

KENTUCKY

Glencoe

Algebra

Concepts and Applications

**Correlation with Kentucky Core
Content
for Mathematics Assessment
and
Responses to Standards for
Mathematics Evaluation
Instrument**

algconcepts.com

**Adoption Group IV
Commonwealth of
Kentucky
2003-2009**

Number/Computation	
Concepts	
OBJECTIVES	PAGE REFERENCES
<p>MA-H-1.1.1 Students will describe properties of, define, give examples of, and apply real numbers to both real-world and mathematical situations, and understand that irrational numbers cannot be represented by terminating or repeating decimals.</p>	<p>SE: Sample Demonstrator: 19 14-18, 19-23, 45, 52-57, 94-99, 352-356, 362-365, 376, 420-425, 600-605 TWE: MC 24, 606</p>
<p>MA-H-1.1.2 Students will recognize, define, give examples of, and apply to both real-world and mathematical situations finite arithmetic and geometric sequences and series.</p>	<p>SE: 315 <i>Chapter Investigation</i> 110-111, 494-495 TWE: A 111, 495 CL 110 EM 571 M 111, 495 ML 110, 494 P 110</p>
<p>MA-H-1.1.3 Students will understand how matrices are used to represent real-world data.</p>	<p>SE: <i>Chapter Investigation</i> 80-81, 578- 579 TWE: A 81, 579 CL 80 M 81, 579 ML 80, 578 P 80</p>

See page 32 for a list of codes used for TWE pages.

Sample Demonstrator
Number/Computation: Concepts
MA-H-1.1.1 to MA-H-1.1.3

1-4 Distributive Property

What You'll Learn

You'll learn to use the Distributive Property to evaluate expressions.

Why It's Important

Shopping Cashiers use the Distributive Property when they total customers' groceries. See Exercise 40.

The **Distributive Property** can be applied to simplify expressions. For example, the expression $2 \times (128 + 12)$ can be solved using two different methods.

Method 1

$$2 \times (128 + 12) = 2(140) \quad \text{First, add.}$$

$$= 280 \quad \text{Then, multiply.}$$

Method 2

$$2 \times (128 + 12) = (2 \times 128) + (2 \times 12) \quad \text{First, distribute.}$$

$$= 256 + 24 \quad \text{Multiply.}$$

$$= 280 \quad \text{Add.}$$

The Distributive Property is used in Method 2. Using both methods, the value of the expression is 280.

Distributive Property	<p>Symbols: For any numbers a, b, and c,</p> $a(b + c) = ab + ac$ $a(b - c) = ab - ac.$ <p>Numbers: $2(5 + 3) = (2 \cdot 5) + (2 \cdot 3)$ $2(5 - 3) = (2 \cdot 5) - (2 \cdot 3)$</p>
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In the expression $a(b + c)$, it does not matter whether a is placed to the left or to the right of the expression in parentheses. So, $(b + c)a = ba + ca$ and $(b - c)a = ba - ca$.

Examples

Simplify each expression.

1 $3(x + 7)$

$$3(x + 7) = (3 \cdot x) + (3 \cdot 7) \quad \text{Distributive Property}$$

$$= 3x + 21 \quad \text{Substitution Property}$$

2 $5(2n + 8)$

$$5(2n + 8) = (5 \cdot 2n) + (5 \cdot 8) \quad \text{Distributive Property}$$

$$= 10n + 40 \quad \text{Substitution Property}$$

Your Turn

- a. $6(a + b)$ b. $(1 + 3t)9$

Number/Computation	
Skills	
OBJECTIVES	PAGE REFERENCES
<p>MA-H-1.2.1 Students will perform addition, subtraction, multiplication, and division with real numbers in problem-solving situations to specified accuracy.</p>	<p>SE: 4-7, 8-13, 15-18, 19-23, 24-29, 44-45, 64-69, 70-74, 74-79, 82-85, 87-88, 100-103, 140-145</p> <p>TWE: HA 25, 66, 82, TM 44 MC 4, 8, 14, 24, 32, 64, 70, 82 RM 4, 8, 14, 19, 24, 44, 64, 70, 75 RT 6, 11, 16, 21, 27, 68, 73, 76, 84</p>
<p>MA-H-1.2.2 Students will simplify real number expressions such as those containing opposites, reciprocals, absolute values, exponents (integer), roots (square, cube), and factorials.</p>	<p>SE: Sample Demonstrator: 154 55-56, 65-67, 153, 154-158, 336-340, 357-361, 362-365, 374, 375</p> <p>TWE: HA 90, 92, 363 TM 374 M 153 MC 341, 357 RM 341, 357, 362, 374 RT 156, 360, 364</p>
<p>MA-H-1.2.3 Students will use matrix addition, subtraction, multiplication (no larger than 2 by 2), and scalar multiplication to solve real-world problems.</p>	<p>SE: <i>Chapter Investigation</i> 80-81, 578-579</p> <p>TWE: A 81, 579 M 81, 579 ML 80, 578</p>
<p>MA-H-1.2.4 Students will determine a specific term of a sequence given an explicit formula and write an explicit rule for the nth term of arithmetic and geometric sequences.</p>	<p>SE: 315 <i>Chapter Investigation</i> 110-111, 494-495</p> <p>TWE: A 111, 495 EM 571 M 111, 495 ML 110, 494</p>

OBJECTIVES	PAGE REFERENCES
<p>MA-H-1.2.5 Students will use simple combinations and permutations to count discrete quantities.</p>	<p>SE: 26, 146-151, 181, 280 <i>Chapter Investigation</i> 152-153</p> <p>TWE: A 153 MC 154 M 153 RT 27, 148 ST 280</p>

Sample Demonstrator
Number/Computation: Skills
MA-H-1.2.1 to MA-H-1.2.5

4-3

Dividing Rational Numbers

What You'll Learn
 You'll learn to divide rational numbers.

Why It's Important
Cooking To adjust recipes for different serving sizes, cooks must know how to divide rational numbers. See Example 5.

When you divide two rational numbers, the quotient is also a rational number. You can use the rules below to find the sign of the quotient. The sign rules are the same as the ones used for dividing integers.

Dividing Rational Numbers	Words	Numbers
Different Signs	The quotient of two numbers with different signs is negative.	$-2.1 \div 7 = -0.3$ $2.1 \div (-7) = -0.3$
Same Sign	The quotient of two numbers with the same sign is positive.	$4.5 \div 0.9 = 5$ $-4.5 \div (-0.9) = 5$

Examples

Find each quotient.

- 1 $-6 \div 0.5$
 $-6 \div 0.5 = -12$ *Numbers have different signs. The quotient is negative.*
- 2 $-7.4 \div (-2)$
 $-7.4 \div (-2) = 3.7$ *Numbers have the same sign. The quotient is positive.*

Prerequisite Skills Review
 Operations with Decimals, p. 684

Your Turn

- a. $16 \div (-2.5)$ b. $-3.9 \div 3$ c. $-8.4 \div (-1.2)$

Two numbers whose product is 1 are called **multiplicative inverses** or **reciprocals**.

$\frac{7}{8}$ and $\frac{8}{7}$ are reciprocals because $\frac{7}{8} \cdot \frac{8}{7} = 1$.

-3 and $-\frac{1}{3}$ are reciprocals because $-3 \cdot \left(-\frac{1}{3}\right) = 1$.

a and $\frac{1}{a}$, where $a \neq 0$, are reciprocals because $a \cdot \frac{1}{a} = 1$.

These examples demonstrate the **Multiplicative Inverse Property**.

Multiplicative Inverse Property	Words:	The product of a number and its multiplicative inverse is 1.
	Symbols:	For every number $\frac{a}{b}$, where $a, b \neq 0$, there is exactly one number $\frac{b}{a}$ such that $\frac{a}{b} \cdot \frac{b}{a} = 1$.
	Numbers:	$-\frac{4}{9}$ and $-\frac{9}{4}$ are multiplicative inverses.

Number/Computation	
Relationships	
OBJECTIVES	PAGE REFERENCES
<p>MA-H-1.3.1 Students will understand how the following subsets of real numbers relate to each other: natural, whole, integers, rational, irrational, reals.</p>	<p>SE: 52-57, 362-365, 374, 600-605, 630 TWE: EM 43 MC 606 TM 630 RT 55, 364, 602</p>
<p>MA-H-1.3.2 Students will understand how real number properties (identity, inverse, commutative, associative, distributive, closure) are used to simplify expressions and solve equations.</p>	<p>SE: 10-13, 14-18, 19-23, 45 TWE: EM 23 MC 14 RT 11, 16</p>
<p>MA-H-1.3.3 Students will understand how to use equivalence relations (reflexive, symmetric, transitive) and order relations (less than, greater than, equal to) to solve problems using real numbers.</p>	<p>SE: 9-13, 19-23, 45, 95-99, 249, 253, 509-513, 514-518 TWE: MC 24, 100, 519 ML 100 MM 2c RT 21, 97, 510</p>
<p>MA-H-1.3.4 Students will understand how ratio and proportion can be used in a variety of mathematical contexts and to solve real-world problems.</p>	<p>SE: Sample Demonstrator: 188 95-99, 188-193, 194-197, 198-203, 204-209, 212-217 TWE: A 197, 203 AP 186c HA 195 MC 100, 194, 198 ML 188, 199 MM 186c RM 198 RT 97, 191, 196, 201 TM 186c</p>

Sample Demonstrator
Number/Computation: Relationships
MA-H-1.3.1 to MA-H-1.3.4

5-1 Solving Proportions

What You'll Learn

You'll learn to solve proportions.

Why It's Important

Cooking Caterers use proportions to adjust their recipes. See Exercise 50.

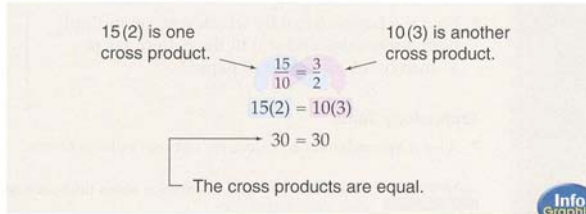
In mathematics, a **ratio** is a comparison of two numbers by division. For example, the ratio of 15 and 10 can be expressed in the following three ways.

15 to 10 15:10 $\frac{15}{10}$

You can express $\frac{15}{10}$ in simplest form as $\frac{3}{2}$.

$$\begin{array}{c} \xrightarrow{+5} \\ \frac{15}{10} = \frac{3}{2} \\ \xrightarrow{+5} \end{array}$$

An equation stating that two ratios are equal is called a **proportion**. So, $\frac{15}{10} = \frac{3}{2}$ is a proportion. Every proportion has two equal cross products.



In the proportion, $b \neq 0$ and $d \neq 0$.

Property of Proportions	Words: The cross products of a proportion are equal.
	Symbols: If $\frac{a}{b} = \frac{c}{d}$, then $ad = bc$. If $ad = bc$, then $\frac{a}{b} = \frac{c}{d}$.
	Numbers: If $\frac{15}{10} = \frac{3}{2}$, then $15(2) = 10(3)$. If $15(2) = 10(3)$, then $\frac{15}{10} = \frac{3}{2}$.

You can use cross products to solve proportions. Sometimes you'll use the Distributive Property.

Geometry/Measurement

Concepts	
OBJECTIVES	PAGE REFERENCES
<p>MA-H-2.1.1 Students will describe properties of and give examples of geometric transformations and apply geometric transformations (translations, rotations, reflections, dilations), with and without a coordinate plane, to both real-world and mathematical situations.</p>	<p>SE: 69, 77-79, 88 TWE: EC 79 EM 327 IE 77</p>
<p>MA-H-2.1.2 Students will define, describe properties of, give examples of, and apply to both real-world and mathematical situations spatial relationships such as betweenness, parallelism, and perpendicularity.</p>	<p>SE: Sample Demonstrator: 322 322-327, 330, 454, 508, 555-559 TWE: A 327 ML 555 RT 325, 557</p>
<p>MA-H-2.1.3 Students will define, describe properties of, give examples of, and apply to both real-world and mathematical situations angle relationships such as linear pairs, vertical, complementary, supplementary, corresponding, and alternate interior angles.</p>	<p>SE: 179, 200-201, 255 See <i>Geometry: Concepts & Applications</i>.</p>
<p>MA-H-2.1.4 Students will describe properties of, define, give examples of, and apply to both real-world and mathematical situations ratio measures including slope and rate.</p>	<p>SE: 266-269, 284-289, 290-295, 296-301 TWE: A 295, 301 MC 270, 290, 296 ML 284 MM 282c RT 267, 286, 293, 299</p>
<p>MA-H-2.1.5 Students will describe properties of, define, give examples of, and apply to both real-world and mathematical situations right triangle trigonometric measures (sine, cosine, tangent).</p>	<p>See <i>Geometry: Concepts & Applications</i>.</p>

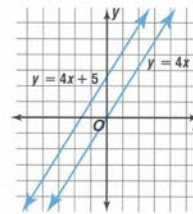
Sample Demonstrator
Geometry/Masurement: Concepts
MA-H-2.1.1 to MA-H-2.1.5

7-7 Parallel and Perpendicular Lines

What You'll Learn
 You'll learn to write an equation of a line that is parallel or perpendicular to the graph of a given equation and that passes through a given point.

Why It's Important
Surveying Surveyors use parallel and perpendicular lines to plan construction. See Exercise 39.

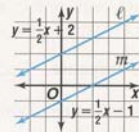
The graphs of the equations shown at the right are a family of graphs because they have the same slope. Because $4x$ is never equal to $4x + 5$, the value of y will never be the same for any given value of x , and the graphs will never intersect. These lines are **parallel**.



Parallel Lines

Words: If two lines have the same slope, then they are parallel.

Model:



Symbols: $\ell \parallel m$

All vertical lines are parallel.

Example

1 Determine whether the graphs of the equations are parallel.

$$y = -\frac{3}{4}x - 2$$

$$4y = -3x + 12$$

First, determine the slopes of the lines. Write each equation in slope-intercept form.

$$y = -\frac{3}{4}x - 2 \quad \text{Slope-Intercept Form}$$

$$4y = -3x + 12$$

$$\frac{4y}{4} = \frac{-3x + 12}{4} \quad \text{Divide each side by 4.}$$

$$\text{The slope is } -\frac{3}{4}.$$

$$y = -\frac{3}{4}x + 3 \quad \text{The slope is } -\frac{3}{4}.$$

The slopes are the same, so the lines are parallel. *Check by graphing.*

Your Turn

a. $y = 2x$
 $7 = 2x - y$

b. $y = -3x + 3$
 $2y = 6x - 5$

Geometry/Measurement	
Skills	
OBJECTIVES	PAGE REFERENCES
<p>MA-H-2.2.1 Students will perform transformations (reflections, translations, rotations, dilations) on figures.</p>	<p>SE: 63, 69, 77-79, 88 TWE: EC 79 EM 327 IE 77</p>
<p>MA-H-2.2.2 Students will classify two-dimensional and three-dimensional geometric figures according to their characteristics such as lengths of sides; angle measures; and number of sides, faces, edges, and vertices. Students will describe the intersection of a plane with a three-dimensional geometric figure.</p>	<p>See <i>Geometry: Concepts & Applications</i>.</p>
<p>MA-H-2.2.3 Students will determine height and distance using methods of indirect measurement such as similar triangles (including shadow or mirror method) and right triangle relationships (including trigonometric ratios).</p>	<p>SE: Sample Demonstrator: 366 366-371, 376 <i>Chapter Investigation 373-374</i> TWE: A 371, 373 EC 371 EM 371 ML 371 RT 369</p>
<p>MA-H-2.2.4 Students will use Pythagorean relationships to solve problems in real-world and mathematical situations.</p>	<p>SE: Sample Demonstrator: 366 366-371, 376, 378-379, 605, 608-609, 623, 680 <i>Chapter Investigation 373-374</i> TWE: A 371 AP 334c EC 371 EM 371</p>
<p>MA-H-2.2.5 Students will apply the concepts of congruence and similarity to solve real-world and mathematical problems (not including proofs).</p>	<p>SE: 546 Also see <i>Geometry: Concepts & Applications</i></p>

OBJECTIVES	PAGE REFERENCES
<p>MA-H-2.2.6 Students will calculate surface area and volume of rectangular prisms, pyramids, cylinders, cones, and spheres in problem settings using given formulas.</p>	<p>SE: 15, 25, 29, 85, 190, 382, 387, 402, 403, 439, 442-444, 463, 477, 654, 678 <i>Hands-On Algebra</i> 25 <i>Problem-Solving Workshop</i> 381</p> <p>TWE: HA 25 MC 19</p>
<p>MA-H-2.2.7 Students will apply formulas for the slope of a line, distance between two points, and midpoint of a segment to solve problems.</p>	<p>SE: 284-289, 606-611 <i>Chapter Investigation</i> 612-613</p> <p>TWE: A 613 M 613 MC 290, 614 ML 284, 612 RT 286</p>

Sample Demonstrator
Geometry/Measurement: Skills
MA-H-2.2.1 to MA-H-2.2.7

8-7 The Pythagorean Theorem

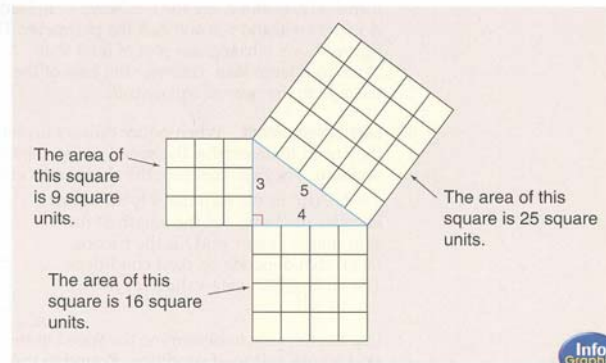
What You'll Learn

You'll learn to use the Pythagorean Theorem to solve problems.

Why It's Important

Carpentry
 Carpenters use the Pythagorean Theorem to determine whether the corners of a deck are right angles. See Example 4.

The sides of the right triangle below have lengths of 3, 4, and 5 units. The relationship among these lengths forms the basis for one of the most famous theorems in mathematics.



Info Graphic

The two sides that form the right angle are called the **legs**. In the triangle above, the lengths of the legs are 3 units and 4 units. The side opposite the right angle is called the **hypotenuse**. The hypotenuse of this triangle has a length of 5 units.

The squares drawn along each side of the triangle illustrate the Pythagorean Theorem geometrically. Study the areas of the squares. Do you notice a relationship between them? The area of the larger square is equal to the total area of the two smaller squares.

$$25 = 9 + 16$$

$$5^2 = 3^2 + 4^2$$

This relationship is true for *any* right triangle and is called the **Pythagorean Theorem**.

Pythagorean Theorem	Words: In a right triangle, the square of the length of the hypotenuse, c , is equal to the sum of the squares of the lengths of the legs, a and b .
	Model: Symbols: $c^2 = a^2 + b^2$

Geometry/Measurement	
Relationships	
OBJECTIVES	PAGE REFERENCES
<p>MA-H-2.3.1 Students will solve real-world geometry problems by using algebra.</p>	<p>SE: Sample Demonstrator: 606 77-79, 366-371, 606-611 <i>Chapter Investigation 372-373,</i> 612-613</p> <p>TWE: EC 611 HA 607 MC 614 RT 609</p>
<p>MA-H-2.3.2 Students will apply algebra to solve problems involving geometric figures in a coordinate plane.</p>	<p>SE: 69, 77-79, 88, 323-327</p> <p>TWE: EC 79 EM 327 IE 77</p>
<p>MA-H-2.3.3 Students will understand how figures in a coordinate plane and their resulting images under a transformation are algebraically and geometrically related. Students will describe elements that change and elements that do not change under these transformations.</p>	<p>SE: 69, 77-79, 88</p> <p>TWE: EC 79 EM 327 IE 77</p>
<p>MA-H-2.3.4 Students will understand how a change in one or more dimensions of a geometric shape affects perimeter, area, volume, or surface area.</p>	<p>SE: 15, 21, 25, 27, 29, 163, 164, 382, 387, 402, 403, 442-444, 463, 477, 654, 659, 660, 661 <i>Hands-On Algebra 25</i> <i>Problem-Solving Workshop 381</i></p> <p>TWE: EC 477 EM 387 HA 25 MC 19, 24, 165 TM 334c</p>

Sample Demonstrator
Geometry/Measurement: Relationships
MA-H-2.3.1 to MA-H-2.3.4

14-2 The Distance Formula

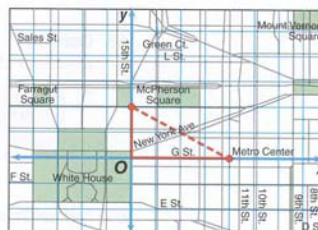
What You'll Learn

You'll learn to find the distance between two points in the coordinate plane.

Why It's Important
Engineering

Engineers can use the distance formula to determine the amount of cable needed to install a cable system. See Exercise 9.

A coordinate system is superimposed over a map of Washington, D.C. Jessica and Omar walk from the Metro Center to 15th Street and then up 15th Street to McPherson Square. How far is the Metro center from McPherson Square? *This problem will be solved in Example 2.*



Recall that subtraction is used to find the distance between two points that lie on a vertical or horizontal line.

In the following activity, you will find the distance between two points that do not lie on a horizontal or vertical line.

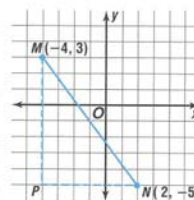
Look Back

Graphing Ordered Pairs: Lesson 2-2

Hands-On Algebra

Materials: grid paper, straightedge

- Step 1** Graph $M(-4, 3)$ and $N(2, -5)$ on a coordinate plane.
- Step 2** Draw a vertical segment from M and a horizontal segment from N . Label the point of intersection P .
- Step 3** Find the coordinates of P .



Try These

1. Find the distance between M and P .
2. Find the distance between N and P .
3. What kind of triangle is $\triangle MNP$?
4. What theorem can be used to find MN if MP and NP are known?
5. Find the distance between M and N .

Probability/Statistics

Concepts

OBJECTIVES	PAGE REFERENCES
<p>MA-H-3.1.1 Students will understand how standard deviation measures the scatter of a discrete set of real-world data.</p>	<p>SE: 283, 302-307 <i>Chapter Investigation</i> 308-309</p> <p>TWE: EM 307 IE 303, 304 MC 310 ML 303 RT 304 TM 282c</p>
<p>MA-M-3.1.2 Students will recognize that curve fitting (linear, quadratic, exponential) can be used as a method of describing and predicting from a set of data or scatter plot. Students will recognize the appropriate curve for a particular set of data.</p>	<p>SE: 283, 302-307 <i>Chapter Investigation</i> 308-309</p> <p>TWE: EM 307 IE 303, 304 MC 310 ML 303 RT 304 TM 282c</p>
<p>MA-M-3.1.3 Students will describe and give examples of various sampling techniques and biases in data collection.</p>	<p>SE: 32-37, 38-43, 46 <i>Chapter Investigation</i> 210-211</p> <p>TWE: A 43 IE 33, 34, 39, 40, 41 MC 38 RT 34, 41</p>
<p>MA-H-3.1.4 Students will understand the differences between combinations and permutations.</p>	<p>SE: 26, 146-151, 152-153, 181, 280</p> <p>TWE: EC 151 IE 147 MC 154 ML 152 RT 148</p>

OBJECTIVES	PAGE REFERENCES
<p>MA-H-3.1.5 Students will understand differences between theoretical and experimental probability.</p>	<p>SE: Sample Demonstrator: 219 219-223, 224-229, 232, 406, 409, 649</p> <p>TWE: A 223 EC 223, 229 IE 221, 225, 227, 406 HA 220 MC 224 ML 219 RT 222, 227</p>

Sample Demonstrator
Probability/Statistics: Concepts
MA-H-3.1.1 to MA-H-3.1.5

5-6 Probability and Odds

What You'll Learn
 You'll learn to find the probability and odds of a simple event.

Why It's Important
Manufacturing
 Inspectors use experimental probability when they find defective items. See Examples 2 & 3.

The table shows all of the possible outcomes when you roll a pair of dice. The highlighted outcomes are doubles.

	1	2	3	4	5	6
1	(1, 1)	(1, 2)	(1, 3)	(1, 4)	(1, 5)	(1, 6)
2	(2, 1)	(2, 2)	(2, 3)	(2, 4)	(2, 5)	(2, 6)
3	(3, 1)	(3, 2)	(3, 3)	(3, 4)	(3, 5)	(3, 6)
4	(4, 1)	(4, 2)	(4, 3)	(4, 4)	(4, 5)	(4, 6)
5	(5, 1)	(5, 2)	(5, 3)	(5, 4)	(5, 5)	(5, 6)
6	(6, 1)	(6, 2)	(6, 3)	(6, 4)	(6, 5)	(6, 6)

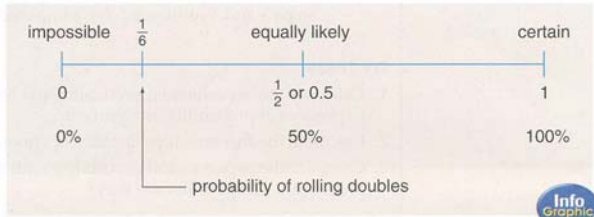
There are 36 possible outcomes. If the dice are fair, each outcome is equally likely to occur. Of those 36 outcomes, 6 are doubles. You can measure the chances of an event happening with **probability**.

Reading Algebra
P(doubles) is read as the probability of rolling doubles.

Probability	Words: The probability of an event is a ratio that compares the number of favorable outcomes to the number of possible outcomes.
	Symbols: $P(\text{event}) = \frac{\text{number of favorable outcomes}}{\text{number of possible outcomes}}$
	Numbers: $P(\text{doubles}) = \frac{6}{36}$ or $\frac{1}{6}$

The probability that an event will happen is between 0 and 1 inclusive.

- A probability of 0 means that the event is impossible.
- A probability of 1 means the event is certain to happen.
- The closer a probability is to 1, the more likely it is to happen.



Probability/Statistics

Skills

OBJECTIVES	PAGE REFERENCES
<p>MA-H-3.2.1 Students will analyze, interpret results, make decisions, and draw conclusions based on a set of data.</p>	<p>SE: Sample Demonstrator: 32 32-37, 38-43, 46, 302-307 <i>Chapter Investigation</i> 210-211, 308-309</p> <p>TWE: A 43, 307 IE 33, 34, 40 MC 32, 38, 310 RT 34, 41, 304 TM 282c</p>
<p>MA-H-3.2.2 Students will plot a set of bivariate data and select an appropriate curve (linear, quadratic, exponential) of best fit.</p>	<p>SE: 302-307 <i>Chapter Investigation</i> 308-309</p> <p>TWE: A 307 MC 310 RT 304 TM 282c</p>
<p>MA-H-3.2.3 Students will organize, display and interpret statistical models (tables, graphs) of bivariate data.</p>	<p>SE: Sample Demonstrator: 32 32-37, 38-43, 46, 302-307 <i>Chapter Investigation</i> 210-211, 308-309</p> <p>TWE: A 43, 307 IE 33, 34, 40 MC 32, 38, 310 RT 34, 41, 304 TM 282c</p>
<p>MA-H-3.2.4 Students will interpret the results of a probability simulation, draw conclusions, and make predictions.</p>	<p>SE: 219-223, 224-229, 232, 406, 409</p> <p>TWE: A 229 EC 223, 229 IE 221 HA 220, 225 MC 219, 224 RT 222, 227</p>

OBJECTIVES	PAGE REFERENCES
<p>MA-H-3.2.5 Students will represent probabilities in multiple ways such as fractions, decimals, percentages, and geometric area models.</p>	<p>SE: 219-223, 224-229, 232, 406, 409 TWE: EM 223 HA 220</p>
<p>MA-H-3.2.6 Students will determine probabilities in situations involving replacement and non-replacement.</p>	<p>SE: 219-223, 224-229, 232, 406, 409 TWE: HA 220</p>

Sample Demonstrator
Probability/Statistics: Skills
MA-H-3.2.1 to MA-H-3.2.6

1-6 Collecting Data

What You'll Learn

You'll learn to collect and organize data using sampling and frequency tables.

Why It's Important

Marketing
Businesses use surveys to collect data in order to test new ideas. See Example 3.

Sampling is a convenient way to gather **data**, or information, so that predictions can be made about **population**. A **sample** is a small group that is used to represent a much larger population. Three important characteristics of a good sample are listed below.

Sampling Criteria

A good sample is:

- representative of the larger population,
- selected at random, and
- large enough to provide accurate data.

A survey can be biased and give false results if these criteria are not followed. Note that there is no given number to make the sample large enough. You must consider each survey individually to see if it is based on a good sample.



Example

Health Link

1 One hundred people in Lafayette, Colorado, were asked to eat a bowl of oatmeal every day for a month to see whether eating a healthy breakfast daily could help reduce cholesterol. After 30 days, 98 of those in the sample had lower cholesterol. Is this a good sample? Explain. **Source:** Quaker Oats

If the people were randomly chosen, then this is a good sample. Also, the sample appears to be large enough to be representative of the population. For example, the results of two or three people would not have been enough to make any conclusions.

Your Turn

Determine whether each is a good sample. Explain.

- Two hundred students at a school basketball game are surveyed to find the students' favorite sport.
- Every other person leaving a supermarket is asked to name their favorite soap.

After the survey is complete, the gathered data is organized into different types of tables and charts. One way to organize data is by using a **frequency table**. In a frequency table, you use **tally marks** to record and display the frequency of events.

Probability/Statistics	
Relationships	
OBJECTIVES	PAGE REFERENCES
MA-H-3.3.1 Students will understand how outliers affect measures of central tendency.	SE: Sample Demonstrator: 104 104-109, 133, 281 TWE: MC 112 RT 107 TM 92c
MA-H-3.3.2 Students will describe how sampling techniques can influence results.	SE: 32-37, 38-43, 46 TWE: EC 37 MC 38 ML 32
MA-H-3.3.3 Students will understand and reason about the use and misuse of statistics and statistical representations such as type of graph and choice of scale.	SE: 38-43, 46, 302-307, 329 <i>Chapter Investigation 308-309</i> TWE: A 43, 307 MC 38, 52, 310 ML 303 RT 304
MA-H-3.3.4 Students will use data and curve of best fit to make and defend predictions.	SE: 302-307, 329 TWE: IE 303, 304 EM 307 MC 310 TM 282c

Sample Demonstrator
Probability/Statistics: Relationships
MA-H-3.3.1 to MA-H-3.3.4

3-3

Mean, Median, Mode, and Range

What You'll Learn

You'll learn to find the mean, median, mode, and range of a set of data.

Why It's Important

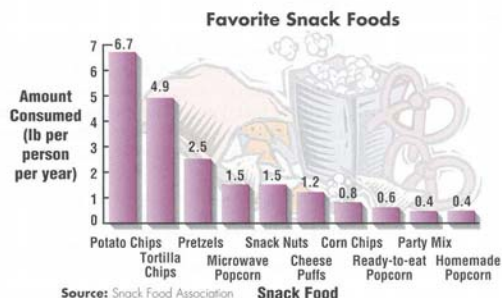
Meteorology A meteorologist can compare climates by comparing the mean, median, mode, and range of a set of temperature data. See Example 5.

A set of data can contain many numbers. To help understand the data, you can let one number describe the set of data. This number is called a **measure of central tendency** because it represents the center, or middle, of the data. The most commonly used measures of central tendency are the **mean**, **median**, and **mode**.

Mean

The mean, or *average*, of a set of data is the sum of the data divided by the number of pieces of data.

The table below shows how much snack food Americans consume.



Example

Food Link

1

Find the mean of the snack food data.

First, find the sum of the amounts consumed. Then divide by the number of items of data. In this case there are 10 items of data.

$$\begin{aligned} \text{mean} &= \frac{6.7 + 4.9 + 2.5 + 1.5 + 1.5 + 1.2 + 0.8 + 0.6 + 0.4 + 0.4}{10} \\ &= \frac{20.5}{10} \text{ or } 2.05 \end{aligned}$$

The mean of the data is 2.05 pounds.

Prerequisite Skills Review

Operations with Decimals, p. 684

Your Turn

Find the mean of each set of data.

a. 19, 21, 18, 17, 18, 22, 46

b.

Stem	Leaf
7	3 5 6
8	2 2 4
9	0 4 7 9
10	5 8
11	4 6 9 4 = 94

Algebraic Ideas	
Concepts	
OBJECTIVES	PAGE REFERENCES
<p>MA-M-4.1.1 Students will understand the concept of a function and roles of independent and dependent variables.</p>	<p>SE: 238-243, 256-261, 276, 277, 304-305, 309 TWE: IE 258 MC 244, 264 RT 259</p>
<p>MA-H-4.1.2 Students will describe, give examples of, and recognize differences among expressions, equations, and inequalities.</p>	<p>SE: 4-7, 14-18, 19-23, 44, 45, 504-508, 542 TWE: IE 5, 505 MC 4, 8, 509 ML 504 RT 6, 21, 506</p>
<p>MA-H-4.1.3 Students will understand systems of linear equations (2 equations in 2 variables) and representations of linear systems.</p>	<p>SE: 550-553, 554-559, 560-565, 566-571, 572-577, 592, 593 TWE: IE 551, 581 AP 548c MC 580 ML 580 RT 552 TM 548c</p>
<p>MA-H-4.1.4 Students will identify linear, quadratic, absolute value, and exponential functions from graphs and equations.</p>	<p>SE: 250-255, 458-463, 464-467, 477, 489-493 TWE: AP 456c IE 251 MC 468 ML 489 RT 254, 471</p>
<p>MA-H-4.1.5 Students will apply direct and inverse variation to both real-world and mathematical problems.</p>	<p>SE: 264-269, 270-275, 278 TWE: A 275 IE 265 MC 284 RT 267, 273 TM 236c</p>

OBJECTIVES	PAGE REFERENCES
<p>MA-H-4.1.6 Students will recognize, give examples of, and apply the laws of exponents.</p>	<p>SE: Sample Demonstrator: 336 336-340, 341-345, 347-351, 374, 375</p> <p>TWE: EC 345, 351 IE 337, 343, 348 MC 341, 352, 347 RT 339, 344</p>

Sample Demonstrator
Algebraic Ideas: Concepts
MA-H-4.1.1 to MA-H-4.1.6

8-1 Powers and Exponents

What You'll Learn
 You'll learn to use powers in expressions.

Why It's Important
Landscaping
 Landscape architects use the formula $A = \pi r^2$ to find the area of a circular region. The 2 in the formula is an exponent. See Exercise 43.

Perfect squares like 1, 4, 9, and 16 can be represented by a square array of dots.



A perfect square is the product of a number and itself. For example, 16 is a perfect square because $16 = 4 \times 4$. The expression 4×4 can be written using exponents. An **exponent** tells how many times a number, called the **base**, is used as a factor. Numbers that are expressed using exponents are called **powers**. The expression 4×4 can be written as 4^2 .

base $\rightarrow 4^2$ *exponent*

Symbols	Words	Meaning
4^1	4 to the first power	4
4^2	4 to the second power or 4 squared	$4 \cdot 4$
4^3	4 to the third power or 4 cubed	$4 \cdot 4 \cdot 4$
4^4	4 to the fourth power	$4 \cdot 4 \cdot 4 \cdot 4$
4^n	4 to the n th power	$4 \cdot 4 \cdot 4 \cdot \dots \cdot 4$ <small>n factors</small>

Examples

Write each expression using exponents.

1

$2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$

The base is 2. It is a factor 5 times.
 $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 = 2^5$

2

$m \cdot m \cdot m \cdot m$

The base is m . It is a factor 4 times.
 $m \cdot m \cdot m \cdot m = m^4$

3

7

The base is 7. It is a factor 1 time.
 $7 = 7^1$

Reading Algebra
 When no exponent is shown, it is understood to be 1. For example, $10 = 10^1$.

Your Turn

- a. $4 \cdot 4 \cdot 4 \cdot 4$ b. $x \cdot x \cdot x$ c. 10

Algebraic Ideas

Skills	
OBJECTIVES	PAGE REFERENCES
<p>MA-H-4.2.1 Students will solve linear equations and linear inequalities.</p>	<p>SE: Sample Demonstrator: 117 112-116, 117-121, 122-127, 160-164, 165-170, 171-175, 177-179, 509-513, 514-518, 519-523, 524-529</p> <p>TWE: A 121, 164 EC 121, 127, 513, 518 IE 118, 520 MC 122, 128, 165, 171, 176, 509, 514, 519 ML 171 RT 120, 125, 130, 168, 173, 178, 522 TM 138c, 502c</p>
<p>MA-H-4.2.2 Students will graph the equation of a line.</p>	<p>SE: 250-255, 310-315, 316-321, 322-327, 329</p> <p>TWE: A 321 IE 251 ML 250, 311 RT 314 TM 282c</p>
<p>MA-H-4.2.3 Students will solve systems of linear equations (2 equations in 2 variables) including systems that arise from real-world problems.</p>	<p>SE: 550-553, 554-559, 560-565, 566-571, 572-577, 592, 593</p> <p>TWE: IE 551, 581 AP 548c MC 580 ML 580 RT 552 TM 548c</p>
<p>MA-H-4.2.4 Students will create tables of numerical values of functions including linear, quadratic, absolute value, exponential, and simple piecewise such as some long distance phone rates.</p>	<p>SE: 128-131, 250-255, 458-463, 489-493</p> <p>TWE: A 463 MM 236c, 456c RT 461 TM 236c, 456c</p>

OBJECTIVES	PAGE REFERENCES
<p>MA-H-4.2.5 Students will determine the domain and range of a function, the slope and intercepts of a linear function, and the maximum/minimum and intercepts of a quadratic function.</p>	<p>SE: 238-243, 250-255, 256-261, 284-289, 296-301, 307, 311-312, 458-463 TWE: IE 251, 285, 297, 459, 460 MC 244, 250, 264, 284, 296 ML 250, 296, 458 RT 461 TM 456c</p>
<p>MA-H-4.2.6 Students will determine approximate solutions to quadratic equations.</p>	<p>SE: 468-473, 475, 478-482, 483-487, 497 TWE: A 467, 473 MC 474 TM 456c</p>
<p>MA-H-4.2.7 Students will add, subtract, and multiply polynomial expressions, and students will factor polynomial expressions using the greatest common monomial factor.</p>	<p>SE: 388-393, 394-398, 399-404, 405-409, 412-414, 428-433, 434-439, 440-444, 445-449 TWE: IE 406, 429, 430 MC 394, 405 MM 380c RT 392, 408, 431</p>
<p>MA-H-4.2.8 Students will use direct and inverse variation to solve real-world problems.</p>	<p>SE: 264-269, 270-275, 278 TWE: A 275 IE 265 MC 284 RT 267, 273 TM 236c</p>

Sample Demonstrator
Algebraic Ideas: Skills
MA-H-4.2.1 to MA-H-4.2.8

3-5 Solving Equations by Using Models

What You'll Learn

You'll learn to solve addition and subtraction equations by using models.

Why It's Important

Zoology Knowing how to solve equations can help in finding unknown values. See Example 3.

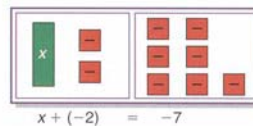
Many real-world situations can be approached by developing a model, writing an equation, and solving it. You can use algebra tiles to solve equations. The green tile represents the variable, x .

1 Examples

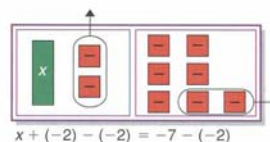
Use algebra tiles to solve each equation.

$x + (-2) = -7$

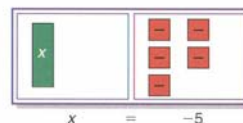
Step 1 Model $x + (-2) = -7$ by placing 1 green tile and 2 red square tiles on one side of the mat to represent $x + (-2)$. Place 7 red square tiles on the other side to represent -7 .



Step 2 To get the green tile by itself, remove 2 red square tiles from each side.



Step 3 The green tile on the left side of the mat is matched with 5 red square tiles. Therefore, $x = -5$.



2 $x - 3 = 5$

Step 1 Write the equation in the form $x + (-3) = 5$. Place 1 green tile and 3 red square tiles on one side of the mat to represent $x + (-3)$. Place 5 yellow square tiles on the other side of the mat to represent $+5$.

(continued on the next page)

Algebraic Ideas

Relationships

OBJECTIVES	PAGE REFERENCES
<p>MA-H-4.3.1 Students will write and solve linear equations describing real-world situations.</p>	<p>SE: Sample Demonstrator: 160 117-121, 122-127, 160-164, 165-170, 171-175, 177-179</p> <p>TWE: A 121, 164 EC 121, 127 IE 118 MC 122, 128, 165, 171, 176 ML 171 RT 120, 125, 130, 168, 173, 178 TM 138c</p>
<p>MA-H-4.3.2 Students will understand how formulas, tables, graphs, and equations of functions relate to each other.</p>	<p>SE: 238-243, 244-249, 250-255, 276, 277, 458-463, 464-467, 489-493</p> <p>TWE: A 467 EC 463, 467 IE 239, 240, 253, 465 MC 244 ML 464 MM 236c, 456c RT 254, 461, 465, 492 TM 236c, 456c</p>
<p>MA-H-4.3.3 Students will demonstrate how slope shows rate of change in linear functions arising from real-world situations.</p>	<p>SE: 284-289, 290, 295, 296-301, 328, 329</p> <p>TWE: EC 289, 295, 301 IE 285, 298 ML 296 MM 282c MC 290 RT 286, 299</p>

OBJECTIVES	PAGE REFERENCES
<p>MA-H-4.3.4 Students will show how changes in parameters affect graphs of functions [e.g., compare the graphs $y = x^2$, $y = 2x^2$, $y = (x - 4)^2$, and $y = x^2 + 3$].</p>	<p>SE: 316-321, 322-327, 330, 464-467, 497 TWE: A 327, 467 EC 467 IE 323, 324, 464, 465, 466 MC 464, 468 ML 322 RT 325</p>
<p>MA-H-4.3.5 Students will show how equations and graphs are models of the relationship between two real-world quantities (e.g., the relationship between degrees Celsius and degrees Fahrenheit).</p>	<p>SE: 174, 244-249, 250-255, 256-261, 276, 277, 458-463, 464-467, 489-493 TWE: AP 236c, 456c EC 463 IE 460, 491 MC 489 ML 250, 489 RT 254, 259</p>

Sample Demonstrator
Algebraic Ideas: Relationships
MA-H-4.3.1 to MA-H-4.1.5

4-4 Solving Multiplication and Division Equations

What You'll Learn
 You'll learn to solve multiplication and division equations by using the properties of equality.

Why It's Important
Plumbing Plumbers solve equations to find correct pipe weights. See Exercise 36.

In Lesson 3-6 you learned about the Addition Property of Equality and the Subtraction Property of Equality. There are properties of equality for multiplication and division as well. One way to solve algebraic equations is to use the **Division Property of Equality**.

Division Property of Equality	<p>Words: If you divide each side of an equation by the same nonzero number, the two sides remain equal.</p> <p>Symbols: For any numbers a, b, and c, with $c \neq 0$, if $a = b$, then $\frac{a}{c} = \frac{b}{c}$.</p> <p>Numbers: If $3x = 12$, then $\frac{3x}{3} = \frac{12}{3}$.</p>
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Examples

Solve each equation. Check your solution.

1 $3y = 45$

$$3y = 45$$

$$\frac{3y}{3} = \frac{45}{3} \quad \text{Divide each side by 3.}$$

$$y = 15$$

Check: $3y = 45$

$$3(15) \stackrel{?}{=} 45 \quad y = 15$$

$$45 = 45 \quad \checkmark$$

2 $16 = -2h$

$$16 = -2h$$

$$\frac{16}{-2} = \frac{-2h}{-2} \quad \text{Divide each side by } -2.$$

$$-8 = h$$

Check: $16 = -2h$

$$16 \stackrel{?}{=} -2(-8) \quad h = -8$$

$$16 = 16 \quad \checkmark$$

3 $7.4a = -37$

$$7.4a = -37$$

$$\frac{7.4a}{7.4} = \frac{-37}{7.4} \quad \text{Divide each side by } 7.4.$$

$$a = -5 \quad \text{Check by substituting into the original equation.}$$

Prerequisite Skills Review
 Operations with Decimals, p. 684

160 Chapter 4 Multiplication and Division Equations

Codes Used for TWE Pages

A	Assess
AP	Applications
EM	Enrichment Masters
HA	Hands-On Algebra
IE	In-Class Examples
M	Manage
MC	5-Minute Check
ML	Motivating the Lesson
MM	Manipulatives/Modeling
TM	Technology/Multimedia

LESSON PLAN CORRELATIONS

Chapter 1 The Language of Algebra	
LESSON	KENTUCKY OBJECTIVES
1-1 Writing Expressions and Equations	MA-H-1.2.1, MA-H-4.1.2
1-2 Order of Operations	MA-H-1.2.1
1-3 Commutative and Associative Properties	MA-H-1.1.1, MA-H-1.2.1, MA-H-2.2.6, MA-H-2.3.4, MA-H-4.1.2
1-4 Distributive Property	MA-H-1.1.1, MA-H-1.2.1, MA-H-2.3.4, MA-H-4.1.2
1-5 A Plan for Problem Solving	MA-H-1.1.2, MA-H-1.2.5, MA-H-2.2.6, MA-H-2.3.4, MA-H-3.1.4
1-6 Collecting Data	MA-M-3.1.3, MA-H-3.2.1, MA-H-3.2.3, MA-H-3.3.2
1-7 Displaying and Interpreting Data	MA-M-3.1.3, MA-H-3.2.1, MA-H-3.2.3, MA-H-3.3.2, MA-H-3.3.3

Chapter 2 Integers	
LESSON	KENTUCKY OBJECTIVES
2-1 Graphing Integers on a Number Line	MA-H-1.2.1, , MA-H-1.2.2
2-2 The Coordinate Plane	MA-H-2.2.1
2-3 Adding Integers	MA-H-1.2.1, MA-H-1.2.2, MA-H-2.1.1, MA-H-2.2.1, MA-H-2.3.2, MA-H-2.3.3
2-4 Subtracting Integers	MA-H-1.2.1
2-5 Multiplying Integers	MA-H-1.2.1, MA-H-2.1.1, MA-H-2.2.1, MA-H-2.3.1, MA-H-2.3.2, MA-H-2.3.3
2-6 Dividing Integers	MA-H-1.2.1, MA-H-2.2.6

Chapter 3 Addition and Subtraction Equations	
LESSON	KENTUCKY OBJECTIVES
3-1 Rational Numbers	MA-H-1.1.1
3-2 Adding and Subtracting Rational Numbers	MA-H-1.2.1
3-3 Mean, Median, Mode, and Range	MA-H-3.3.1
3-4 Equations	MA-H-4.2.1
3-5 Solving Equations by Using Models	MA-H-4.2.1, MA-H-4.3.1
3-6 Solving Addition and Subtraction Equations	MA-H-4.2.1, MA-H-4.3.1
3-7 Solving Equations Involving Absolute Value	MA-H-4.2.4

Chapter 4 Multiplication and Division Equations	
LESSON	KENTUCKY OBJECTIVES
4-1 Multiplying Rational Numbers	MA-H-1.2.1
4-2 Counting Outcomes	MA-H-1.2.5, MA-H-3.1.4
4-3 Dividing Rational Numbers	MA-H-1.2.2
4-4 Solving Multiplication and Division Equations	MA-H-2.3.4, MA-H-4.2.1, MA-H-4.3.1
4-5 Solving Multi-Step Equations	MA-H-4.2.1, MA-H-4.3.1
4-6 Variables on Both Sides	MA-H-4.2.1, MA-H-4.3.1, MA-H-4.3.5
4-7 Grouping Symbols	MA-H-2.1.3, MA-H-4.2.1, MA-H-4.3.1

Chapter 5 Proportional Reasoning and Probability	
LESSON	KENTUCKY OBJECTIVES
5-1 Solving Proportions	MA-H-2.2.6
5-2 Scale Drawings and Models	MA-H-1.3.4
5-3 The Percent Proportion	MA-H-2.1.3
5-4 The Percent Equation	MA-H-1.3.4
5-5 Percent of Change	MA-H-1.3.4
5-6 Probability and Odds	MA-H-3.1.5, MA-H-3.2.4, MA-H-3.2.5, MA-H-3.2.6
5-7 Compound Events	MA-H-3.1.5, MA-H-3.2.4, MA-H-3.2.5, MA-H-3.2.6

Chapter 6 Functions and Graphs	
LESSON	KENTUCKY OBJECTIVES
6-1 Relations	MA-M-4.1.1, MA-H-4.2.5, MA-H-4.3.2
6-2 Equations and Relations	MA-H-4.3.2, MA-H-4.3.5
6-3 Graphing Linear Relations	MA-H-2.1.3, MA-H-4.1.4, MA-H-4.2.2, MA-H-4.2.4, MA-H-4.2.5, MA-H-4.3.2, MA-H-4.3.5
6-4 Functions	MA-M-4.1.1, MA-H-4.2.5, MA-H-4.3.5
6-5 Direct Variation	MA-H-2.1.4, MA-H-4.1.5, MA-H-4.2.8
6-6 Inverse Variation	MA-H-4.1.5, MA-H-4.2.8

Chapter 7 Linear Equations	
LESSON	KENTUCKY OBJECTIVES
7-1 Slope	MA-H-2.1.4, MA-H-2.2.7, MA-H-4.2.5, MA-H-4.3.3
7-2 Writing Equations in Point-Slope Form	MA-H-2.1.4, MA-H-4.3.3
7-3 Writing Equations in Slope-Intercept Form	MA-H-2.1.4, MA-M-3.1.2, MA-H-4.2.5, MA-H-4.3.3
7-4 Scatter Plots	MA-H-3.1.1, MA-M-3.1.2, MA-H-3.2.1, MA-H-3.2.2, MA-H-3.2.3, MA-H-3.3.3, MA-H-3.3.4, MA-M-4.1.1, MA-H-4.2.5
7-5 Graphing Linear Equations	MA-H-1.1.2, MA-H-1.2.4, MA-H-4.2.2, MA-H-4.2.5
7-6 Families of Linear Graphs	MA-H-3.1.1, MA-M-3.1.2, MA-H-4.2.2, MA-H-4.3.4
7-7 Parallel and Perpendicular Lines	MA-H-2.1.2, MA-H-2.3.2, MA-H-4.2.2, MA-H-4.3.4

Chapter 8 Powers and Roots	
LESSON	KENTUCKY OBJECTIVES
8-1 Powers and Exponents	MA-H-1.2.2, MA-H-4.1.6
8-2 Multiplying and Dividing Powers	MA-H-4.1.6
8-3 Negative Exponents	MA-H-4.1.6
8-4 Scientific Notation	MA-H-1.1.1
8-5 Square Roots	MA-H-1.2.2
8-6 Estimating Square Roots	MA-H-1.1.1, MA-H-1.2.2
8-7 The Pythagorean Theorem	MA-H-2.2.3, MA-H-2.2.4, MA-H-2.3.1

Chapter 9 Polynomials	
LESSON	KENTUCKY OBJECTIVES
9-1 Polynomials	MA-H-2.2.6, MA-H-2.3.4
9-2 Adding and Subtracting Polynomials	MA-H-4.2.7
9-3 Multiplying a Polynomial by a Monomial	MA-H-4.2.7
9-4 Multiplying Binomials	MA-H-2.2.6, MA-H-2.3.4, MA-H-4.2.7
9-5 Special Products	MA-H-3.1.5, MA-H-3.2.4, MA-H-3.2.5, MA-H-3.2.6, MA-H-4.2.7

Chapter 10 Factoring	
LESSON	KENTUCKY OBJECTIVES
10-1 Factors	MA-H-1.1.1
10-2 Factoring Using the Distributive Property	MA-H-4.2.7
10-3 Factoring Trinomials: $x^2 + bx + c$	MA-H-2.2.6, MA-H-4.2.7
10-4 Factoring Trinomials: $ax^2 + bx + c$	MA-H-2.2.6, MA-H-2.3.4, MA-H-4.2.7
10-5 Special Factors	MA-H-4.2.7

Chapter 11 Quadratic and Exponential Functions	
LESSON	KENTUCKY OBJECTIVES
11-1 Graphing Quadratic Functions	MA-H-2.2.6, MA-H-2.3.4, MA-H-4.1.4, MA-H-4.2.4, MA-H-4.2.5, MA-H-4.3.2, MA-H-4.3.5
11-2 Families of Quadratic Functions	MA-H-4.1.4, MA-H-4.3.2, MA-H-4.3.4, MA-H-4.3.5
11-3 Solving Quadratic Equations by Graphing	MA-H-4.2.6
11-4 Solving Quadratic Equations by Factoring	MA-H-2.2.6, MA-H-2.3.4, MA-H-4.1.4, MA-H-4.2.6
11-5 Solving Quadratic Equations by Completing the Square	MA-H-4.2.6
11-6 The Quadratic Formula	MA-H-4.2.6
11-7 Exponential Functions	MA-M-3.1.2, MA-H-4.1.4, MA-H-4.2.4, MA-H-4.3.2, MA-H-4.3.5

Chapter 12 Inequalities	
LESSON	KENTUCKY OBJECTIVES
12-1 Inequalities and Their Graphs	MA-H-2.1.2, MA-H-4.1.2
12-2 Solving Addition and Subtraction Inequalities	MA-H-4.2.1
12-3 Solving Multiplication and Division Inequalities	MA-H-4.2.1
12-4 Solving Multi-Step Inequalities	MA-H-4.2.1
12-5 Solving Compound Inequalities	MA-H-4.2.1
12-6 Solving Inequalities Involving Absolute Value	Supports Kentucky and National Math Standards and Objectives
12-7 Graphing Inequalities in Two Variables	Supports Kentucky and National Math Standards and Objectives

Chapter 13 Systems of Equations and Inequalities	
LESSON	KENTUCKY OBJECTIVES
13-1 Graphing Systems of Equations	MA-H-4.1.3, MA-H-4.2.3
13-2 Solutions of Systems of Equations	MA-H-2.1.2, MA-H-4.1.3, MA-H-4.2.3
13-3 Substitution	MA-H-4.1.3, MA-H-4.2.3
13-4 Elimination Using Addition and Subtraction	MA-H-4.1.3, MA-H-4.2.3
13-5 Elimination Using Multiplication	MA-H-4.1.3, MA-H-4.2.3
13-6 Solving Quadratic-Linear Systems of Equations	Supports Kentucky and National Math Standards and Objectives
13-7 Graphing Systems of Inequalities	Supports Kentucky and National Math Standards and Objectives

Chapter 14 Radical Expressions	
LESSON	KENTUCKY OBJECTIVES
14-1 The Real Numbers	MA-H-1.1.1, MA-H-2.2.4
14-2 The Distance Formula	MA-H-2.2.4, MA-H-2.3.1
14-3 Simplifying Radical Expressions	Supports Kentucky and National Math Standards and Objectives
14-4 Adding and Subtracting Radical Expressions	MA-H-2.2.4, MA-H-3.1.1, MA-M-3.1.2
14-5 Solving Radical Equations	Supports Kentucky and National Math Standards and Objectives

Chapter 15 Rational Expressions and Equations	
LESSON	KENTUCKY OBJECTIVES
15-1 Simplifying Rational Expressions	Supports Kentucky and National Math Standards and Objectives
15-2 Multiplying and Dividing Rational Expressions	MA-H-3.1.5
15-3 Dividing Polynomials	MA-H-2.2.6, MA-H-2.3.4
15-4 Combining Rational Expressions with Like Denominators	MA-H-2.3.4
15-5 Combining Rational Expressions with Unlike Denominators	Supports Kentucky and National Math Standards and Objectives
15-6 Solving Rational Equations	Supports Kentucky and National Math Standards and Objectives

**STANDARDS FOR MATHEMATICS
EVALUATION INSTRUMENT**

Content/Process	Comments
<p>1. Material is comprehensive and includes content emphasized in Kentucky’s Learning Goals and Academic Expectations and supported by the Core Content for Assessment, Program of Studies, and relevant National Standards.</p>	<p>Content emphasized in Kentucky’s Learning Goals and Academic Expectations is covered in Core Content statements MA-H-1.1.2, MA-H-1.2.4, MA-H-1.2.5, MA-H-1.3.4, MA-H-2.1.1, MA-H-2.1.2, MA-H-2.1.3, MA-H-2.1.5, MA-H-2.2.2, MA-H-2.2.3, MA-H-2.2.4, MA-H-2.2.5, MA-H-2.2.6, MA-H-2.2.7, MA-H-2.3.1, MA-H-2.3.2, MA-H-2.3.3, MA-H-2.3.4, MA-H-3.1.2, MA-H-3.1.4, MA-H-3.2.4, MA-H-4.1.2, MA-H-4.1.5, MA-H-4.2.1, MA-H-4.2.5, MA-H-4.2.6, MA-H-4.2.8, MA-H-4.3.1, MA-H-4.3.4. A correlation of the material in <i>Glencoe Algebra: Concepts and Applications</i> is aligned to the NCTM Standards for School Mathematics can be found on pages T15-T17 in the Teacher’s Wraparound Edition.</p>

Content/Process	Comments
2. Content appears to be free from factual errors.	<i>Glencoe Algebra: Concepts and Applications</i> is the product of ongoing classroom-oriented research that involves students, teachers, curriculum supervisors, administrators, parents, and college-level mathematics educators. Prior to publication of any Glencoe program, typical research activities include a review of educational research and recommendations made by groups such as NCTM; mail surveys of mathematics educators, discussion groups involving mathematics teachers, department heads, and supervisors; focus groups involving mathematics educators; face-to-face interviews with mathematics educators; telephone surveys of mathematics educators; in-depth analysis of manuscript by a wide range of reviewers and consultants; and field tests in which students and teachers use pre-publication manuscript in the classroom.
3. Content makes connections to other content areas across the curriculum.	There is an emphasis on integrating algebra, Algebra 1, measurement, proportional reasoning, statistics, probability, technology, and problem solving. Applications give students frequent opportunities to apply concepts to both real-life and mathematical situations.
4. Concepts and application of skills to real-life situations are introduced when appropriate.	Relevant, real-life applications are a part of every lesson. Practical problem solving is linked to students' real-life interests. Applications give students frequent opportunities to apply concepts to both real-life and mathematical situations.

Content/Process	Comments
<p>5. Content appears to be free of social, ethnic, racial, religious, gender, and geographical bias.</p>	<p><i>Glencoe Algebra: Concepts and Applications</i> is the product of ongoing classroom-oriented research that involves students, teachers, curriculum supervisors, administrators, parents, and college-level mathematics educators. Prior to publication of any Glencoe program, typical research activities include a review of educational research and recommendations made by groups such as NCTM; mail surveys of mathematics educators, discussion groups involving mathematics teachers, department heads, and supervisors; focus groups involving mathematics educators; face-to-face interviews with mathematics educators; telephone surveys of mathematics educators; in-depth analysis of manuscript by a wide range of reviewers and consultants; and field tests in which students and teachers use pre-publication manuscript in the classroom.</p>
<p>6. Material is flexible and accommodates various learning styles, interest/ability levels, and intelligences, including adaptations and accommodations for students with special needs.</p>	<p><i>Glencoe Algebra: Concepts and Applications</i> introduces new concepts in a variety of ways to meet the needs of all learners. In addition to more traditional instructional experiences, <i>Glencoe Algebra: Concepts and Applications</i> encourages students to do mathematics.</p>
<p>7. Reading level is appropriate for interest and ability level of intended student group; level remains consistent throughout.</p>	<p>The readability level is 6.7 Dale Chall.</p>

Content/Process	Comments
<p>8. Content reflects research-based practices (e.g., hands-on activities, technology, problem-solving situations).</p>	<p>Algebra 1 Activities give students hands-on experience, with a partner or group, in discovering mathematical concepts for themselves and taking responsibility for their own learning. Practical problem solving is linked to students' real-life interests. Internet Projects enable students to become more deeply engaged in a problem situation using technology. Additional opportunities to utilize the world of technology in studying and exploring mathematics are given in the Graphing Calculator Tutorial. Online Study Tools referenced on the Student Edition (SE) pages are keyed specifically to <i>Glencoe Algebra: Concepts and Applications</i>.</p>

Content/Process	Comments
<p>9. Concepts are explored in depth and reinforced throughout.</p>	<p><i>Glencoe Algebra: Concepts and Applications</i> presents all of the fundamental concepts of Algebra 1 and covers all of the Kentucky Core Content Standards for Algebra 1. The content addresses the language of algebra, integers, linear and quadratic equations, proportional reasoning, functions and graphing, powers, roots, polynomials, factoring, inequalities, systems of equations and inequalities, radical expressions, and rational expressions and equations. The program is designed to meet the needs of students who may have experienced difficulties in previous mathematics courses. Most lessons focus on one objective, and prerequisite skills are addressed at the point where they are needed. Online support provides additional practice for each lesson. With its easy-to-read format and emphasis on visuals and hands-on activities, <i>Glencoe Algebra: Concepts and Applications</i> helps motivate students to learn Algebra 1.</p>

Assessment	Comments
<p>1. Student assessment is aligned with the instructional program. Assessment activities are similar to learning activities.</p>	<p><i>Glencoe Algebra: Concepts and Applications</i> includes a variety of assessment instruments to support instruction. The Student Edition has two quizzes in each chapter as well as a Study Guide and Assessment that includes vocabulary review, review exercises for each objective, and applications and problem solving. Also included for each chapter are a Chapter Test and a 2-page Preparing for Standardized Tests assessment. The Teacher’s Wraparound Edition includes a 5-Minute Check and Open-Ended Assessment in every lesson. The Assessment and Evaluation Matters include multiple-choice tests, free-response tests, an open-ended assessment, a mid-chapter test, quizzes, cumulative review, and standardized test practice. The TestCheck and Worksheet Builder CD-ROM, correlated to the Kentucky Core Content Standards for Algebra 1, allows teachers to create customized tests and quizzes with any combination of free-response, multiple-choice, short-answer, and open-ended items. The Test Check and Worksheet Builder also contains special banks of questions for SAT, ACT, and TIMSS. Preparing for CATS Practice and Sample Test Workbook gives students practice by objective and sample tests representative of CATS. <i>Glencoe Algebra: Concepts and Applications</i> provides integrated and ongoing test preparation throughout the year to help reduce student anxiety and improve student performance.</p>

Assessment	Comments
<p>2. Assessment activities examine the extent to which students have internalized and made sense of mathematical concepts and whether they can use mathematics to communicate their ideas.</p>	<p>Every chapter has a Study Guide and Review and Practice Test that includes Vocabulary, Understanding and Using Vocabulary, Examples and Review Exercises for each objective, Applications and Problem Solving. Practice Quizzes, Practice Tests, Study Guide and Review, and Standardized Test Practice in the SE provide ongoing self-assessment opportunities before students take actual tests.</p>

Assessment	Comments
<p>3. Assessment activities provide opportunities for students to demonstrate knowledge and skills in real-life situations and interdisciplinary applications.</p>	<p><i>Glencoe Algebra: Concepts and Applications</i> includes a variety of assessment instruments to support instruction. The Student Edition has two quizzes in each chapter as well as a Study Guide and Assessment that includes vocabulary review, review exercises for each objective, and applications and problem solving. Also included for each chapter are a Chapter Test and a 2-page Preparing for Standardized Tests assessment. The Teacher’s Wraparound Edition includes a 5-Minute Check and Open-Ended Assessment in every lesson. The Assessment and Evaluation Matters include multiple-choice tests, free-response tests, an open-ended assessment, a mid-chapter test, quizzes, cumulative review, and standardized test practice. The TestCheck and Worksheet Builder CD-ROM, correlated to the Kentucky Core Content Standards for Algebra 1, allows teachers to create customized tests and quizzes with any combination of free-response, multiple-choice, short-answer, and open-ended items. The Test Check and Worksheet Builder also contains special banks of questions for SAT, ACT, and TIMSS. Preparing for CATS Practice and Sample Test Workbook gives students practice by objective and sample tests representative of CATS. <i>Glencoe Algebra: Concepts and Applications</i> provides integrated and ongoing test preparation throughout the year to help reduce student anxiety and improve student performance.</p>

Assessment	Comments
<p>4. A variety of assessments (e.g., diagnostic, formative, summative, open response, multiple choice, individual, small group, oral, demonstrations, presentations, self and peer, performance, portfolio prompts) is included.</p>	<p><i>Glencoe Algebra: Concepts and Applications</i> includes a variety of assessment instruments to support instruction. The Student Edition has two quizzes in each chapter as well as a Study Guide and Assessment that includes vocabulary review, review exercises for each objective, and applications and problem solving. Also included for each chapter are a Chapter Test and a 2-page Preparing for Standardized Tests assessment. The Teacher’s Wraparound Edition includes a 5-Minute Check and Open-Ended Assessment in every lesson. The Assessment and Evaluation Matters include multiple-choice tests, free-response tests, an open-ended assessment, a mid-chapter test, quizzes, cumulative review, and standardized test practice. The TestCheck and Worksheet Builder CD-ROM, correlated to the Kentucky Core Content Standards for Algebra 1, allows teachers to create customized tests and quizzes with any combination of free-response, multiple-choice, short-answer, and open-ended items. The Test Check and Worksheet Builder also contains special banks of questions for SAT, ACT, and TIMSS. Preparing for CATS Practice and Sample Test Workbook gives students practice by objective and sample tests representative of CATS. <i>Glencoe Algebra: Concepts and Applications</i> provides integrated and ongoing test preparation throughout the year to help reduce student anxiety and improve student performance. The Standardized Test Preparation CD-ROM contains blocks of test items from state tests, the SAT, the ACT, TIMSS, and NAEP.</p>

Assessment	Comments
5. Assessment activities provide opportunities for student integration of technology in the assessment process.	The AlgePASS: Concepts and Applications CD-ROM reviews and reinforces important concepts through a unique Pretest-Tutorial-Guided Practice-Posttest format. Self-paced and easy-to-use, it is an excellent tool for standardized test preparation.

Organization and Structure	Comments
<p>1. Organization is logical and allows for spiraling of content.</p>	<p><i>Glencoe Algebra: Concepts and Applications</i> is composed of 15 chapters, each having 5 to 7 lessons. Each lesson follows a straightforward format. The lesson begins with <i>What You'll Learn</i> and <i>Why It's Important</i>, which provide the objective of the lesson and the benefit of learning the concept. In the lesson narrative, important terms are highlighted yellow, and definitions, rules, and properties are displayed in concept boxes. Completely worked-out examples with clear explanations parallel the exercises in the Guided Practice and Practice sections. In the Communicating Mathematics exercises, students define, describe, and explain mathematical concepts. Keyed to the examples, the Guided Practice exercises present a representative sample of the exercises in the Practice exercises. The Practice exercises are separated into A, B, and C sections, indicated only in the Teacher's Wraparound Edition. The Applications and Problem Solving exercises apply geometric concepts to both real-life and mathematical problem situations. Each lesson contains a Critical Thinking exercise in which students explain, justify, and prove mathematical relationships. The Mixed Review exercises are spiraled and cumulative. Each Mixed Review section contains a Standardized Test Practice question, some of which are open-ended. The Student Handbook in the back of the Student Edition contains Algebra Review and Extra Practice for each lesson as well as a Graphing Calculator Tutorial, Glossary, Selected Answers, and Index.</p>

Organization and Structure	Comments
2. Language is clear and concise with correct grammar and sentence structure.	<i>Glencoe Algebra: Concepts and Applications</i> is the product of ongoing classroom-oriented research that involves students, teachers, curriculum supervisors, administrators, parents, and college-level mathematics educators. Prior to publication of any Glencoe program, typical research activities include a review of educational research and recommendations made by groups such as NCTM; mail surveys of mathematics educators, discussion groups involving mathematics teachers, department heads, and supervisors; focus groups involving mathematics educators; face-to-face interviews with mathematics educators; telephone surveys of mathematics educators; in-depth analysis of manuscript by a wide range of reviewers and consultants; and field tests in which students and teachers use pre-publication manuscript in the classroom.
3. Vocabulary and key terms are clearly defined and easily accessible within each lesson.	In the lesson narrative, important terms are highlighted in yellow , and definitions, rules, and properties are displayed in concept boxes .
4. Visual illustrations (e.g., graphs, charts, models) and examples are clearly presented and content-related.	Graphs, charts, and models are used throughout the book to illustrate concepts. Completely worked-out examples with clear explanations parallel the exercises in the Guided Practice and Practice sections.

Organization and Structure	Comments
5. Illustrations and language reflect diversity (e.g., racial, ethnic, culture, age, gender, disabilities).	<i>Glencoe Algebra: Concepts and Applications</i> is the product of ongoing classroom-oriented research that involves students, teachers, curriculum supervisors, administrators, parents, and college-level mathematics educators. Prior to publication of any Glencoe program, typical research activities include a review of educational research and recommendations made by groups such as NCTM; mail surveys of mathematics educators, discussion groups involving mathematics teachers, department heads, and supervisors; focus groups involving mathematics educators; face-to-face interviews with mathematics educators; telephone surveys of mathematics educators; in-depth analysis of manuscript by a wide range of reviewers and consultants; and field tests in which students and teachers use pre-publication manuscript in the classroom.
6. Legible type, length of lines, spacing, page layout, and width of margins contribute to overall appearance and use.	Prior to publication of any Glencoe program, an in-depth analysis of manuscript by a wide range of reviewers and consultants is conducted. Field tests in which students and teachers use pre-publication manuscript in the classroom also helps ensure accuracy.
7. Student materials seem durable and conducive to daily student use (e.g., size, weight).	The very best materials are used in all Glencoe products. The materials are easy for students to use, both in school and at home.

Organization and Structure	Comments
<p>8. Textbook includes appropriate and sufficient glossary, index, and appendices.</p>	<p>The Student Handbook can be found on pp. 683-781. It contains sections on Prerequisite Skills Review, Extra Practice, Graphing Calculator Tutorial, Glossary, Selected Answers, and Index. Symbols and Properties, and Formulas and Measures are listed inside the back cover.</p>

Organization and Structure	Comments
<p>9. Materials are organized into units of study (or similar structures) with daily lessons that include worthwhile, real-world tasks.</p>	<p><i>Glencoe Algebra: Concepts and Applications</i> is composed of 15 chapters, each having 5 to 7 lessons. Each lesson follows a straightforward format. The lesson begins with <i>What You'll Learn</i> and <i>Why It's Important</i>, which provide the objective of the lesson and the benefit of learning the concept. In the lesson narrative, important terms are highlighted yellow, and definitions, rules, and properties are displayed in concept boxes. Completely worked-out examples with clear explanations parallel the exercises in the Guided Practice and Practice sections. In the Communicating Mathematics exercises, students define, describe, and explain mathematical concepts. Keyed to the examples, the Guided Practice exercises present a representative sample of the exercises in the Practice exercises. The Practice exercises are separated into A, B, and C sections, indicated only in the Teacher's Wraparound Edition. The Applications and Problem Solving exercises apply geometric concepts to both real-life and mathematical problem situations. Each lesson contains a Critical Thinking exercise in which students explain, justify, and prove mathematical relationships. The Mixed Review exercises are spiraled and cumulative. Each Mixed Review section contains a Standardized Test Practice question, some of which are open-ended. The Student Handbook in the back of the Student Edition contains Algebra Review and Extra Practice for each lesson as well as a Graphing Calculator Tutorial, Glossary, Selected Answers, and Index.</p>

Organization and Structure	Comments
10. Materials can be easily understood by students and parents.	The reading level of <i>Glencoe Algebra: Concepts and Applications</i> is on target at 6.7 Dale Chall. In addition, the material presented is interesting and related to students' lives. The Glencoe Math Website helps parents get involved with their child's learning.

Student Experiences	Comments
<p>1. The program emphasizes students <i>doing</i> mathematics rather than <i>memorizing</i> mathematics.</p>	<p><i>Glencoe Algebra: Concepts and Applications</i> is designed to help students of basic and average ability levels develop geometric skills and concepts. The concise lesson narrative, lower readability, and unique info-graphics and photo-graphics help students learn important concepts. Hands-on Algebra activities give students the opportunity to bridge the gap between the concrete and the abstract. Getting Ready features in the exercises allow students to review subskills needed for homework assignments. Reading Algebra features help students understand the terminology of Algebra 1, which is necessary for concept development. Most examples are immediately followed by Your Turn problems, which give students the opportunity to practice the concepts they have just learned. Check for Understanding in every lesson allows students to gauge their own mastery of lesson concepts.</p>
<p>2. Both group and individual activities are included.</p>	<p><i>Glencoe Algebra: Concepts and Applications</i> offers multiple opportunities for students to learn cooperatively as well as individually. In addition to more traditional instructional experiences, hands-on labs and activities, projects, and online activities and research give students hands-on experience, with a partner or group, in discovering mathematical concepts.</p>
<p>3. Materials and activities provide authentic applications that allow students to make meaningful connections across the curriculum, to real-world situations, and to interrelated mathematical concepts.</p>	<p>The Your Turn problems in each section in every lesson contains Applications that give students opportunities to apply concepts to both real-life and mathematical situations.</p>

Student Experiences	Comments
<p>4. Materials and activities encourage students to explore and investigate mathematical ideas through various problem-solving techniques.</p>	<p><i>Glencoe Algebra: Concepts and Applications</i> is designed to help students of basic and average ability levels develop geometric skills and concepts. The concise lesson narrative, lower readability, and unique info-graphics and photo-graphics help students learn important concepts. Hands-on Algebra activities give students the opportunity to bridge the gap between the concrete and the abstract. Getting Ready features in the exercises allow students to review subskills needed for homework assignments. Reading Algebra features help students understand the terminology of Algebra 1, which is necessary for concept development. Most examples are immediately followed by Your Turn problems, which give students the opportunity to practice the concepts they have just learned. Check for Understanding in every lesson allows students to gauge their own mastery of lesson concepts.</p>

Student Experiences	Comments
<p>5. Materials and activities ask students to read, write, and discuss mathematics.</p>	<p><i>Glencoe Algebra: Concepts and Applications</i> is designed to help students of basic and average ability levels develop geometric skills and concepts. The concise lesson narrative, lower readability, and unique info-graphics and photo-graphics help students learn important concepts. Hands-on Algebra activities give students the opportunity to bridge the gap between the concrete and the abstract. Reading Algebra features help students understand the terminology of Algebra 1, which is necessary for concept development. Each lesson contains a Critical Thinking exercise in which students explain, justify, and prove mathematical relationships. Students are shown how to organize information about each chapter by using a Foldables Study Organizer.</p>
<p>6. Materials and activities ask students to reflect upon, clarify, justify, and generalize their mathematical ideas.</p>	<p>Throughout the <i>Glencoe Algebra: Concepts and Applications</i> program students are given the tools they need to organize their thinking, process new concepts, and connect them to concepts they already know. Students are shown how to organize information about each chapter by using a Foldables Study Organizer.</p>

Technology	Comments
<p>1. In order for students to focus on decision-making, reflection, reasoning, and problem solving, instructional activities incorporate the use of technology (e.g., calculators, probes, computers) and include instructions on how to use the technology tools.</p>	<p>Students are given multiple opportunities to utilize the world of technology in studying and exploring mathematics. Online support provides additional practice for each lesson. With its easy-to-read format and emphasis on visuals and hands-on activities <i>Glencoe Algebra: Concepts and Applications</i> helps students to learn Algebra 1. The Student Handbook contains a Graphing Calculator Tutorial.</p>
<p>2. Various forms of media are included (e.g., CDs, videos, computer software)</p>	<p>The following items are included in the program: Answer Key Maker CD-ROM, Interactive Teacher Edition, KY TestCheck and Worksheet Builder CD-ROM, AlgePASS: Concepts and Applications Tutorial CD-ROM, KY Interactive Chalkboard CD-ROM, KY CATS Prep CD-ROM, Multimedia Applications CD-ROM, MindJogger Videoquizzes, StudentWorks CD-ROM, TeacherWorks All-in-One Lesson Planner and Resource Center CD-ROM, Vocabulary PuzzleMaker, Using the Internet in the Math Classroom, and State Test Prep CD-ROM High School.</p>
<p>3. Student materials are available online.</p>	<p>Free access to the Glencoe Math Website, www.algconcepts.com, is provided with the program.</p>

Resource Materials	Comments
1. Teacher materials coordinate easily with student materials (e.g., additional resources included at point of need, student pages shown, manipulatives appropriate for indicated lesson, instructional technology indicated).	Each lesson in the Teacher’s Wraparound Edition (TWE) begins with a Resource Manager , which includes instructional technology. A list of blackline masters and manipulatives for each lesson is included at the beginning of each chapter. Each student page is shown in the TWE on the same pages as related teacher’s materials.
2. Activities are included that adapt to the various learning styles, intelligences, and interest/ability levels.	<i>Glencoe Algebra: Concepts and Applications</i> is designed to help students of basic and average ability levels develop geometric skills and concepts.
3. Extension activities including adaptations and accommodations for students with special needs.	<i>Glencoe Algebra: Concepts and Applications</i> is designed to help students of basic and average ability levels develop geometric skills and concepts.
4. Resources provide objectives, background information, common student errors, hints, advice for lesson implementation and real-world connections, connections within mathematics, and references (e.g., solutions manuals, study guides).	Additional resource materials include Teacher’s Classroom Resources, KY CATS Math Practice and Sample Test Workbook for Grade 11 Assessment TE, KY Guide to Daily Intervention, Teaching Trasparencies, 5-Minute Check Transparencies, Answer Key Transparencies, Overhead Manipulative Resources, Teaching Math with Foldables by Dinah Zike, State Test Prep Answer Key. Spanish Study Guide and Assessment, Prerequisite Sills Workbook: A Review of Algebra, Practice Workbook, State Test Prep Workbook High School, KY CATS Math Practice and Sample Test Workbook for Grade 11 Assessment SE.

Resource Materials	Comments
5. Suggestions are made for integration of themes and/or interdisciplinary instruction.	USA TODAY Education’s Online site offers resources and interactive features connected to each day’s newspaper. Log on to www.education.usatoday.com . Ancillary materials include Science and Math Lab Manual and School-to-Career Masters .
6. Suggestions are made for family and community involvement and school/home communication.	The Glencoe Math Website , www.algconcepts.com , helps parents get involved with their child’s learning.
7. The included media are durable, easy to use, and have technical merit.	All included media are made to last and can be easily incorporated into lessons.
8. Teacher resources are available online.	Free access to Glencoe Math Website , www.algconcepts.com , is provided with the program.



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