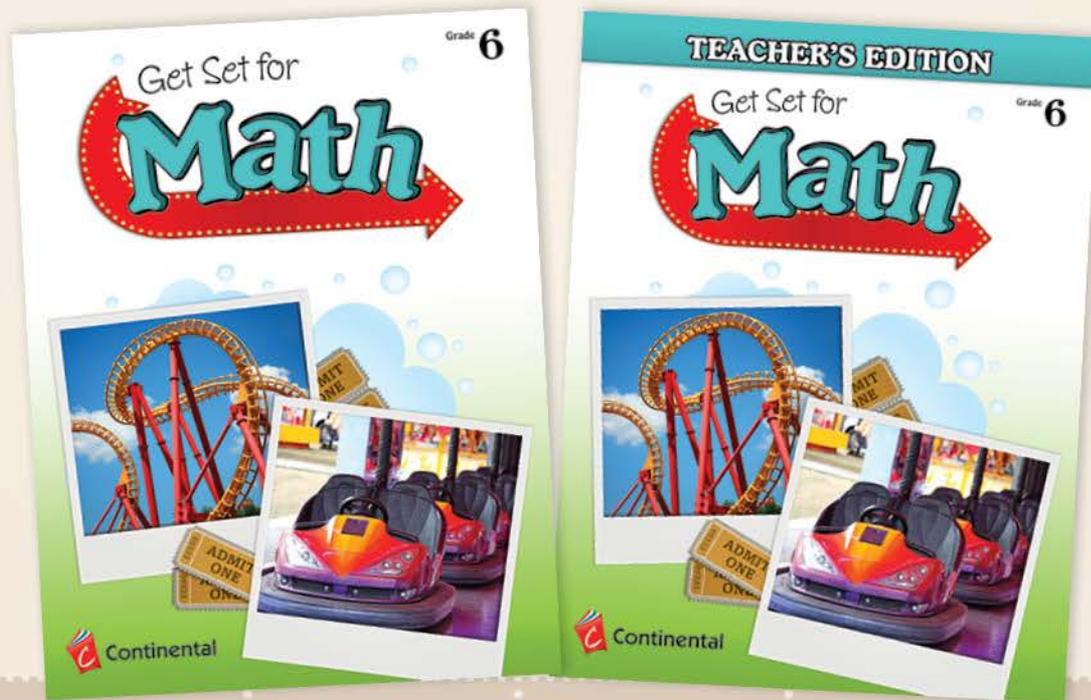


Grades 3–8



## What does this series do?

*Get Set for Math* provides focused practice for the types of questions students will encounter on end-of-year Common Core assessments. Lessons review the standards and familiarize students with the challenging item types they'll face on test day. Components include student workbooks and annotated teacher's editions in print and eBook formats.



Grades 3–8



# Connections to the Common Core

- Written directly to the Common Core's Standards for Mathematical Practice
- Assessment type questions

### Independent Practice

3 Eddie compares the numbers shown in the inequalities below.  
 $-2.25 < -0.75$  and  $-1.5 > -2.25$

Eddie will plot the numbers from these inequalities on a horizontal number line. Which of the following statements are true of the number line? Select all that apply.

- A -2.25 will be farthest left.
- B -0.75 will be farthest left.
- C -1.5 will be farthest left.
- D -2.25 will be farthest right.
- E -0.75 will be farthest right.
- F -1.5 will be farthest right.

4 Look at this number line.

Circle the correct option in each set below to make the statement true.

Since -6 is to the **left**, **right** of -10 on the number line,  $|-6, -10| < |-6, -10|$ .

5 Austin and Valerie are rappelling. Their distances from the top of the cliff are represented by the numbers below.

- Austin: -11 feet
- Valerie: -17 feet

Write an inequality statement using either  $<$  or  $>$  to compare these numbers.

Who has gone farther down the cliff?

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# Step-By-Step Instruction

Each lesson begins with a focus lesson, which addresses the Standard(s) designated for the lesson. In the sample question that follows, students will work through a sequence of questions that guide their thinking.

Teacher led instruction

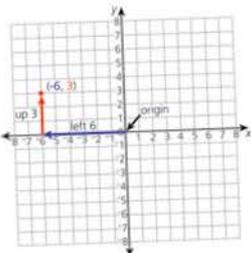
Whole class activity

Lesson 12 **Coordinate Graphing**

**Focus Lesson**

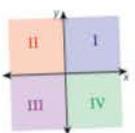
A **coordinate plane** has a **horizontal axis**, or **x-axis**, and a **vertical axis**, or **y-axis**. Both axes contain positive integers, negative integers, and 0. The location where both axes intersect is the **origin**.

**Ordered pairs**, such as  $(-6, 3)$ , name the locations of points on the coordinate plane. The first number is the **x-coordinate**. It tells how far to move **left** or **right** from the origin. The second number is the **y-coordinate**. It tells how far to move **up** or **down** from the first number. The ordered pair  $(0, 0)$  names the origin.



A coordinate plane is divided into four **quadrants**. Points on either axis are not in any quadrant.

- Quadrant I** contains ordered pairs with positive x- and y-coordinates.
- Quadrant II** contains ordered pairs with negative x-coordinates and positive y-coordinates.
- Quadrant III** contains ordered pairs with negative x- and y-coordinates.
- Quadrant IV** contains ordered pairs with positive x-coordinates and negative y-coordinates.

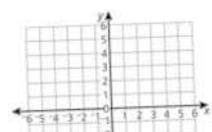


Find the distance between points by using absolute values of the coordinates.

1. What is the shortest distance, in units, between points L and M? \_\_\_\_\_ units

1. What are the coordinates for point L? \_\_\_\_\_  
For point M? \_\_\_\_\_

2. What are the x-coordinates of both points? \_\_\_\_\_  
What are the y-coordinates of both points? \_\_\_\_\_



...in conversion factors. The ratio of feet to inches is  $\frac{1}{12}$  since 1 foot = 12 inches. This ratio is the conversion factor used to determine the number of feet in a given number of inches. Multiply by conversion factors to change one unit to a different unit. Sometimes more than one conversion is needed to convert rates. In these cases, multiply by each conversion factor.

Three different brands of juice are shown here.



Order these juices—brand X, brand Y, brand Z—from least unit cost to greatest unit cost.

Least Unit Cost:

Greatest Unit Cost:

- How many ounces are in 1 cup? \_\_\_\_\_ How many ounces are in brand X? \_\_\_\_\_
- How many ounces are in 1 gallon? \_\_\_\_\_ How many ounces are in brand Z? \_\_\_\_\_
- Why is it useful to know the number of ounces in brands X and Z? \_\_\_\_\_
- What unit of measure can be used to describe unit cost for each brand? \_\_\_\_\_
- Describe the process for finding the unit cost for each brand of juice. \_\_\_\_\_
- What is the unit cost, in dollars per ounce, for brand X? \_\_\_\_\_  
Brand Y? \_\_\_\_\_ Brand Z? \_\_\_\_\_

Write the juice brands in order of least unit cost to greatest unit cost.



# Step-By-Step Instruction

Where appropriate, multiple standards are addressed in a lesson to link major topics at grade level.

## Lesson 14 Writing Expressions



### Focus Lesson

An **expression** consists of numbers, symbols, and operations that represent the value of something. A **numerical expression** contains only numbers and operations. An **algebraic expression** contains numbers, operations, and variables. **Variables** are letters that represent values that can change. **Terms** are the parts of an expression that are separated by addition, subtraction, or grouping symbols.

Expressions can include more than one number, operation, and variable. Some expressions include exponents. An **exponent** indicates how many times to use the **base** as a factor.

$$\text{base} \rightarrow 3^4 \leftarrow \text{exponent}$$
$$3^4 = 3 \times 3 \times 3 \times 3$$

Key words provide clues and help in translating operations. Some key words are listed.

- For addition: sum, plus, more than, increased by
- For subtraction: difference, fewer, less than, decreased by
- For multiplication: product, times, in all
- For division: quotient, groups of, shared equally



Neill wrote the expression  $\frac{4n}{n-5}$ .

Circle the correct option in each set so that the following statement is true.

Neill's expression represents the [ sum, difference, product, quotient ] of the terms [  $n$ ,  $4$ ,  $4n$ ,  $-5$ ,  $n-5$  ] and [  $n$ ,  $4$ ,  $4n$ ,  $-5$ ,  $n-5$  ].

- 1 What operation is occurring in the numerator of the expression? \_\_\_\_\_  
In the denominator? \_\_\_\_\_

|   |                                     |
|---|-------------------------------------|
| Lesson 9                                | Greater                             |
| Lesson 10                               | Integers and                        |
| Lesson 11                               | Absolute Value                      |
| Lesson 12                               | Coordinate Graphing                 |
| Lesson 13                               | Comparing Rational                  |
| <b>UNIT 3 Expressions and Equations</b> |                                     |
| 6.EE.1; 2.a,b; 6                        | Lesson 14 Writing Expressions...    |
| 6.EE.1, 2.c                             | Lesson 15 Evaluating Expressions... |
| 6.EE.3, 4                               | Lesson 16 Equivalent Expressions... |
| 6.EE.5, 7                               | Lesson 17 Equations                 |
| 6.EE.5, 8                               | Lesson 18 Inequalities              |
| 6.EE.9                                  | Lesson 19 Relationships Between     |
| <b>UNIT 4 Geometry</b>                  |                                     |
| Lesson 20                               | Area                                |
| Lesson 21                               | Volume                              |



# Guided Practice

The guided practice items pose multistep questions with hints to direct students in forming their answers.

Peer work

**Guided Practice**

The bottom of a fish tank is in the shape of a regular hexagon like the one shown below.

Circle an option from the set to make the sentence below true.

The area of the bottom of the fish tank is **less than 500**, **between 500 and 550**, **between 550 and 600**, **between 600 and 650**, **between 650 and 700**, **greater than 700** square centimeters.

- 1 If the hexagon is divided into triangles that are all the same size, how many triangles will there be?
 

Let each side of the hexagon represent the base of a triangle.
- 2 What are the lengths of the base and the height of each of those triangles?
 

How is the height of one triangle related to the height of the hexagon?

Which measurement describes the area, in square centimeters, of the bottom of the fish tank?

**Guided Practice**

Fill in the missing numbers in Boxes 1, 2, 3, and 4 below to show how to determine the quotient of  $17.44 \div 3.2$ .

$$\begin{array}{r} 32 \overline{) 160} \\ \underline{144} \\ 128 \\ \underline{0} \end{array}$$

Box 1

Box 2

Box 3

Box 4

- 1 How many places to the right does the decimal point move in the divisor? \_\_\_\_\_  
In the dividend? \_\_\_\_\_  

Compare 3.2 and 32.
- 2 How many times does 32 go into the whole number part of the dividend? \_\_\_\_\_  

What number times 32 is equal to 160?
- 3 Describe in words how to divide when a difference in the division algorithm is smaller than the divisor.  
\_\_\_\_\_  
\_\_\_\_\_  

You can add as many 0s as needed in the dividend to keep dividing.

What numbers go in Boxes 1, 2, 3, and 4?

ADMIT ONE

# Assessment Type Questions

The independent practice section includes a number of different problem types, based on those used in Common Core assessments. Some items require students to perform multiple steps to find the correct answer. Tasks required of students vary; they may:

- Perform computations
- Plot points on a coordinate plane
- Answer multiple-choice questions with more than one right answer
- Complete a table
- Measure or draw a figure

**Independent Practice**

7 Triangle  $LMN$  has a right angle at vertex  $L$ . The coordinates of vertices  $L$  and  $M$  are shown on this coordinate plane.

The area of triangle  $LMN$  is 10 square units. Draw and label **all** possible locations of vertex  $N$  on the coordinate plane above.

**Independent Practice**

Solve the following problems.

1 A triangular sign is shown below.

What is the area, in square centimeters, of this sign?

\_\_\_\_\_ square centimeters

2 One leg of a right triangle is half the length of the other leg. One leg has a length of 10 meters. What could be the area, in square meters, of this triangle? Select all that apply.

- A 25 m<sup>2</sup>
- B 50 m<sup>2</sup>
- C 100 m<sup>2</sup>
- D 150 m<sup>2</sup>
- E 200 m<sup>2</sup>

is located at  $(6, -1)$ . Point  $T$  is  
is true.  
to point  $R$  by

## Flashcards

Flashcards in the back of the book help students learn important symbols, formulas, and concepts from the lessons. Blank cards are also provided. Students can work independently or with their class to create new flashcards for challenging topics.

$$\frac{1}{3} \quad 1:3 \quad 1 \text{ to } 3$$

ratio

$$4^2 \leftarrow$$

exponent

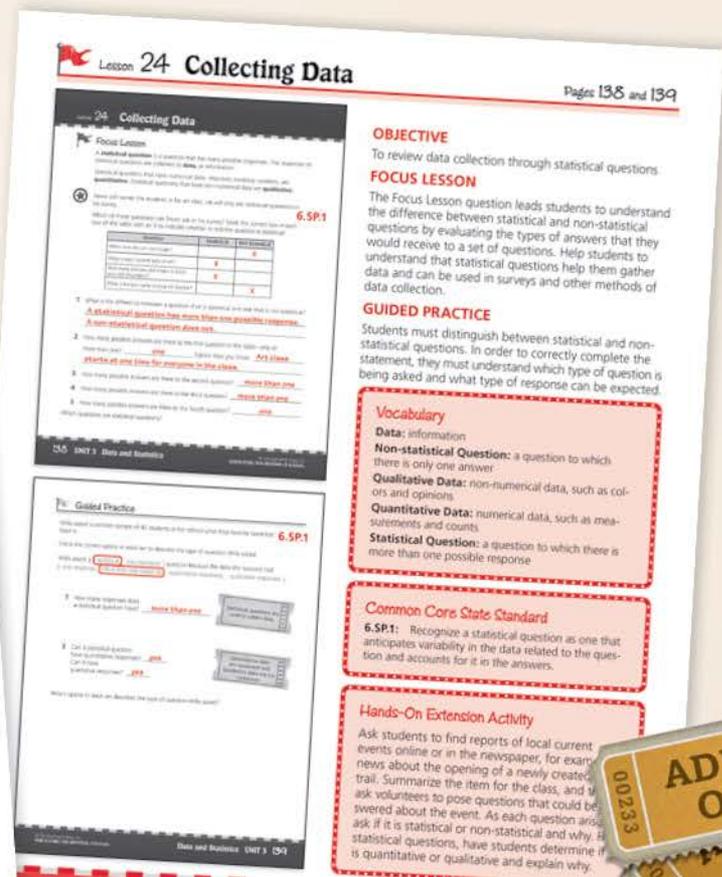
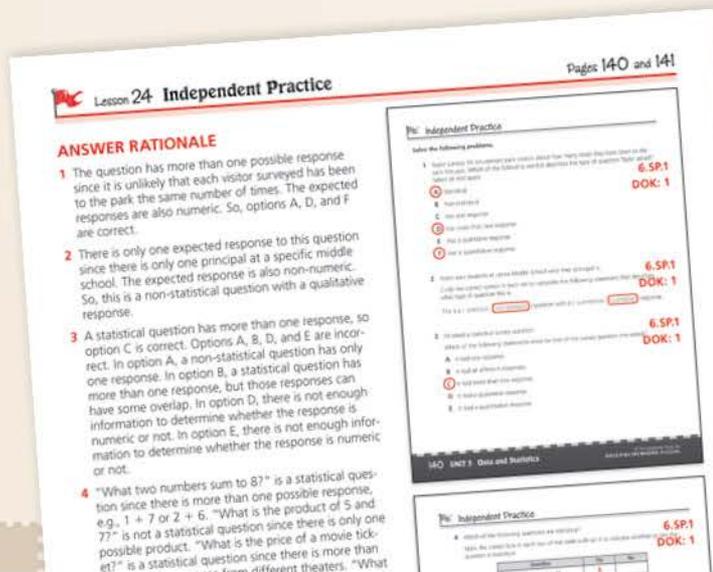
$$A = bh$$

area of a parallelogram  
Area = base  $\times$  height

# Teaching Support

The annotated teacher's edition provides comprehensive support from Focus Lessons through Independent Practice.

- Common Core State Standards and Depth of Knowledge (DOK) correlations
- suggestions for use/teaching strategies
- hands-on extension activities
- annotated student pages with item rationale and commentary



# Teaching Support

## Reproducibles

- bonus lessons
- cut-out tools
- reference sheet

### The Best Buy

Have you ever gone to a store to buy something and been bewildered by the choices? Not only may there be many different brands of a product, but often it comes in packages of various sizes, each with a different price. As a smart consumer, you want to get the most for your money. How can you decide which is the best buy?

Suppose you have gone to the pet food store to buy some Perfect Puppy food. The shelves are stocked with bags of Perfect Puppy in three different sizes. The smallest size weighs 5 pounds and costs \$3.50. A medium bag holds 18 pounds for \$9.00. The largest size contains 40 pounds and is priced at \$18.00. How is it possible to compare different prices and sizes?



18 pounds \$9.00  
40 pounds \$18.00  
5 pounds \$3.50



UNIT PRICE  
70¢ PER 1 POUND  
\$3.50

To find the best buy, you can use rates. A rate is a kind of ratio, a comparison of two numbers. A rate always relates two different kinds of units. The rate "miles per hour," for example, relates units of distance to units of time. For the puppy food, you need to find the relationship between the cost of a bag and the weight.

To find this rate, write a fraction for each bag size. Put the cost in the numerator and the weight in the denominator.

Small =  $\frac{\$3.50}{5 \text{ pounds}}$   
Medium =  $\frac{\$9.00}{18 \text{ pounds}}$   
Large =  $\frac{\$18.00}{40 \text{ pounds}}$

Now find the unit rate for each size. The unit rate is the rate of 1 unit, that is, when the denominator is 1. Most rates are expressed this way. For example, you might travel 100 miles in 2 hours, but you would probably express the rate as 50 miles per hour, or 50 miles/1 hour. When money is involved, the unit rate is sometimes called the unit cost.

To find the unit cost of the dog food, find the price per pound of each bag. Divide the numerator and denominator by the number in the denominator.

Small =  $\frac{\$3.50}{5 \text{ pounds}} \div \frac{5}{5} = \frac{\$0.70}{1 \text{ pound}}$   
Medium =  $\frac{\$9.00}{18 \text{ pounds}} \div \frac{18}{18} = \frac{\$0.50}{1 \text{ pound}}$   
Large =  $\frac{\$18.00}{40 \text{ pounds}} \div \frac{40}{40} = \frac{\$0.45}{1 \text{ pound}}$

When you know the price per pound of each bag, the bags are easy to compare. The 40-pound bag has the lowest unit cost, so it has the best price.

Of course, stores usually make it easy to compare prices. On the shelf beneath the item, a price label displays the retail price and the unit cost. So you can leave your calculator at home!

Put an X in the square beside the best answer.

- The unit price of an item at a store is often found \_\_\_\_\_.
  - on a wall chart
  - on the shelf under the item
  - in the numerator
  - on the back of the package
- The main idea of the article is that \_\_\_\_\_.
  - fractions can express rates
  - prices for dog food vary by the package weight
  - unit rates are useful for comparing prices
  - the best buy is always the largest package
- If a 3-pound bag of nuts costs \$9, you can decide that the unit cost would be \_\_\_\_\_.
  - \$1 per pound
  - \$2 per pound
  - \$3 per pound
  - \$4 per pound
- What is the first step in finding the best buy among a choice of package sizes?
  - Select the package with the lowest unit price.
  - Write the cost and weight of each package as a fraction.
  - Divide each fraction to find the unit cost of each package.
  - Compare the unit prices of the packages.
- Dividing  $\frac{\$2.50}{5 \text{ pounds}}$  by  $\frac{5}{5}$  results in \_\_\_\_\_.
  - a lower price per bag
  - a fraction in lowest terms
  - a higher price per bag
  - a unit fraction
- In the first paragraph, the word consumer means \_\_\_\_\_.
  - diner
  - shopper
  - person
  - owner

Write your answer to the following question on the lines below.

Many products are sold in different sizes. Usually you'll want to save money by buying the size that has the lowest unit cost, but not always. Describe situations where you might choose to buy a size that has a higher unit cost.

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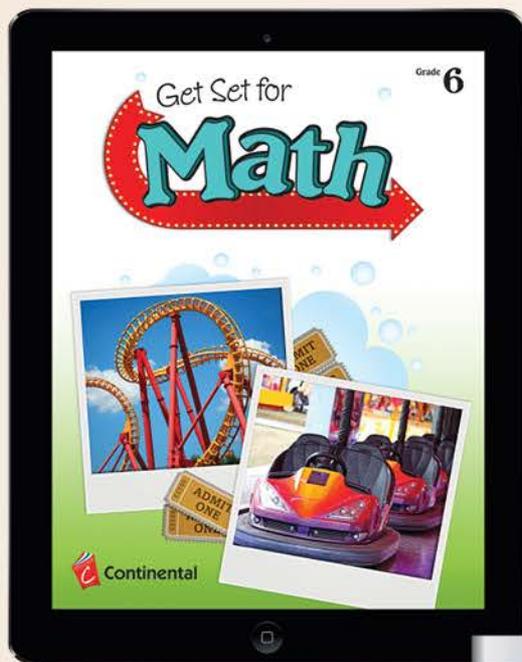


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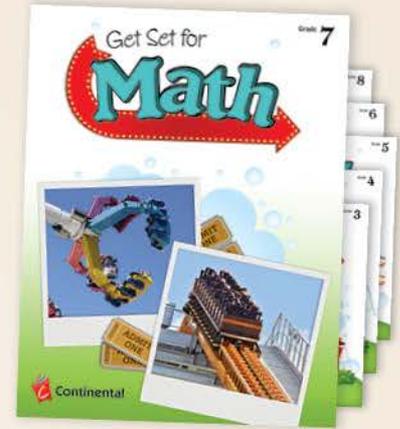
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