

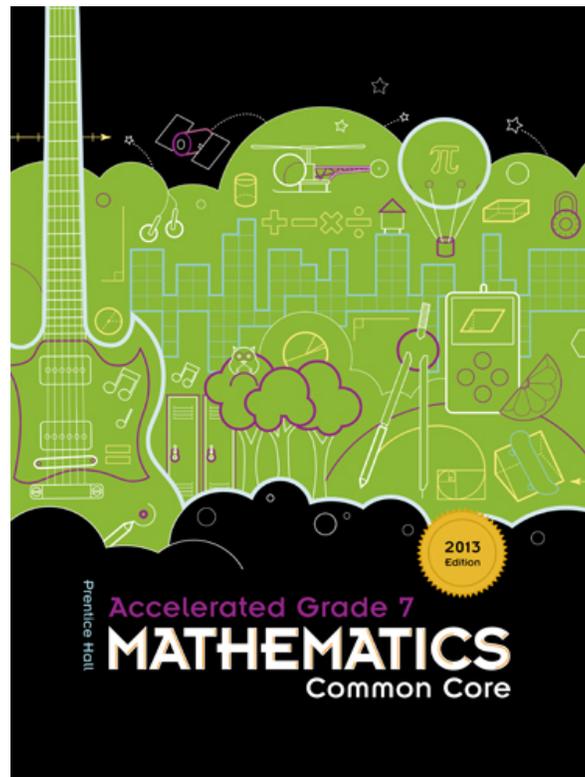
A Correlation of

Prentice Hall

Accelerated Grade 7

Mathematics Common Core

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To the

Common Core State Standards

for Mathematics

Accelerated 7th Grade

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Accelerated Grade 7 Mathematics Common Core
to the Common Core State Standards for Mathematics
Accelerated 7th Grade**

Introduction

This document demonstrates how *Prentice Hall Mathematics Accelerated Grade 7 Mathematics Common Core*, ©2013, meets the Common Core State Standards. Correlation references are to the pages within the Student Edition.

Meeting the Common Core State Standards with Middle Grades Math

- 100% alignment to the Common Core State Standards with Standards for Mathematical
- Practice development embedded throughout the program
- CCSS correlations included at point of use throughout Teacher's Edition
- CCSS correlations included at lesson level in Student Edition Table of Contents
- Daily, integrated intervention and powerful test prep help all students master the standards and prepare for high-stakes assessments
- Updated Benchmark Tests for cumulative assessment of CCSS
- CCSS online in ExamView® and Success Tracker™

**A Correlation of Prentice Hall
Accelerated Grade 7 Mathematics Common Core
to the Common Core State Standards for Mathematics
Accelerated 7th Grade**

Table of Contents

Unit 1: Rational Numbers and Exponents	1
Unit 2: Proportionality and Linear Relationships	5
Unit 3: Introduction to Sampling and Inference	10
Unit 4: Creating, Comparing, and Analyzing Geometric Figures.....	14

**A Correlation of Prentice Hall Accelerated Grade 7, Common Core to the
Common Core State Standards for Mathematics - Accelerated 7th Grade**

Clusters with Instructional Notes	Common Core State Standards for Mathematics	Prentice Hall Accelerated Grade 7 Mathematics Common Core Student Edition Pages
Unit 1: Rational Numbers and Exponents		
<ul style="list-style-type: none"> Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers. 	7.NS.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.	SE: 33-36, Activity Lab 31-32
	a. Describe situations in which opposite quantities combine to make 0. <i>For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.</i>	SE: 10-14, Activity Lab 8-9
	b. Understand $p + q$ as the number located a distance $ q $ from p , in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.	SE: 4-8, 10-14, 33-36, Activity Lab 8-9
	c. Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.	SE: 10-14, 33-36
	d. Apply properties of operations as strategies to add and subtract rational numbers.	SE: 10-14, 33-36

**A Correlation of Prentice Hall
Accelerated Grade 7 Mathematics Common Core
to the Common Core State Standards for Mathematics
Accelerated 7th Grade**

Clusters with Instructional Notes	Common Core State Standards for Mathematics	Prentice Hall Accelerated Grade 7 Mathematics Common Core Student Edition Pages
(Continued) Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.	7.NS.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.	SE: 16-20, 38-42, 43-47, Activity Lab 15
	a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.	SE: 16-20, 38-42, Activity Lab 15
	b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts.	SE: 16-20, 26-29, 43-47
	c. Apply properties of operations as strategies to multiply and divide rational numbers.	SE: 38-42, 43-47
	d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.	SE: 21-25, 26-29

**A Correlation of Prentice Hall
Accelerated Grade 7 Mathematics Common Core
to the Common Core State Standards for Mathematics
Accelerated 7th Grade**

Clusters with Instructional Notes	Common Core State Standards for Mathematics	Prentice Hall Accelerated Grade 7 Mathematics Common Core Student Edition Pages
(Continued) Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.	7.NS.3 Solve real-world and mathematical problems involving the four operations with rational numbers. ¹	SE: 33-36, 38-42, 43-47, Activity Lab 37
<ul style="list-style-type: none"> Know that there are numbers that are not rational, and approximate them by rational numbers. 	8.NS.1 Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.	SE: 21-25, 26-29, Activity Lab 30
	8.NS.2 Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., p^2). <i>For example, by truncating the decimal expansion of $\sqrt{2}$, show that $\sqrt{2}$ is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.</i>	SE: 50-54
<ul style="list-style-type: none"> Work with radicals and integer exponents. 	8.EE.1 Know and apply the properties of integer exponents to generate equivalent numerical expressions. <i>For example, $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$.</i>	SE: 72-75, 82-86, Activity Labs 71, 87

¹ Computations with rational numbers extend the rules for manipulating fractions to complex fractions

**A Correlation of Prentice Hall
Accelerated Grade 7 Mathematics Common Core
to the Common Core State Standards for Mathematics
Accelerated 7th Grade**

Clusters with Instructional Notes	Common Core State Standards for Mathematics	Prentice Hall Accelerated Grade 7 Mathematics Common Core Student Edition Pages
(Continued) Work with radicals and integer exponents.	8.EE.2 Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.	SE: 50-54, 55-58
	8.EE.3 Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. <i>For example, estimate the population of the United States as 3×10^8 and the population of the world as 7×10^9, and determine that the world population is more than 20 times larger.</i>	SE: 66-69, 90-94, Activity Lab 70
	8.EE.4 Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.	SE: 76-79, 90-94, Activity Lab 80

**A Correlation of Prentice Hall
Accelerated Grade 7 Mathematics Common Core
to the Common Core State Standards for Mathematics
Accelerated 7th Grade**

Clusters with Instructional Notes	Common Core State Standards for Mathematics	Prentice Hall Accelerated Grade 7 Mathematics Common Core Student Edition Pages
Unit 2: Proportionality and Linear Relationships		
<ul style="list-style-type: none"> • Analyze proportional relationships and use them to solve real-world and mathematical problems. 	7.RP.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For example, if a person walks $\frac{1}{2}$ mile in each $\frac{1}{4}$ hour, compute the unit rate as the complex fraction $\frac{1}{2} / \frac{1}{4}$ miles per hour, equivalently 2 miles per hour.	SE: 188-191, 207-210, 213-217, Activity Labs 192, 198
	7.RP.2 Recognize and represent proportional relationships between quantities.	SE: 193-197, 199-203, 207-210, Activity Lab 211
	a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.	SE: 193-197, 221-224, Activity Lab 220
	b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.	SE: 221-224
	c. Represent proportional relationships by equations. <i>For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as $t = pn$.</i>	SE: 221-224

**A Correlation of Prentice Hall
Accelerated Grade 7 Mathematics Common Core
to the Common Core State Standards for Mathematics
Accelerated 7th Grade**

Clusters with Instructional Notes	Common Core State Standards for Mathematics	Prentice Hall Accelerated Grade 7 Mathematics Common Core Student Edition Pages
(Continued) Analyze proportional relationships and use them to solve real-world and mathematical problems.	d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate.	SE: 221-224, Activity Lab 5-7a
	7.RP.3 Use proportional relationships to solve multistep ratio and percent problems. <i>Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.</i>	SE: 237-240, 241-244, 248-252, 254-256, 258-262, Activity Labs 253, 257
<ul style="list-style-type: none"> Use properties of operations to generate equivalent expressions. 	7.EE.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.	SE: 108-110
	7.EE.2 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. <i>For example, $a + 0.05a = 1.05a$ means that "increase by 5%" is the same as "multiply by 1.05."</i>	SE: 241-244, 248-252, 258-262, Activity Lab 253

**A Correlation of Prentice Hall
Accelerated Grade 7 Mathematics Common Core
to the Common Core State Standards for Mathematics
Accelerated 7th Grade**

Clusters with Instructional Notes	Common Core State Standards for Mathematics	Prentice Hall Accelerated Grade 7 Mathematics Common Core Student Edition Pages
<ul style="list-style-type: none"> • Solve real-life and mathematical problems using numerical and algebraic expressions and equations. 	<p>7.EE.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. <i>For example: If a woman making \$25 an hour gets a 10% raise, she will make an additional $\frac{1}{10}$ of her salary an hour, or \$2.50, for a new salary of \$27.50. If you want to place a towel bar $9\frac{3}{4}$ inches long in the center of a door that is $27\frac{1}{2}$ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.</i></p>	<p>SE: 21-25, 126-130, 232-236</p>
	<p>7.EE.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.</p>	<p>SE: 103-106, 114-118, Activity Labs 102, 107, 113, 119</p>

**A Correlation of Prentice Hall
Accelerated Grade 7 Mathematics Common Core
to the Common Core State Standards for Mathematics
Accelerated 7th Grade**

Clusters with Instructional Notes	Common Core State Standards for Mathematics	Prentice Hall Accelerated Grade 7 Mathematics Common Core Student Edition Pages
(Continued) Solve real-life and mathematical problems using numerical and algebraic expressions and equations.	a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p , q , and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. <i>For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?</i>	SE: 120-124, 126-130, 134-138, Activity Lab 125
	b. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p , q , and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. <i>For example: As a salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be at least \$100. Write an inequality for the number of sales you need to make, and describe the solutions.</i>	SE: 156-159, 160-163, 165-169, 172-176, Activity Lab 164

**A Correlation of Prentice Hall
Accelerated Grade 7 Mathematics Common Core
to the Common Core State Standards for Mathematics
Accelerated 7th Grade**

Clusters with Instructional Notes	Common Core State Standards for Mathematics	Prentice Hall Accelerated Grade 7 Mathematics Common Core Student Edition Pages
<ul style="list-style-type: none"> Understand the connections between proportional relationships, lines, and linear equations. 	8.EE.5 Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. <i>For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.</i>	SE: 280-283, 304-308, Activity Labs 284, 292
	8.EE.6 Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b .	SE: 293-296, 299-303, Activity Lab 436
<ul style="list-style-type: none"> Analyze and solve linear equations and pairs of simultaneous linear equations. 	8.EE.7 Solve linear equations in one variable.	SE: 134-138, 139-141, 145-148
	a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where a and b are different numbers).	SE: 145-148
	b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	SE: 134-138, 139-141, 145-148

**A Correlation of Prentice Hall
Accelerated Grade 7 Mathematics Common Core
to the Common Core State Standards for Mathematics
Accelerated 7th Grade**

Clusters with Instructional Notes	Common Core State Standards for Mathematics	Prentice Hall Accelerated Grade 7 Mathematics Common Core Student Edition Pages
Unit 3: Introduction to Sampling and Inference		
<ul style="list-style-type: none"> • Use random sampling to draw inferences about a population. 	7.SP.1 Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.	SE: 316-319
	7.SP.2 Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. <i>For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.</i>	SE: 320-322, 326-329

**A Correlation of Prentice Hall
Accelerated Grade 7 Mathematics Common Core
to the Common Core State Standards for Mathematics
Accelerated 7th Grade**

Clusters with Instructional Notes	Common Core State Standards for Mathematics	Prentice Hall Accelerated Grade 7 Mathematics Common Core Student Edition Pages
<ul style="list-style-type: none"> • Draw informal comparative inferences about two populations. 	<p>7.SP.3 Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. <i>For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.</i></p>	<p>SE: 331-334</p>
	<p>7.SP.4 Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. <i>For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.</i></p>	<p>SE: 331-334</p>

**A Correlation of Prentice Hall
Accelerated Grade 7 Mathematics Common Core
to the Common Core State Standards for Mathematics
Accelerated 7th Grade**

Clusters with Instructional Notes	Common Core State Standards for Mathematics	Prentice Hall Accelerated Grade 7 Mathematics Common Core Student Edition Pages
<ul style="list-style-type: none"> Investigate chance processes and develop, use, and evaluate probability models. 	7.SP.5 Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.	SE: 342-345
	7.SP.6 Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. <i>For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.</i>	SE: 347-350
	7.SP.7 Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.	SE: 347-350, Activity Labs 346, 351
	a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. <i>For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.</i>	SE: 342-345

**A Correlation of Prentice Hall
Accelerated Grade 7 Mathematics Common Core
to the Common Core State Standards for Mathematics
Accelerated 7th Grade**

Clusters with Instructional Notes	Common Core State Standards for Mathematics	Prentice Hall Accelerated Grade 7 Mathematics Common Core Student Edition Pages
(Continued) Investigate chance processes and develop, use, and evaluate probability models.	b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. <i>For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?</i>	SE: 347-350, Activity Labs 346, 351
	7.SP.8 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.	SE: 353-357, 360-364, Activity Labs 358, 359
	a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.	SE: 360-364, Activity Lab 359
	b. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event.	SE: 353-357, 360-364, Activity Labs 358, 359
	c. Design and use a simulation to generate frequencies for compound events. <i>For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?</i>	SE: 369-372

**A Correlation of Prentice Hall
Accelerated Grade 7 Mathematics Common Core
to the Common Core State Standards for Mathematics
Accelerated 7th Grade**

Clusters with Instructional Notes	Common Core State Standards for Mathematics	Prentice Hall Accelerated Grade 7 Mathematics Common Core Student Edition Pages
Unit 4: Creating, Comparing, and Analyzing Geometric Figures		
<ul style="list-style-type: none"> Draw, construct, and describe geometrical figures and describe the relationships between them. 	7.G.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.	SE: 207-210, 213-217, Activity Labs 206, 212, 218
	7.G.2 Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.	SE: Activity Labs 380, 386
	7.G.3 Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.	SE: 473-476
<ul style="list-style-type: none"> Solve real-life and mathematical problems involving angle measure, area, surface area, and volume. 	7.G.4 Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.	SE: 404-408, Activity Lab 403
	7.G.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.	SE: 381-385

**A Correlation of Prentice Hall
Accelerated Grade 7 Mathematics Common Core
to the Common Core State Standards for Mathematics
Accelerated 7th Grade**

Clusters with Instructional Notes	Common Core State Standards for Mathematics	Prentice Hall Accelerated Grade 7 Mathematics Common Core Student Edition Pages
(Continued) Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.	7.G.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	SE: 389-392, 394-397, 398-402, 458-462, 465-469, Activity Labs 388, 463, 470
<ul style="list-style-type: none"> • Understand congruence and similarity using physical models, transparencies, or geometry software. 	8.G.1 Verify experimentally the properties of rotations, reflections, and translations:	SE: 494-497, 499-502, 505-508, Activity Labs 498, 504
	a. Lines are taken to lines, and line segments to line segments of the same length.	SE: 494-497, 499-502, 505-508, Activity Labs 498, 504
	b. Angles are taken to angles of the same measure.	SE: 494-497, 499-502, 505-508, Activity Labs 498, 504
	c. Parallel lines are taken to parallel lines.	SE: 494-497, 499-502, 505-508, Activity Labs 498, 504
	8.G.2 Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.	SE: 422-426, 509-513
	8.G.3 Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.	SE: 494-497, 499-502, 505-508, Activity Labs 516, 521

**A Correlation of Prentice Hall
Accelerated Grade 7 Mathematics Common Core
to the Common Core State Standards for Mathematics
Accelerated 7th Grade**

Clusters with Instructional Notes	Common Core State Standards for Mathematics	Prentice Hall Accelerated Grade 7 Mathematics Common Core Student Edition Pages
(Continued) Understand congruence and similarity using physical models, transparencies, or geometry software.	8.G.4 Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.	SE: 428-431, 517-520, 522-526, Activity Labs 516, 521
	8.G.5 Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. <i>For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.</i>	SE: 418-421, 432-435, 440-443, Activity Lab 439
<ul style="list-style-type: none"> • Solve real-world and mathematical problem involving volume of cylinders, cones, and spheres. 	8.G.9 Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.	SE: 478-481, 482-485, Activity Lab 477