/Skills	Benchmarks	Essential Content	Key Terminology	<u>Glencoe Resources</u>
Proportions and Similarity	<p>determine unit rates</p> <p>identify proportional and non-proportional relationships</p> <p>use proportions to solve problems</p> <p>solve problems using scale drawings</p> <p>solve problems involving similar figures</p>	<p>MA.7.A.1.6 moderate</p> <p>MA.7.A.1.1 high</p> <p>MA.7.A.1.3 High</p> <p>MA7.G.4.1 high <i>MA.7.A.1.6</i></p>	<p>Apply proportionality to measurement in contexts, including scale drawings and constant speed.</p> <p>Distinguish between situations that are proportional or not and use proportions to solve problems</p> <p>Solve problems using similar figures</p> <p>Determine how changes in dimensions affect the perimeter and volume of geometric figures</p>	<p>rate</p> <p>unit rate</p> <p>proportional</p> <p>non proportional</p> <p>equivalent ratios</p> <p>proportion</p> <p>cross products</p> <p>scale drawing</p> <p>scale model</p> <p>scale</p> <p>scale factor</p>	<p>Foldable Activity p.192</p> <p>Get Animated- lyrical lesson p.193</p> <p>Extend: Wildlife Sampling capture-recapture technique</p> <p>Extend: Scale Drawings (computerized) using computer spreadsheet p.221</p> <p>Geoboard applications</p> <p>Lab: The Golden Rectangle p. 233</p>

UNIT/ORGANIZING PRINCIPLE: Rational number operations and solving linear equations				Pacing: Second Nine Weeks Weeks 13-14	
<u>Essential Questions:</u> What kinds of relationships might exist between two quantities and what do the graphs of these relationships look like?			<u>Big Idea 1: Develop an understanding of and apply proportionality, including similarity.</u>		
Concepts/ Content	Learning Targets/Skills	Benchmarks	Essential Content	Key Terminology	<u>Glencoe Resources</u>
Linear Equations	<p>make function tables and write equations</p> <p>graph data to demonstrate relationships</p> <p>understand slope as it relates to rate of change</p> <p>identify constant rate of change using tables and graphs</p> <p>use direct variation to solve problems</p>	<p>MA.7.A.1.4 moderate</p> <p>MA.7.A.1.5 Moderate</p>	<p>Graph proportional relationships and identify the unit rate as the slope of the related linear function</p> <p>Distinguish direct variation from other relationships including inverse variation</p>	<p>function</p> <p>function rule</p> <p>function table</p> <p>domain</p> <p>range</p> <p>linear function</p> <p>rate of change</p> <p>constant rate of change</p> <p>slope</p> <p>direct variation</p> <p>constant of variation</p> <p>inverse variation</p>	<p>Use calculators to compare and contrast graph relationships (ex. Slope)</p> <p>Use centimeter cubes to compare and contrast proportional and non-proportional linear functions (p.271)</p> <p>Personal Tutor</p> <p>Virtual manipulatives</p> <p>Virtual Flashcards</p> <p>Lesson Animation</p>

UNIT/ORGANIZING PRINCIPLE: Rational number operations and solving linear equations				Pacing: Second Nine Weeks Weeks 15-16	
Essential Questions: What are percents and how are they used in everyday life?		Big Idea 1: Develop an understanding of and apply proportionality, including similarity.			
Concepts/ Content	Learning Targets/Skills	Benchmarks	Essential Content	Key Terminology	<u>Glencoe Resources</u>
Percents	<p>estimate percents by using fractions and decimals</p> <p>solve problems using the percent proportion and percent equation</p> <p>find the percent of increase or decrease</p> <p>solve problems involving sales tax and tips</p> <p>solve problems involving discounts</p> <p>solve problems involving simple interest</p>	<p>MA.7.A.1.2 High</p> <p><i>MA.7.A.3.2</i> <i>MA.7.A.3.3</i> <i>MA.7.A.5.1</i> (secondary)</p>	Solve percent problems, including problems involving discounts, simple interest, taxes, and percents of increase or decrease	<p>percent equation</p> <p>percent proportion</p> <p>percent of change</p> <p>percent of increase</p> <p>percent of decrease</p> <p>sales tax</p> <p>tip</p> <p>gratuuity</p> <p>discount</p>	<p>Foldable note organizer Problem Solving Investigation: Determining reasonableness p. 322 Financial Literacy (simple interest)</p> <p>Technology Connection (p.343): using computer spreadsheet as a useful tool for calculating simple interest for different values of principal, rate, time >> online calculators to determine mortgage, car, student loan information</p>

UNIT/ORGANIZING PRINCIPLE: Data Analysis and Probability					Pacing: 2nd/3rd Nine Wks Weeks 17-18
Essential Questions: How can you collect and analyze data? Then, how can you use the data to make predications?		Supporting Idea: Data Analysis and Probability			
		Supporting Idea: Probability			
Concepts/ Content	Learning Targets/Skills	Benchmarks	Essential Content	Key Terminology	<u>Glencoe Resources</u>
Data Analysis and Probability	display and analyze: histograms stem and leaf plots find the probability of a simple event count outcomes and find probabilities find the probability of independent and dependent events experimental and theoretical probabilities use experimental and theoretical	MA.7.S.6.2 moderate <i>MA.7.A.3.2</i> MA.7.P.7.1 moderate MA.7.P.7.2 high <i>MA.7.A.11</i>	Construct and analyze histograms, stem-and-leaf plots, and circle graphs Determine the outcome of an experiment and predict which events are likely or unlikely, and if the experiment is fair or unfair. Determine, compare, and make predictions based on experimental or theoretical probability of independent or dependent events.	circle graph histogram stem and leaf plot leaf stem outlier outcome simple event random complementary event simple space tree diagram compound interest independent event dependent events Fundamental Counting Principal theoretical probability	Technology connection: Spreadsheet Lab: Constructing Circle Graphs p.357 Graphing Calculator lab: Constructing Histograms (p.369) Independent and dependent events: Mini-lab using manipulatives (p.390) United Streaming/Video Streaming Get Connected at Glencoe.com eBook Personal Tutor Virtual manipulatives

	<p>probabilities to decided whether a game is fair or unfair</p> <p>predict actions of a large group by using a sample</p>	<p>MA.7.S.6.1 high</p>	<p>Evaluate the reasonableness of a sample to determine the appropriateness of generalizations made about the population</p>	<p>experimental probability</p> <p>fair game</p> <p>unfair game</p>	<p>Virtual Flashcards</p> <p><u>Manipulatives</u>: counters, number cubes, spinners, dominoes, color cubes</p> <p>Probability activity: p.400; experiment p.401</p> <p>Explore Fair and Unfair games w/manipulatives. P.408-409</p>
--	--	--	--	--	---

UNIT/ORGANIZING PRINCIPLE: Surface Area and Volume				Pacing: Third Nine Weeks Weeks 19-20	
Essential Questions: How are volume and surface area used in the real world?		Big Idea 2: Develop an understanding of and use formulas to determine surface areas and volumes of three-dimensional shapes			
Concepts/ Content	Learning Targets/Skills	Benchmarks	Essential Content	Key Terminology	<u>Glencoe Resources</u>
Surface Area and Volume	volume of : prisms cylinders pyramids cones surface area of: prisms cylinders pyramids cones compare surface area and volume of prisms and cylinders	MA.7.G.2.1 Moderate MA.7.G.2.2 moderate	Justify and apply formulas for surface area and volume of pyramids, prisms, cylinders, and cones Use formulas to find surface areas and volume of three- dimensional composite shapes	prism volume rectangular prism triangular prism cylinder pyramid lateral face cone net surface area slant height lateral surface area	Volume activity: p.438 (cans, gridpaper) Explore hands-on lab: Nets of 3D figures Cooperative learning opportunity p.454-455 Get Connected at Glencoe.com eBook Personal Tutor Virtual manipulatives Virtual Flashcards Lesson Animation Manipulatives: base-ten cubes, three-dimensional models

UNIT/ORGANIZING PRINCIPLE: Geometry and Spatial Reasoning				Pacing: Weeks 25-27	
Essential Questions: How do intersecting and parallel lines and angle relationships affect our daily lives?		Big Idea : Use line and angle relationship[s] to find the sum of the measures of the angles of triangles and quadrilaterals. Use what has been learned previously to determine and us the formula for the interior angle sum of a polygon. Students explore rational numbers, irrational numbers, and square roots			
Concepts/ Content	Learning Targets/Skills	Benchmarks	Essential Content	Key Terminology	<u>Glencoe Resources</u>
Geometry and Spatial Reasoning	<p>classify and determine the measure of angles</p> <p>analyze the relationship[s] of angles formed by two parallel lines and a traversal</p> <p>demonstrate that the sum of the angles in a triangle is 180</p> <p>identify and classify triangles</p> <p>classify quadrilaterals and find missing angle measures in quadrilaterals</p>	<p>MA.8.G.2.2 moderate</p> <p>MA.8.G.2.3 moderate</p> <p>MA.8.A.6.2 Moderate</p>	<p>Classify and determine the measure of angles, including angles created when parallel lines are cut by transversals.</p> <p>Demonstrate tha the sum opf the angles in a trianlgt is 180- degrees and apply this fact to find unknown measures of angles, and the sum of angles in polygons.</p> <p>Make reasonable approximations of square roots</p>	<p>angle vertex degrees right, acute, obtuse, straight angles vertical angles adjacent angles supplementary angles complementary angles parallel lines transversal perpendicular lines alternate interior angles quadrilateral rectangle square parallelogram rhombus trapezoid polygon pentagon</p>	<p>Get Connected at Glencoe.com eBook Personal Tutor Virtual manipulatives Virtual Flashcards Lesson Animation</p> <p>Manipulatives: graphing calculators,. patty paper, protractors, math tiles, algebra tiles</p> <p>Explore Triangles p.615</p> <p>Problem Solving Investigation: Inductive reasoning (622)</p>

	<p>angle measures of polygons</p> <p>recognize tessellations using transformations</p> <p>identify and classify numbers in the real number system</p> <p>find the length using Pythagorean theorem</p> <p>find the distance between two points on the coordinate plane</p>	<p>MA.8.A.6.4 high</p> <p>MA.8.G.2.4 moderate</p>	<p>Perform operations on real numbers using multi-step and real world problems</p> <p>Validate and apply Pythagorean Theorem to find distances in real world situations or between points in a coordinate plane.</p>	<p>hexagon heptagon octagon nonagon decagon equilateral equiangular regular polygon tessellation regular tessellation real number leg hypotenuse Pythagorean Theorem</p>	
--	--	---	--	--	--

UNIT/ORGANIZING PRINCIPLE: Statistics				Pacing: Weeks 28-30	
<u>Essential Questions:</u>		<u>Big Idea : Build on previous knowledge of measures of central tendency and variability and statistical displays to perform more in depth analysis of statistics.</u>			
How are statistical displays helpful in our everyday lives?					
Concepts/ Content	Learning Targets/Skills	Benchmarks	Essential Content	Key Terminology	<u>Glencoe Resources</u>
Statistics	<p>determine and describe how changes in data value impact measures of central tendency</p> <p>explore how changes in data values affect mean, median, mode</p> <p>find measures of variation of a set of data</p> <p>display and interpret data in box-and-whisker plots</p> <p>analyze line graphs and scatter plots</p>	<p>MA.8.S.3.2 moderate</p> <p>MA.8.S.3.1 moderate</p>	<p>Determine and describe how changes in data values impact measures of central tendency</p> <p>Select, organize and construct appropriate data displays, including box and whisker plots, scatter plots, and lines of best fit to convey information and make conjectures about possible relationships</p>	<p>measures of central tendency</p> <p>mean</p> <p>median</p> <p>mode</p> <p>measures of variation</p> <p>range</p> <p>quartiles</p> <p>lower quartile</p> <p>upper quartile</p> <p>interquartile range</p> <p>outlier</p> <p>box-and-whisker plot</p> <p>scatter plot</p> <p>line of best fit</p>	<p>Get Connected at Glencoe.com</p> <p>eBook</p> <p>Personal Tutor</p> <p>Virtual manipulatives</p> <p>Virtual Flashcards</p> <p>Lesson Animation</p> <p>Explore: Spreadsheet Lab-Mean, Median, Mode (685)</p>

UNIT/ORGANIZING PRINCIPLE: Inequalities, Functions, and Monomials					Pacing: Weeks 31-36
Essential Questions: What does the word 'inequality' mean? What is the 'real-world' definition? How does it differ from the mathematical definition?			Big Idea: Find solutions to one-and two- step inequalities using the properties of inequality and graph the solutions sets. Introduction to function notation, slope-intercept form of linear equations		
Concepts/ Content	Learning Targets/Skills	Benchmarks	Essential Content	Key Terminology	<u>Glencoe Resources</u>
Inequalities, Functions And Monomials	solve problems using the guess, check, and revise strategy	MA.8.A.6.4 high	Perform operations on real numbers using multi-step and real world problems	function notation x-intercept y-intercept linear function discrete data continuous data slope-intercept form nonlinear function monomial scientific notation	Get Connected at Glencoe.com
	solve inequalities by using the Addition and Subtraction Properties of Inequality	MA.8.A.4.2 moderate	Solve and graph one- and two- step inequalities in one variable		Lesson Animation Personal Tutor Self-Check online Quiz Interactive Classroom
	solve inequalities by using the Multiplication or Division Properties of Inequality	MA.8.A.1.1 high	Create and interpret tables, graphs, and models to represent, analyze, and solve problems related to linear equations		Explore (using balance) p. 728: demonstrate less than, greater than, equal to
	complete function tables	MA.8.A.1.2 Moderate	Interpret the slope and x- and y- intercepts when graphing		Explore (13-3) Graphs of Nonlinear Functions>> graphing to compare interest rates over time Foldables Study Organize (p.775)

<p>Inequalities, Functions And Monomials (cont)</p>	<p>represent linear functions using function tables and graphs</p> <p>determine slopes and y-intercepts of lines; graph linear equations using the slope and y-intercept</p> <p>explore difference between linear and nonlinear functions</p> <p>multiply and divide monomials</p> <p>write expressions using negative exponents</p> <p>express numbers in scientific notation and in standard form</p>	<p>MA.8.A.1.6 moderate</p> <p>MA.8.A.6.3 moderate</p>	<p>Compare the graphs of linear and non-linear functions for real-world problems</p> <p>Simplify real number expressions using the laws of exponents</p>		
--	---	--	---	--	--