

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Complete each sentence using the words *before*, *after*, or *between*.

- 1 Bobby eats breakfast _____ he wakes up.
- 2 Bobby rides the bus _____ eating breakfast and sitting at his desk at school
- 3 Bobby eats breakfast _____ he sits at his desk at school.

▶ Definition Review

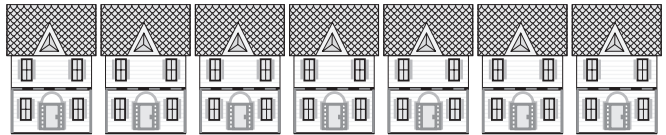
Counting numbers are the numbers used to count objects.

Count the number of objects in each picture. Then write the number on the line.

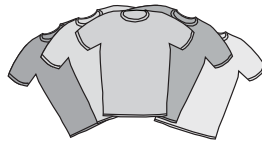
- 4 I counted _____ pennies.



- 6 I counted _____ houses.



- 5 I counted _____ shirts.



3, 5, and 7 are all counting numbers.

▶ Application

Follow the directions to play the game.

- Choose 6 students to form a line.
- Choose another student to roll a number cube.
- The student who rolled the number cube counts the students in the line until the number rolled is reached.
- The last student counted steps forward.
- That student states his/her relationship to the students around him/her, using the words *before*, *after*, or *between*.
- Continue the game until all students have a turn counting or speaking.

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▶ Activate Prior Knowledge

Complete each sentence using the words **more than**, **less than**, or **zero**.

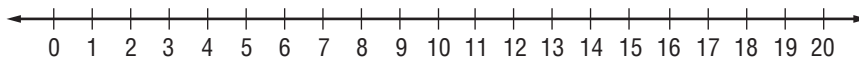
Jack has **5** balloons, Garcia has **0** balloons, and Mia has **1** balloon.

- 1 Garcia has _____ balloons.
- 2 Mia has _____ Jack.
- 3 Jack has _____ Garcia.

▶ Definition Review

Whole numbers are the set of all counting numbers and zero. **Whole numbers** are found on a number line. Numbers to the left of, or before, other numbers on a number line are less than the numbers to their right.

Count the number of stars in each box, then place the number in the correct place on the number line.



4 ☆☆☆☆☆☆☆☆

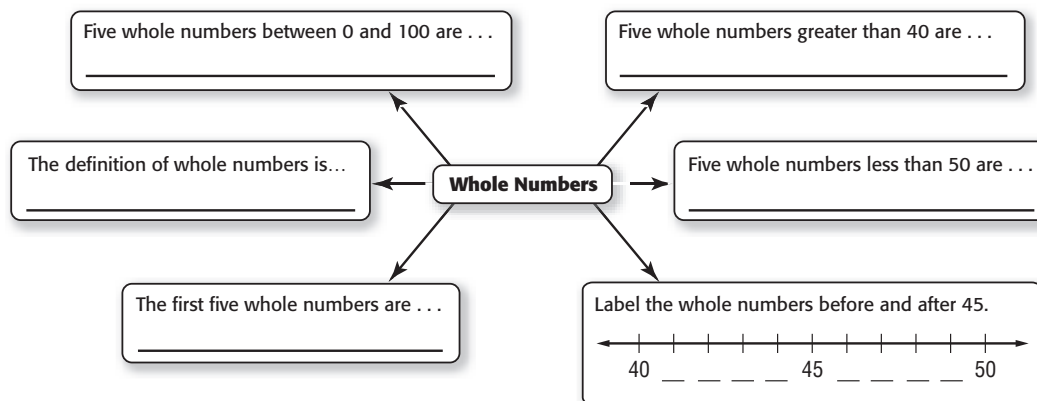
5 ☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆☆

Write *before*, *after*, or *between* to make each sentence true.

- 6 The number 9 is _____ 16 on the number line.
- 7 The number 20 is _____ 16 on the number line.
- 8 The whole number 0 is _____ all other whole numbers on the number line.
- 9 The number 16 is _____ the numbers 9 and 20 on the number line.

▶ Application

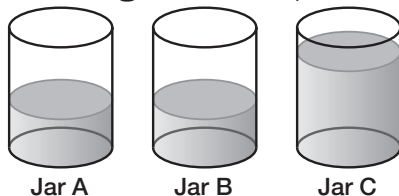
Use your knowledge of whole numbers and the words *zero*, *less than*, *greater than*, *before*, *after*, and *between* to complete the concept map for whole numbers.



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▶ Activate Prior Knowledge

Complete each sentence using the words *greater than*, *less than*, or *equal to*.



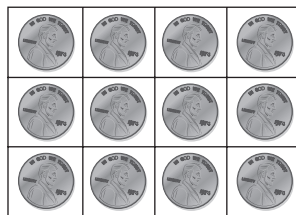
- The amount of liquid in Jar A is _____ the amount of liquid in Jar B.
- The amount of liquid in Jar B is _____ the amount of liquid in Jar C.
- The amount of liquid in Jar C is _____ the amount of liquid in Jar A.

▶ Definition Review

An **equation** is a mathematical sentence that states that two expressions are equal.

An **expression** is a combination of numbers, variables, and operation symbols.

Items that have the same value are **equal**.



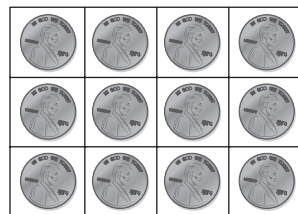
- Write an expression to show the number of pennies in 2 rows. Expression: _____
- Write an equation to show the number of pennies in 2 rows. Equation: _____
- The number of pennies across is _____ to the number of pennies down.
- PUZZLE** I am a whole number. If you add me to 14 you get 17. Write an equation to represent my number. _____
- PUZZLE** I am in an equation but not in an expression. What am I? _____

▶ Application

Use the words in the box to fill in the blanks.

counting whole equal expression equation

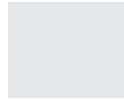
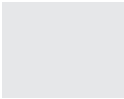
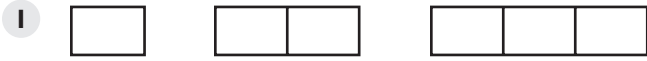
- The _____ number 12 represents the number of pennies.



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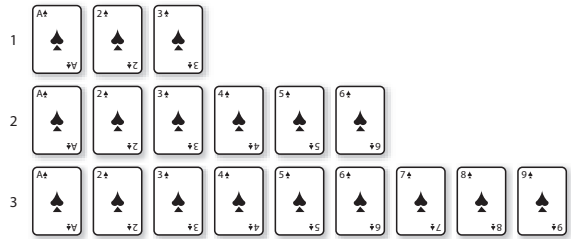
▶ Activate Prior Knowledge

Complete each number pattern.



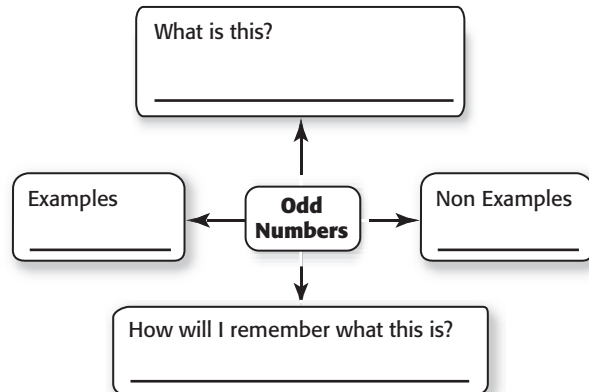
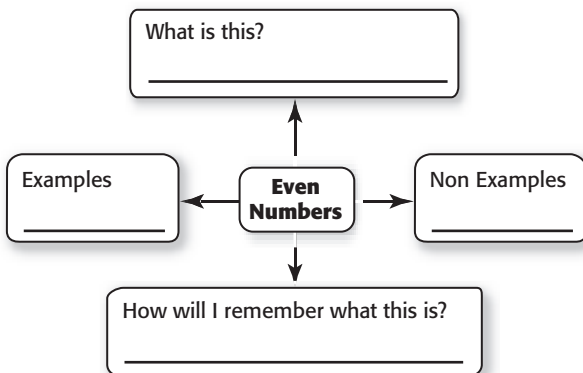
▶ Definition Review

- 3 How many cards are in the first row? _____
Is this an **even** or **odd** number? _____
- 4 How many cards are in the second row? _____
Is this an **even** or **odd** number? _____
- 5 How many cards are in the third row? _____
Is this an **even** or **odd** number? _____
- 6 If the **pattern** were to continue to row 4, how many cards would there be? _____



▶ Application

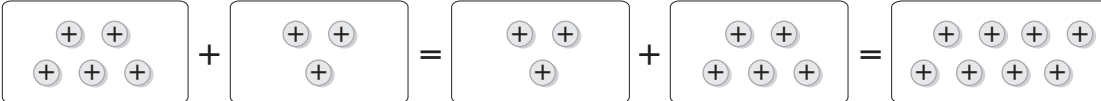
Use your knowledge of even numbers and odd numbers to complete the graphic organizers.



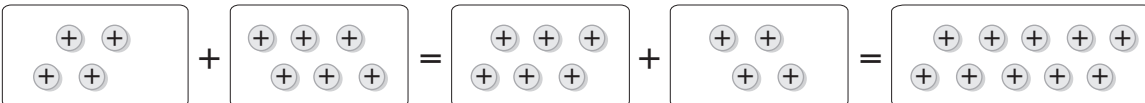
Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Fill in the blanks to complete each equation.

1 

_____ + _____ = _____ + _____ = _____

2 

_____ + _____ = _____ + _____ = _____

▶ Definition Review

Use the words in the box to answer the following questions.

equal equation Commutative Property of Addition

- What property is shown in the picture equations above? _____.
- Two items having the same value are _____.
- What is a mathematical sentence that contains an equal sign? _____

▶ Application

Students will use number cards to produce several equations.

- Each student needs 25 cards: 15 with numbers ranging from 1 to 15, 5 with a plus sign, and 5 with an equal sign.
- Each student creates an equation using 3 number cards, 1 plus sign, and 1 equal sign.
- Students use the Commutative Property to rearrange the number cards in their equations.
- Students repeat activity using a variety of different numbers for each new equation.

Try this: Create an equation using 4 number cards and 2 plus signs. Rearrange the numbers in this equation using the Commutative Property.

1-6

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Answer the questions.

- 1 Selina has a stack of dimes and a stack of pennies.
Fill in the blanks. How much money does Selina have?



Selina has _____ dimes and _____ pennies.
She has a total of _____ cents.

- 2 Lucas has a stack of dimes and a stack of pennies.
Look at the picture and fill in the blanks.
How much money does Lucas have?



Lucas has _____ dimes and _____ pennies.
He has a total of _____ cents.

▶ Definition Review

Fill in the blanks.

- 3 The number in row 2 is written in _____ form.
- 4 Write the number in row 2 in **standard form**. _____
- 5 The number in row 4 is written in _____ form.
- 6 Write the number in row 3 in **expanded form**. _____

Row	Number
1	Eleven
2	Forty-six
3	9 tens, 3 ones
4	$70 + 2$

▶ Application

Chip Exchange

- Students work in pairs. Each student needs a bag of 30 chips: 5 blue chips and 25 yellow chips. Blue chips will count as 10 and yellow chips will count as 1.
- The first student chooses a number between 10 and 60 and represents the number using a combination of blue and yellow chips.
- The second student chooses a different combination of blue and yellow chips to represent the same number.
- Both students write the number in standard form, and in the 2 expanded forms shown by the 2 sets of chips.
- Continue the exercise until each student has chosen 3 numbers.

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Complete each sentence using the words *greater than*, *less than*, or *equal to*.

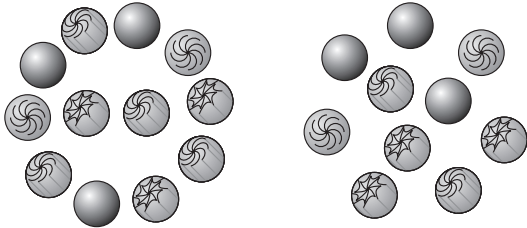
Jocelyn, Josh, and Max stacked their books in stacks of five. Jocelyn has 10 books, Josh has 20 books, and Max has 10 books.

- 1 Josh's number of books is _____ Jocelyn's number of books.
- 2 Max's number of books is _____ Jocelyn's number of books.
- 3 Jocelyn's number of books is _____ Josh's number of books.

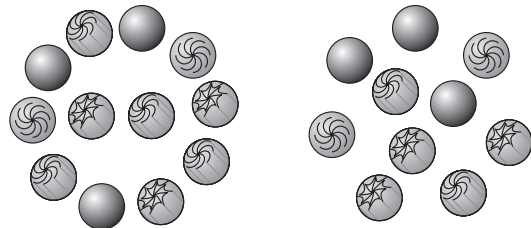
▶ Definition Review

To **compare** is to examine and discover differences, for example, which number is larger.

- 4 **Compare** the two pictures. Circle the picture that has the greater number of objects.



- 5 **Compare** the two pictures. Circle the picture that has the fewer number of objects.



▶ Application

Follow the directions to play the game.

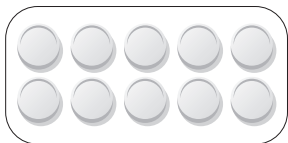
- Students work in pairs. Each student gets two number cubes.
- The first student rolls his/her number cubes. The cube on the left is the tens digit and the cube on the right is the ones digit.
- Both students write down the two-digit number represented by the cubes.
- The second student rolls his/her number cubes. Again, the cube on the left is the tens digit and the cube on the right is the ones digit.
- Both students write down the two-digit number represented by the cubes.
- The students then compare the two-digit numbers using the symbols $<$, $>$, or $=$.
- Points are scored according to the following:
 - If the numbers are equal, neither student gets a point.
 - The student who has the greater number gets a point.
- Continue to play the game until one student reaches 10 points.

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Complete each sentence using the words *greatest* or *least*.

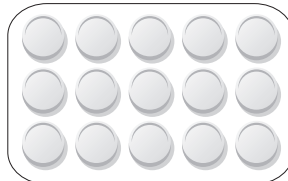
1.



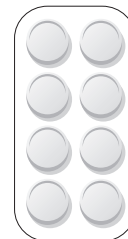
2.



3.



4.



- 1 Group #3 has the _____ number of counters.
- 2 Group #2 has the _____ number of counters.
- 3 Group #1 has the _____ height.
- 4 Group # 4 has the _____ height.

▶ Definition Review

The **place value** is the value given to a place a digit is placed in a number.

Underline the place value in the second number that matches the first number.

Complete each statement using the words *ones, tens, or, hundreds*.

- 5 45, 34
- 6 We have underlined the _____ place.
- 7 82, 15
- 8 We have underlined the _____ place.
- 9 100, 125
- 10 We have underlined the _____ place.

▶ Application

Follow the directions to play the game.

- Each student needs 2 number cubes.
- One at a time, each student rolls the number cubes and creates a two-digit number using the numbers rolled. Each student writes down his/her number.
- The student with the greatest number is awarded 1 point and the student with the least number is awarded 1 point. All of the other students receive 0 points.
- Continue the game until one student has received 15 points.

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Complete each sentence using the words *hundreds*, *tens*, or *ones*.

Use the picture to answer problems 1, 2, and 3.



- 1 Adara has 8 _____.
- 2 Adara has 5 _____.
- 3 Adara has 3 _____.

▶ Application

Follow the directions to play the game.

- Work in groups of 3. Each group will need a dry-wipe board and eraser.
- Student 1 writes a 3-digit number.
- Student 2 creates a number line. Label the far left and right sides of the line with the two 100s the number comes between. Then, Student 2 labels the 10s between the beginning and end points of the number line.
- Student 3 identifies the location of the written number on the number line by placing a red dot on the line.
- Students 1 and 2 give a thumbs-up or thumbs-down to show if they agree or disagree with Student 3's placement.
- Student 3 corrects the location if necessary.
- Students switch jobs and continue the activity as time allows.

Example: Student 1 writes the number 345. Student 2 creates a number line with 300 on the far left and 400 on the far right. Student 2 labels numbers 300, 310, 320, etc. Student 3 puts a red dot between 340 and 350. Students 1 and 2 give a thumbs-up.

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Round each price to the nearest tens.

1



2



3



▶ Definition Review

Circle the correct word to complete each statement. Choices are given as *italic words or phrases*.

To **round** a number to the nearest hundred:

- 4 Step 1: Underline the digit in the *ones / tens / hundreds* place.
- 5 Step 2: Circle the digit to the *right / left* of the underlined digit.
- 6 Step 3: Compare the circled digit to 5.
If **less than** 5, then the underlined digit *does not change / increases 1*.
If equal to 5, then the underlined digit *does not change / increases 1*.
If **greater than** 5, then the underlined digit *does not change / increases 1*.
- 7 Step 4: Replace all digits to the *right / left* of the underlined digit with zero.

▶ Application

Follow the directions to play the game.

- Work in pairs. Each pair needs a deck of number cards and a number line labeled zero to 1,000. The number line should be marked off by 100s.
- Each student chooses 3 cards from the top of the deck and creates a 3 digit number using each digit one time.
- Round the numbers to the nearest hundreds.
- Place a mark on the number line that represents the rounded numbers.
- Write an inequality statement to compare the rounded numbers using $<$, $=$, or $>$.

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Complete the check by writing the dollar amount in digits and in word form.

- 1 Gary borrowed 2 hundred dollar bills and 3 ten dollar bills from his mother. He wrote her a check to repay the debt.

Gary Midar 123 High Street, Santa Cruz, CA 95064		DATE <u>9/14/2007</u>	001
PAYEE <u>Sarah Midar</u>	\$		
		/00 DOLLARS	
BANK •	<u>Gary Midar</u>		
⑈001⑈12345⑈123⑈123456⑈123⑈			

▶ Definition Review

Place value is the value given to a *digit* by its position in a number.

Complete each statement.

- 2 The **place values** of a 4-**digit** number, in order from largest to smallest, are _____, _____, _____, and _____.
- 3 The number 3,415 is written as three **thousand**, four hundred fifteen in _____ form. It is written as $3,000 + 400 + 10 + 5$ in _____ form.

▶ Application

Follow the directions to play the game.

- Work in groups of three. Each group needs a number card deck.
- Place the cards face down.
- Each student chooses 2 to 5 cards and makes the largest possible number.
- Each student writes and reads their number to the group.
- Each student identifies the highest place value in their number.
- Each group orders the numbers from greatest to least.
- Replace the cards.
- Repeat steps until a variety of numbers have been ordered.

TRY THIS:

Follow the directions, but make the largest possible even or odd number.

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Round each dollar amount to the nearest hundred.

1



2



3



4



▶ Definition Review

To **round** numbers you can use a number line or a place-value chart.

Answer the questions.

- 5 Is 2,718 closer to 2,000 or 3,000? _____
- 6 Is 4,720 closer to 4,700 or 4,800? _____
- 7 Draw a line from each symbol to its meaning.

<	greater than
=	less than
>	equal to
- 8 If two numbers are compared on a number line, where is the smaller one? _____
- 9 Circle the number **greater than** 79. 76 79 80
- 10 Circle the number that is **less than** 24. 22 24 42

Practice: Vocabulary and English Language Development

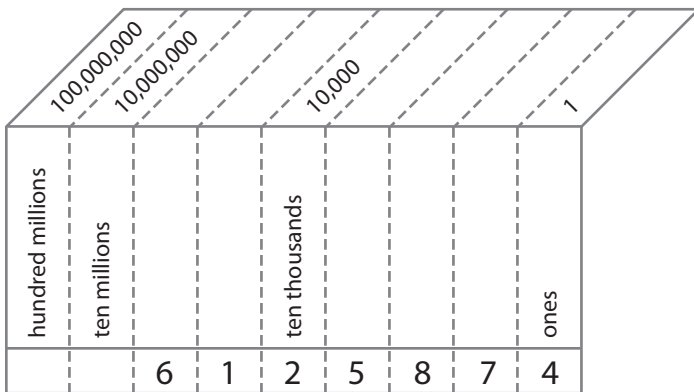
▶ Activate Prior Knowledge

Consider the following results from a calculator screen. Write each number correctly in standard form, using commas to separate the periods. Write each number in word form also.

- 1 12457000 _____
- 2 5047892 _____
- 3 843046670 _____

▶ Definition Review

- 4 Complete the place value chart by labeling the place values.



As the number of digits increase, the **place value** chart has to get bigger. To help you read and write numbers, **place values** are grouped into **periods**. **Periods** are separated by commas.

Consider the number 123,456,789. Answer the questions.

- 5 In what **period** are the digits 456? _____
- 6 In what **period** are the digits 789? _____
- 7 What is used to separate **periods**? _____
- 8 What is the **place value** of the 2? _____
- 9 What is the **place value** of the 4? _____
- 10 What is the **place value** of the 3? _____

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Examine the list of populations of several metropolitan areas in the United States.

- 1 Round each population to the nearest ten thousand.

Metropolitan Area Population (includes surrounding areas)	
Chicago	9,157,540
Los Angeles	16,373,645
New York	21,199,865
San Francisco	7,039,362
Washington, D.C.	7,608,070

- 2 Order the metropolitan areas by their rounded populations from greatest to least.

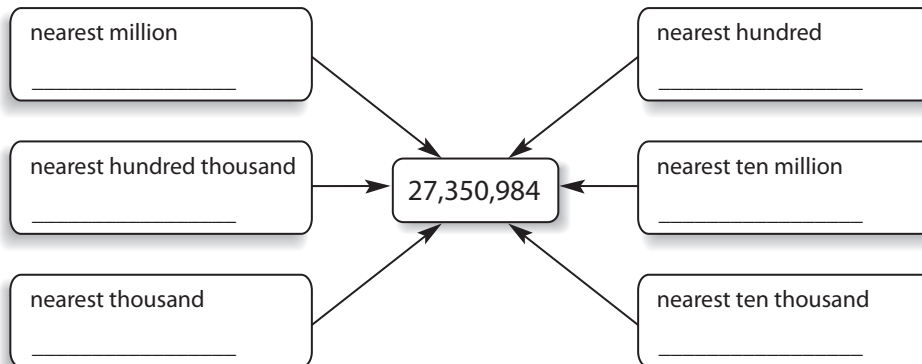
▶ Definition Review

Complete the sentences.

- 3 When comparing two numbers, use the symbols _____ for **less than**, _____ for **greater than**, and _____ for equal to.
- 4 The last step in **rounding** a number is to change all digits to the _____ of the given place value to _____.

▶ Application

Complete each part of the graphic organizer, rounding as indicated.



Practice: Vocabulary and English Language Development

Activate Prior Knowledge

Complete the following sentences.

- 1 There are _____ dimes in \$1. A _____ is $\frac{1}{10}$ of \$1.00.
- 2 There are _____ pennies in \$1. A _____ is $\frac{1}{100}$ of \$1.00.
- 3 There are _____ quarters in \$1. A _____ is $\frac{1}{4}$ of \$1.00.
- 4 There are _____ nickels in \$1. A _____ is $\frac{1}{20}$ of \$1.00.

Definition Review

A **decimal point** is a period separating the ones and the **tenths** in a number.

Complete the following sentences using the words *before* or *after*.

- 5 In the number 5.24, the **decimal point** is _____ the 2.
- 6 In the number 8.31, the **decimal point** is _____ the 8.
- 7 In the number 6.09, the **decimal point** is _____ the 0.

Write the standard form of each number.

- 8 seven and four tenths _____
- 9 four and twenty-nine hundredths _____
- 10 eight and three fourths _____

Application

Follow the directions for the activity.

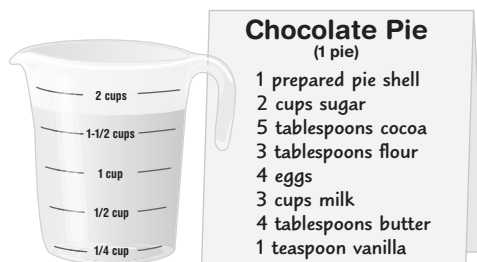
- Students each bring in a magazine or newspaper from home.
- Students look through newspapers to find 3 to 5 numbers in decimal form and 3 to 5 numbers in fraction form.
- Students record each of the numbers they find in both decimal and fraction form.
- Students and teachers discuss why numbers are reported in different forms.
- Students and teachers discuss if they think it is appropriate to use any form of a number for any situation, or if some forms are better for some situations and others better for other situations.

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Double the ingredients in the recipe.

- 1 Yo needs to make two chocolate pies for a school bake sale. Double her recipe, to make two chocolate pies.



Chocolate Pie

1 prepared pie shell _____	4 eggs _____
2 cups sugar _____	3 cups milk _____
5 tablespoons cocoa _____	4 tablespoons butter _____
3 tablespoons flour _____	1 teaspoon vanilla _____

▶ Definition Review

Write the vocabulary word(s) that completes the following sentence.

A group of related facts using the same numbers is called a _____.

▶ Application

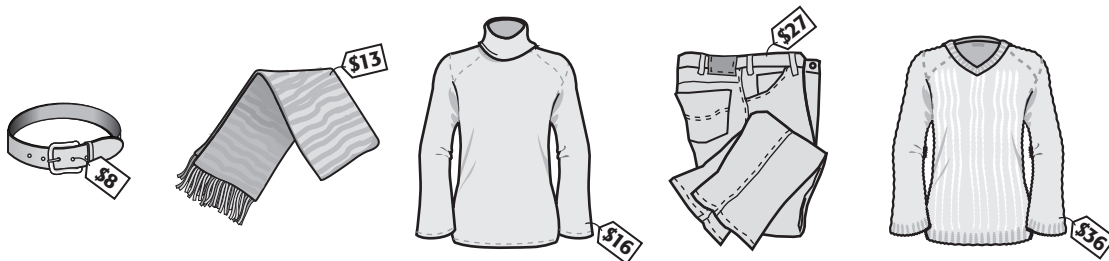
Follow the directions to play the game.

- Four players compete using a deck of cards. The deck of cards should be prepared by removing jokers, jacks, queens, and kings.
- The cards are shuffled. All cards are dealt among the players.
- All players lay down all their pairs. Pairs are defined as "make ten" pairs – two cards whose total is 10. Aces should act as 1.
- Player 1 chooses one card from the cards belonging to the player on his/her right. If a pair is made, the pair is laid down.
- Play moves to the left. The next player chooses one card from the player on his/her right. If a pair is made, the pair is laid down.
- Play continues until one player lays down a pair and has no more cards in his/her hand. This player is the winner.

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Answer each question using the information shown.



- Suppose that Alita had \$49 to spend, and spent all of it on two items. Which two items did she buy?

- Suppose that Alita bought two of the same item and spent \$54. What was the item?

▶ Definition Review

This lesson is about facts involving 6's and 7's. The **doubles** are $6 + 6 = 12$ and $7 + 7 = 14$. The **near doubles** are $6 + 7 = 13$ and $7 + 8 = 15$.

Match each vocabulary term to its example.

- | | |
|----------------------|--------------------------------------|
| 3 Near doubles _____ | A. n |
| 4 Equation _____ | B. $4 + n$ |
| 5 Expression _____ | C. $4 + n = 9$ |
| 6 Variable _____ | D. $6 + 7 = 6 + 6 + 1 = 12 + 1 = 13$ |

▶ Application

Follow the directions to compete in adding 6's and 7's.

- Students compete in pairs. Each needs a piece of paper and a pencil.
- Both students write $6 + 7$ and find the sum. If both students are correct, they go to the next problem.
- Both students write $67 + 76$ and find the sum. If both students are correct, they go to the next problem.
- The next sums are $676 + 767$, $6767 + 7676$, $67676 + 76767$, and so forth.
- If one player is correct and another wrong, the player who is correct wins.

Game can also be played with sums: $6 + 7$, $66 + 77$, $666 + 777$, $6666 + 7777$, etc.

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Find the total.

A battle group consists of 1 multi-purpose aircraft carrier, 1 nuclear-propulsion aircraft carrier, 4 battleships, 2 cruisers, 4 destroyers, no frigates, 2 attack subs and 1 ballistic missile sub.

Naval Warships

Classification	Types			
Aircraft Carriers	Multi-purpose Aircraft Carrier	Nuclear-Propulsion Aircraft Carrier		
Surface Combatants	Battleship	Cruiser	Destroyer	Frigate
Submarines	Attack Sub	Ballistic Missile Sub		

- Write and solve an expression for the total number of aircraft carriers that are in this battle group. _____
- Write and solve an expression for the total number of submarines that are in this battle group. _____
- Write and solve an expression for the total number of ships in this battle group. _____

▶ Definition Review

Is It Addition?

For each of the following terms write *yes* if addition is indicated or *no* if it is not.

- | | | |
|---------------|-----------------|--------------------|
| 4 sum _____ | 5 less _____ | 6 difference _____ |
| 7 total _____ | 8 greater _____ | 9 plus _____ |

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Use the table to find the metropolitan area populations.

The United States Census Bureau defines metropolitan statistical areas and maintains population records on cities and areas.

California Cities	2005 Population
Fairfield	96,178
Petaluma	54,548
Santa Barbara	92,325
Santa Maria	77,423
Santa Rosa	147,595
Vallejo	116,760

- 1 What is the total population of the Santa Barbara-Santa Maria (Santa Barbara county) metropolitan area? _____
- 2 What is the total population of the Vallejo-Fairfield (Salano county) metropolitan area? _____
- 3 What is the total population of the Santa Rosa-Petaluma (Sonoma county) metropolitan area? _____

▶ Definition Review

Multiples of 10 means counting by 10's: 10, 20, 30, 40, 50, 60, 70 ...

Multiples of 100 means counting by 100's: 100, 200, 300, 400, 500, 600, 700 ...

Multiples of 1,000 means counting by 1,000's: 1,000; 2,000; 3,000; 4,000; 5,000; 6,000; 7,000 ...

Fill in the blanks.

- 4 An example of a multiple of 10 is _____. An example of a multiple of 100 is _____. An example of a multiple of 1,000 is _____.

▶ Application

Follow the directions to play the game.

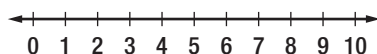
- Students work in groups of three: two students compete in adding multidigit numbers using paper and pencil, one student checks results with a calculator.
- Players use paper and pencil to add $1,111 + 1,111$. Student checker verifies sum on the calculator. The first student to correctly find the answer earns 1 point.
- Play repeats with $2,222 + 2,222$, and so forth until $9,999 + 9,999$.
- The player with the most points wins the match.
- Students change roles, with a different student in the role of checker. The game is repeated with five-digit numbers from $11,111 + 11,111$ to $99,999 + 99,999$.

Practice: Vocabulary and English Language Development

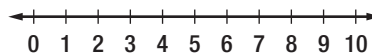
▶ Activate Prior Knowledge

List the other equations in the fact family. Show each on a number line.

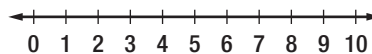
Consider the equation $7 + 2 = 9$. Its number line representation is shown below. Find three more equations in the same fact family. Show each on a number line.



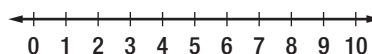
1 Fact family equation: _____



2 Fact family equation: _____



3 Fact family equation: _____

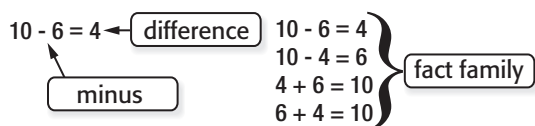


▶ Definition Review

Subtraction and addition are opposite operations.

Identify the parts of a subtraction equation.

Use the correct terms to identify the following. Fill in the blanks.



▶ Application

Follow the directions to play the game.

- Students compete in pairs using a 1-minute timer and two number cubes. Ten-sided number cubes are preferred.
- Student 1 rolls both number cubes as Student 2 starts the timer. Student 1 subtracts the two numbers and calls out the difference.
- Student 1 continues rolling the cubes and calling out the difference until time is up or the given difference is incorrect. Student 2 records the number of problems completed correctly as Student 1's score.
- Students reverse roles and the student with the greater score wins.

Practice: Vocabulary and English Language Development

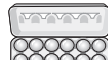
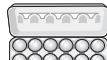
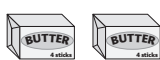
▶ Activate Prior Knowledge

Answer.

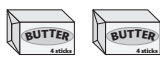
A restaurant advertises Old-Fashioned Pound Cake as its specialty dessert. The recipe is based on the original “pound of sugar, pound of flour, pound of butter, pound of eggs” recipe and makes a total of eight pound cakes. Dana is preparing a grocery list for what is needed to make the recipe. Fill in the blanks to complete her list.

Old-Fashioned Pound Cake

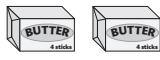
32 sticks of butter



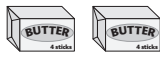
18 cups of sugar



26 cups of flour



6 dozen large eggs



Grocery List

1 _____ sticks of butter

2 _____ cups of sugar

3 _____ cups of flour

4 _____ dozen large eggs

(Makes 8 pound cakes.)

▶ Definition Review

Is It Subtraction?

For each of the following terms write *yes* if subtraction is indicated or *no* if it is not.

5 sum _____

6 product _____

7 difference _____

8 less _____

9 minus _____

10 plus _____

▶ Application

Follow the directions to play the game.

- Students compete in groups of 3 using six number cubes.
- Two students each roll three of the number cubes and each forms a three-digit number.
- The two students subtract the lesser number from the greater. The third student also solves to verify the answer. The student with the correct answer earns one point.
- Students change roles and repeat the previous two steps.
- The student with the greatest score wins the game.

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Complete the table.

The average daily traffic volume, for California state highways as of 2002, is given in the table below. Use addition and subtraction to complete the table.

Volume Group	Total	Rural	Urban
Under 1,000–29,999	11,616	10,419	1 _____
30,000–99,999	2,195	2 _____	1,254
100,000 and Over	1,545	96	3 _____
Total	4 _____	11,456	3,900

▶ Definition Review

Subtracting large numbers with zeros requires **regrouping**. Regrouping is naming a number in another way.

Answer each question.

- 5 Write two words or phrases that would indicate subtraction.

- 6 Explain when regrouping is necessary in a subtraction problem.

▶ Application

Follow the directions to play the game.

- Students compete in groups of three, using five number cubes. Ten-sided number cubes are preferred.



- One student rolls two of the cubes and forms a three-digit number with 0 as the tens digit. A second student rolls the other three number cubes and forms another three-digit number.
- The two students subtract the lesser number from the greater number. The third student also solves to verify the answer. The student with the correct answer earns one point.
- Students change roles and repeat the previous two steps.
- The student with the greatest score wins the game.

Practice: Vocabulary and English Language Development

Activate Prior Knowledge

Complete the table.

Complete the table by calculating the missing information.

Age Group	Number of Licensed Drivers	Number of Drivers NOT in a Collision	Number of Drivers Involved in a Collision
15–19 years	892,200	853,178	1 _____
20–34 years	6,445,700	6,309,673	2 _____
35–54 years	9,445,800	9,312,148	3 _____
55 years and older	5,194,000	5,140,265	4 _____

Definition Review

Use multiples to estimate.

Answer the following questions.

- 5 What are two reasons to estimate?

- 6 When should a number be rounded up and when should it be rounded down?

Complete the following activity.

- Have students work in pairs.
- Have each pair find data to create their own problem involving subtraction of numbers, at least in the thousands. Examples might include distances between cities or attendance at sporting events.
- Have students write and solve the problem, then trade problems with another pair and solve that problem.

Practice: Vocabulary and English Language Development

Activate Prior Knowledge

Write a two multiplication expressions that can be used to find the product. Then find the product.

- | | | |
|--|---|--|
| <p>1 A sheet of stamps has 4 rows and 5 columns of stamps. Find the number of stamps on the sheet.</p> <p>_____</p> | <p>2 A package of granola bars has 6 bars. Find the number of granola bars.</p> <p>_____</p> | <p>3 A building has 8 floors with 7 windows on each floor.</p> <p>_____</p> |
|--|---|--|

Definition Review

Match each group with the multiplication expression.

- | | |
|---|---------------|
| 4 A florist arranges nine rows of flowers with 10 flowers in each row. | 9×5 |
| 5 A bookshelf has 8 shelves, and 6 books on each shelf. | 8×6 |
| 6 The pet store has 9 rows of cats and 5 cats in each row. | 10×9 |

Application

Students work alone, in pairs, or in a group and use two-color counters to make and record all possible rectangular arrays for each number below.

- 16
- 18
- 24
- 36

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Write two multiplication expressions that can be used to find the product. Then find the product.

- 1 A dress has 2 rows of buttons with 10 buttons in each row. How many buttons are on the dress?

- 2 A grocer displays 10 rows of oranges with 4 oranges in each row. How many oranges did he display?

▶ Definition Review

Match each group with the multiplication expression.

- | | |
|--|---------------|
| 3 There are 4 rows of baseballs with 10 baseballs in each row. | 10×3 |
| 4 There are 10 rows of footballs with 3 footballs in each row. | 1×10 |
| 5 There is 1 row of basketballs with 10 basketball in the row. | 4×10 |

▶ Application

Complete the graphic organizer.

Identity Property of Multiplication		Zero Property of Multiplication	
Examples	Non-Examples	Examples	Non-Examples

Practice: Vocabulary and English Language Development

Activate Prior Knowledge

Fill in the blank with the words *twice* or *doubled*.

- 1 Ron brushes his teeth two times each day. He brushes them _____ a day.
- 2 Mr. Carson made two times the amount of chili. He _____ the recipe.
- 3 Delilah walks her dog two times each day. She walks the dog _____ a day.
- 4 Gabbi's puppy has grown. He used to eat 4 ounces of food. Now he eats 8 ounces of food. Gabbi _____ the amount of food her puppy eats.

Definition Review

Double and twice are two words that mean multiply by two.

Tell how many will be in each group if the number of items is doubled.

- 5 Eleven frogs.

- 6 Eight goldfish.

- 7 Thirteen stamps.

Application

Students work in pairs. Write each multiplication fact below on an index card. Write the problem on the front and the product on the back. Take turns using the cards to help memorize the multiplication facts.

$0 \times 2 = 0$

$1 \times 2 = 2$

$2 \times 2 = 4$

$3 \times 2 = 6$

$4 \times 2 = 8$

$5 \times 2 = 10$

$6 \times 2 = 12$

$7 \times 2 = 14$

$8 \times 2 = 16$

$9 \times 2 = 18$

$10 \times 2 = 20$

Practice: Vocabulary and English Language Development

Activate Prior Knowledge

Answer.

- 1 5 bookshelves with 4 books
_____ and _____ are factors of 20.
- 2 2 bookshelves with 10 books
_____ and _____ are factors of 20.
- 3 1 bookshelf with 20 books.
_____ and _____ are factors of 20.

Definition Review

A **fact family** is a group of related facts using the same numbers.

Write the remaining three facts for each fact family.

4 $5 \times 6 = 30$

5 $7 \times 5 = 35$

6 $1 \times 5 = 5$

7 $9 \times 5 = 45$

Application

Students work in pairs. Write each multiplication fact below on an index card. Write the problem on the front and the product on the back. Take turns using the cards to help memorize the multiplication facts.

$0 \times 5 = 0$

$1 \times 5 = 5$

$2 \times 5 = 10$

$3 \times 5 = 15$

$4 \times 5 = 20$

$5 \times 5 = 25$

$6 \times 5 = 30$

$7 \times 5 = 35$

$8 \times 5 = 40$

$9 \times 5 = 45$

$10 \times 5 = 50$

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Triple the number of coins each group.

- 1 A group of 4 pennies.

The number of pennies tripled is _____.

- 2 A group of 9 dimes.

The number of dimes tripled is _____.

- 3 A group of 7 quarters.

The number of quarters tripled is _____.

▶ Definition Review

A **factor** is a number that divides into a whole number evenly.

Circle the number which is *not* a factor of each number.

- 4 40

2, 10, 12, 20, 40

- 5 32

4, 6, 8, 16, 32

- 6 50

2, 5, 10, 15, 25

- 7 72

4, 6, 9, 18, 26

▶ Application

Complete the graphic organizer.

Doubling a Number		Tripling a Number	
Examples	Non-Examples	Examples	Non-Examples

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Answer.

- 1 4 rows of 10 bees.
40 is a multiple of _____ and _____
- 2 4 rows of 7 hammers.
28 is a multiple of _____ and _____
- 3 4 rows of 3 clocks.
12 is a multiple of _____ and _____

▶ Definition Review

A **multiple** of a number is the product of that number and any whole number.

Circle the number which is *not* a multiple of each number.

- | | |
|---------------------------|---------------------------|
| 4 3
12, 15, 18, 28, 30 | 5 4
18, 24, 36, 40, 44 |
| 6 6
12, 18, 22, 30, 42 | 7 8
16, 24, 40, 56, 62 |

▶ Application

Complete the graphic organizer.

Factors of a Number		Multiples of a Number	
Examples	Non-Examples	Examples	Non-Examples

Practice: Vocabulary and English Language Development

Activate Prior Knowledge

Write two multiplication expressions that can be used to find the product. Then find the product.

- 1 5 rows of trees with 6 trees in each row

- 2 6 rows of pine cones with 10 pinecones in each row.

Definition Review

Match each description with the multiplication expression that has the same product.

- | | |
|--|---------------|
| 3 4 rows of CDs with 6 CDs in each row. | 6×6 |
| 4 3 rows of erasers with 12 erasers in each row. | 1×18 |
| 5 3 rows of snowmen with 6 snowmen in each row. | 12×2 |

Application

Students work in pairs. Write each multiplication fact below on an index card. Write the problem on the front and the product on the back. Take turns using the cards to help memorize the multiplication facts.

$$0 \times 6 = 0$$

$$1 \times 6 = 6$$

$$2 \times 6 = 12$$

$$3 \times 6 = 18$$

$$4 \times 6 = 24$$

$$5 \times 6 = 30$$

$$6 \times 6 = 36$$

$$7 \times 6 = 42$$

$$8 \times 6 = 48$$

$$9 \times 6 = 54$$

$$10 \times 6 = 60$$

Practice: Vocabulary and English Language Development

Activate Prior Knowledge

Answer.

- 1 A grocery store has shelves with cans stacked – 6 rows with 7 cans in each row.
_____ is a multiple of 7 and 6.
- 2 A grocery store has shelves with cans stacked – 2 rows with 7 cans in each row.
_____ is a multiple of 7 and 2.
- 3 A grocery store has shelves with cans stacked – 5 rows with 7 cans in each row.
_____ is a multiple of 7 and 5.

Definition Review

A **fact family** is a group of related facts using the same numbers.

Write the remaining three facts for each fact family.

4 $5 \times 7 = 35$

5 $7 \times 10 = 70$

6 $3 \times 7 = 21$

7 $7 \times 1 = 7$

Application

Students work in pairs. Write each multiplication fact below on an index card. Write the problem on the front and the product on the back. Take turns using the cards to help memorize the multiplication facts.

$0 \times 7 = 0$

$4 \times 7 = 28$

$8 \times 7 = 56$

$1 \times 7 = 7$

$5 \times 7 = 35$

$9 \times 7 = 63$

$2 \times 7 = 14$

$6 \times 7 = 42$

$10 \times 7 = 70$

$3 \times 7 = 21$

$7 \times 7 = 49$

Practice: Vocabulary and English Language Development

Activate Prior Knowledge

Answer.

- 1 A carton of pears contains 8 trays of pears. Each tray has 3 rows with 4 pears in each row.
There are _____ pears in each carton.
- 2 A carton of apples contains 5 trays of apples. Each tray has 8 rows with 4 apples in each row.
There are _____ apples in each carton.

Definition Review

An **array** is a group of objects or symbols displayed in rows of the same length and columns of the same length.

Match each description with the multiplication expression.

- | | | |
|---|---|--------------|
| 3 | 8 rows of bananas with 3 bananas in each row. | 2×8 |
| 4 | 2 rows of pineapples with 8 pineapples in each row. | 8×3 |
| 5 | 4 rows of avocados with 8 avocados in each row. | 4×8 |

Application

Students work alone, in pairs, or in a group and use two-color counters to make all possible rectangular arrays for each number below.

- 32
- 40
- 48
- 64

4-10 Practice: Vocabulary and English Language Development

Activate Prior Knowledge

Tell how many will be in each group if the number of items is multiplied by 9.

- 1 8 rows of buttons by 7 columns.
The number of buttons multiplied by 9 is _____.
- 2 9 rows of strawberries by 10 columns.
The number of strawberries multiplied by 9 is _____.

Definition Review

The **Identity Property of Multiplication** states that the product of a number and 1 is equal to the number.

The **Zero Property of Multiplication** states that the product of any number and 0 is 0.

Match each expression with the property it illustrates.

- | | |
|-------------------------------|--|
| 3 $8 \times 0 = 0$ | Identity Property of Multiplication |
| 4 $21 \times 1 = 1 \times 21$ | Zero Property of Multiplication |
| 5 $15 \times 1 = 15$ | Commutative Property of Multiplication |

Application

Students work in pairs. Write each multiplication fact below on an index card. Write the problem on the front and the product on the back. Take turns using the cards to help memorize the multiplication facts.

$0 \times 9 = 0$	$4 \times 9 = 36$	$8 \times 9 = 72$
$1 \times 9 = 9$	$5 \times 9 = 45$	$9 \times 9 = 81$
$2 \times 9 = 18$	$6 \times 9 = 54$	$10 \times 9 = 90$
$3 \times 9 = 27$	$7 \times 9 = 63$	

4-11

Practice: Vocabulary and English Language Development**▶ Activate Prior Knowledge****Answer.**

- 1 Sophie's bedroom is 144 square feet. Draw all the possible dimensions for Sophie's bedroom. Then write each dimension.
-

▶ Definition Review

Prime factorization is a way of expressing a composite number as a product of its prime factors.

Match each number with its prime factorization.

- | | | |
|---|----|-------------------------|
| 2 | 82 | 2×47 |
| 3 | 94 | $2 \times 3^2 \times 5$ |
| 4 | 88 | 2×41 |
| 5 | 90 | $2^3 \times 11$ |

▶ Application

Students work in pairs or groups.

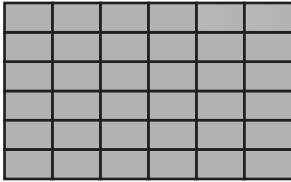
- Roll two six-sided number cubes.
- Use the numbers to form a two-digit number.
- Determine whether the number is prime or composite.
- If it's composite, write the prime factorization of the number.

4-11 Practice: Vocabulary and English Language Development

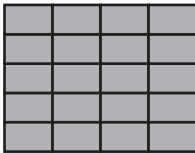
▶ Activate Prior Knowledge

Determine whether each figure is a square or a rectangle.

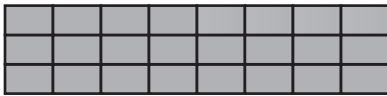
1 _____



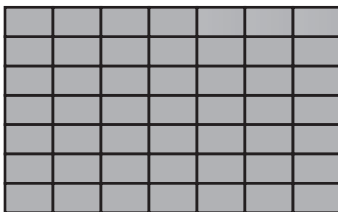
2 _____



3 _____



4 _____



▶ Definition Review

Identify the *base* and the *exponent* of each expression.

5 7^5 base: _____
exponent: _____

6 8^4 base: _____
exponent: _____

7 10^6 base: _____
exponent: _____

8 3^9 base: _____
exponent: _____

9 5^3 base: _____
exponent: _____

10 2^7 base: _____
exponent: _____

4-13

Practice: Vocabulary and English Language Development**▶ Activate Prior Knowledge**

Give 3 examples of when you might use estimation in your daily life.

1

2

3

▶ Definition Review

List all factors for each number.

4

32 _____

5

56 _____

6

45 _____

7

96 _____

8

12 _____

9

100 _____

10

63 _____**▶ Application**

Follow the directions for the activity.

- Present the following problems on the board or overhead.
 - 58×87
 - 62×16
 - 48×59
 - 81×73
 - 20×41
- Have students solve three of the problems using each of the three methods: the traditional method, the distributive property and expanded form method, and the partial products method.
- Allow students to use calculators to check their work if they are getting different answers for any single problem.

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Group like items in separate columns.

- 1 Group these objects by hot or cold.
Sun, Fire, Iceberg, Cola, Stove, Snow, Sleet
- 2 Group the numbers by even and odd numbers.
58, 15, 69, 137, 47, 155, 36, 200
- 3 Group the letters by vowels and consonants.
C, E, O, X, R, P, A

▶ Definition Review

Write the vocabulary word that completes the sentence.

- 4 A(n) _____ is the display of objects or symbols in rows of the same length and columns of the same length.
- 5 The answer or result of a division problem is the _____.
- 6 A number that is being divided is the _____.

Label each as the *dividend*, *divisor*, or *quotient*.

$$\frac{a}{b} = c$$

$$l \overline{) \overset{m}{n}}$$

$$x \div y = z$$

- | | | |
|--------------------|---------------------|---------------------|
| 7 a is the _____ | 10 l is the _____ | 13 x is the _____ |
| 8 b is the _____ | 11 m is the _____ | 14 y is the _____ |
| 9 c is the _____ | 12 n is the _____ | 15 z is the _____ |

▶ Application

Follow the directions for the activity.

- Students create classroom floor plans showing all possible arrays using 12 desks.
- Each array must have all rows the same length and all columns the same length, although the length of the rows may be different from the lengths of the columns.
- The arrangements do not have to be practical.
- Repeat the activity with 16, 18, and 24 desks.

Practice: Vocabulary and English Language Development

Activate Prior Knowledge

Find the number of coins in each amount.

- 1 How many pennies are in $50¢$? _____
- 2 How many dimes are in $\$3.00$? _____
- 3 How many dimes are in $\$7.40$? _____
- 4 How many dimes are in $90¢$? _____
- 5 How many pennies are in $\$2.37$? _____
- 6 How many dimes are in $\$2.10$? _____

Definition Review

Inverse operations are operations that undo each other.

A **factor** is a number that divides into a whole number evenly.

Match each with its inverse operation.

- | | |
|--------|-----|
| 7 + 7 | + 3 |
| 8 - 3 | × 2 |
| 9 × 6 | - 7 |
| 10 ÷ 2 | ÷ 6 |

Application

Follow the directions for the activity.

- Organize the class into groups of 4 or 5 students.
- Supply each group with 50–100 pennies. (May substitute pennies with marbles, tokens, or any other small item.)
- Using different amounts, have students experiment to see what numbers of pennies can be evenly divided by 10, 1, and 0.
- Have the groups share their findings with the class.
- Discuss what happened when they tried to divide an amount by 0.

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Complete the series following the pattern.

1 5, 10, 15, 20, _____, _____, _____, _____

2 2, 4, 6, 8, _____, _____, _____, _____

3 80, 85, 90, 95, _____, _____, _____, _____

4 28, 30, 32, 34, _____, _____, _____, _____

▶ Definition Review

A **quotient** is the answer or result of a division problem.

A **dividend** is a number that is being divided.

A **divisor** is the number by which the dividend is being divided.

Label each as *dividend*, *divisor*, or *quotient*.

$$\begin{array}{r} 7 \\ 5 \overline{)35} \end{array}$$

$$18/6 = 3$$

$$8 \div 2 = 4$$

5 7 is the _____.

8 18 is the _____.

11 8 is the _____.

6 5 is the _____.

9 3 is the _____.

12 2 is the _____.

7 35 is the _____.

10 6 is the _____.

13 4 is the _____.

▶ Application

Follow the directions for the activity.

- Students work individually or in small groups.
- Understand that all numbers with an even number in the ones place are divisible by 2.
- Test this rule. Can you find any number that contradicts this rule?
- Understand that all numbers with a 0 or 5 in the ones place are evenly divisible by 5.
- Test this rule. Can you find any exceptions?
- Discuss students' findings. What were some of the numbers they tested?

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Fill in the blanks to make both sides of the equation equal.

1 $7 \times 4 = \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad}$

2 $6 \times 3 = \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad}$

3 $5 \times 4 = \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad}$

4 $8 \times 3 = \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad}$

▶ Definition Review

A **multiple** of a number is the product of that number and any whole number.

The number that is left after one whole number is divided by another whole number is the **remainder**.

Circle the expressions that *will* have a remainder.

$56 \div 4$

$89 \div 4$

$17 \div 3$

$128 \div 4$

$75 \div 3$

$130 \div 3$

$26 \div 4$

$81 \div 3$

▶ Application

Follow the directions for the activity.

- Students work individually or in small groups.
- Understand that all numbers that can be divided by 2 twice are evenly divisible by 4.
- Students are to test this rule. Can you find any number that contradicts this rule?
- Understand that all numbers are divisible by 3 when the digits of that number are added together until it is a single number, and that single number is divisible by 3.
- Students are to test this rule. Can you find any exceptions for this rule?
- Discuss students' findings. What were some of the numbers they tested?

Practice: Vocabulary and English Language Development

Activate Prior Knowledge

Find each total price.

A teddy bear has a price tag that says \$7 and a ball has a price tag that says \$6.

- 1 3 balls _____
- 2 2 teddy bears _____
- 3 5 balls _____
- 4 8 teddy bears _____

Definition Review

A **multiple** of a number is the product of that number and any whole number.

The number that is left after one whole number is divided by another whole number is called the **remainder**.

List 5 multiples for each number.

- 5 2: _____
- 6 4: _____
- 7 6: _____
- 8 7: _____
- 9 20: _____

Application

Follow the directions for the activity.

- Students work individually or in small groups.
- Understand that all *even* numbers that are divisible by three are also divisible by 6.
- Students are to test this rule. Can you find any number that contradicts this rule?
- You can take the last digit of a number, multiply it by 2, and then subtract it from the rest of the number. If the new number is divisible by 7, then the original number is as well.
- Students are to test this rule. Can they find any exceptions for this rule?
- Discuss students' findings. What were some of the numbers they tested?

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Find each product.

1 $8 \times 9 =$ _____

2 $9 \times 6 =$ _____

3 $9 \times 9 =$ _____

4 $8 \times 8 =$ _____

▶ Definition Review

A **multiple** of a number is the product of that number and any whole number.

Adding, subtracting, multiplying, or dividing in your head without using manipulatives, fingers, or pencil and paper is using **mental math**.

Use mental math to solve.

5 $75 + 29 = 75 + 25 + 4 =$ _____

6 $423 + 256 = 400 + 200 + 20 + 50 + 3 + 6 =$ _____

7 $157 + 158 = 150 + 150 + 7 + 8 =$ _____

8 $125 \times 5 = 100 \times 5$ PLUS $25 \times 5 =$ _____

9 $83 \times 4 = 80 \times 4$ PLUS $3 \times 4 =$ _____

10 $27 \times 11 = 27 \times 10$ PLUS $27 \times 1 =$ _____

▶ Application

Follow the directions for the activity.

- Students work individually or in small groups.
- Understand that all numbers that can be divided by 2 three times are evenly divisible by 8.
- Students are to test this rule. Can they find any number that contradicts this rule?
- Understand that all numbers are divisible by 9 when the digits of that number are added together until it is a single number and that single number is divisible by 9.
- Students are to test this rule. Can they find any exceptions for this rule?
- Discuss students' findings. What were some of the numbers they tested?

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Find each product.

There are 12 doughnuts in a box. There are 11 apples in a box.

- 1 3 boxes of doughnuts = _____
- 2 6 boxes of apples = _____
- 3 7 boxes of doughnuts = _____
- 4 4 boxes of apples = _____

▶ Definition Review

The **quotient** is the answer or result of a division problem.

The **dividend** is the number that is being divided.

A **divisor** is the number by which the dividend is being divided.

Identify each *quotient*, *dividend*, and *divisor*.

$$12 \div 6 = 2$$

$$\begin{array}{r} 7 \\ 5 \overline{)35} \end{array}$$

$$\frac{27}{3} = 9$$

- 5 List each quotient _____
- 6 List each dividend _____
- 7 List each divisor _____

▶ Application

Follow the directions for the activity.

- Students work individually or in small groups.
- Understand that if a number is divisible by 11 by finding the sum of the first, third, fifth, etc. numbers and the sum of the second, fourth, sixth, etc. numbers. If the difference is divisible by 11, then the original number is as well.
- Students are to test this rule. Can they find any number that contradicts this rule?
- Understand that all numbers are divisible by 12 when the number is divisible by 3 and 4.
- Students are to test this rule. Can they find any exceptions for this rule?
- Discuss students' findings. What were some of the numbers they tested?

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Find each product.

1 $9 \times 2 = \underline{\hspace{2cm}}$

2 $3 \times 8 = \underline{\hspace{2cm}}$

3 $7 \times 4 = \underline{\hspace{2cm}}$

4 $5 \times 6 = \underline{\hspace{2cm}}$

▶ Definition Review

The **divisor** is the number by which the dividend is being divided.

The **quotient** is the answer or result of a division problem.

A **dividend** is a number that is being divided.

Write a division equation for each set of criteria.

5 61 is the quotient
488 is the dividend
8 is the divisor _____

6 1,413 is the dividend
157 is the quotient
9 is the divisor _____

7 11 is the divisor
1,023 is the dividend
93 is the quotient _____

8 248 is the quotient
12 is the divisor
2,976 is the dividend _____

▶ Application

Follow the directions for the activity.

- Students work individually or in small groups to practice their long division.
- Students are to come up with 5 numbers in each of the following ranges: 101 through 999; 1,001 through 9,999; 10,001 through 99,999; and 100,001 through 999,999.
- Students may use their own numbers or swap with a partner.
- Students practice their long division using these numbers as their dividends.
- Students are to randomly use the numbers 2 through 12 as their divisors.
- Students should check their work with a calculator.

6-1

Practice: Vocabulary and English Language Development

Activate Prior Knowledge

Write the opposite of each word.

- | | |
|---------------|---------------|
| 1 hot _____ | 4 happy _____ |
| 2 long _____ | 5 boy _____ |
| 3 small _____ | 6 go _____ |

Definition Review

An **even number** is a number that is divisible by 2.

An **odd number** is a number that is not evenly divisible by 2.

A **positive number** is a number that is greater than zero.

A **negative number** is a number that is less than zero.

Identify each number as *even* or *odd*.

- | | |
|------------|-------------|
| 7 27 _____ | 9 58 _____ |
| 8 94 _____ | 10 63 _____ |

Identify each number as *positive* or *negative*.

- | | |
|--------------|--------------|
| 11 31 _____ | 13 86 _____ |
| 12 -42 _____ | 14 -75 _____ |

Application

Follow the directions for the activity.

- Write each integer from -10 through 10 on separate pieces of paper.
- Put the pieces of paper in a bag, hat, or bowl.
- Ask for 5 student volunteers.
- Have each student pick a number from the bag.
- Instruct the volunteers to line up in front of the class according to their number from least to greatest.
- Ask the remaining students to verify whether or not the students in front of the class are in the correct order.
- Repeat the steps with each new group of students picking new numbers until each student has had a turn.
- For some variation, instruct some of the groups to line up from greatest to least.

6-2

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Find each sum.

1 $5 + 0 = \underline{\hspace{2cm}}$

3 $100 + 0 = \underline{\hspace{2cm}}$

2 $0 + 21 = \underline{\hspace{2cm}}$

4 $0 + 86 = \underline{\hspace{2cm}}$

▶ Definition Review

Match the equal expressions according to the Commutative Property of Addition.

5 $10 + 15$

$22 + 3$

6 $8 + 17$

$15 + 10$

7 $3 + 22$

$11 + 14$

8 $14 + 11$

$17 + 8$

▶ Application

Follow the directions for the activity.

- Use masking tape to make a number line from -15 to 15 on the floor.
- Write each integer from -8 through 8 on separate pieces of paper.
- Put the pieces of paper in a bag, hat, or bowl.
- Student 1 picks a number from the bag and find that number on the number line.
- Student 2 picks a number from the bag.
- Student 2 adds his or her number to the number of the other volunteer using the number line on the floor.
- What is the sum?
- Using the same numbers, Student 2 should find his or her number on the number line. Student 1 should find the sum using the number line.
- What is the sum? Is it the same?
- Repeat the steps with each new pair of students picking new numbers until each student has had a turn.

Practice: Vocabulary and English Language Development

Activate Prior Knowledge

Find each opposite.

1 $+7$ _____

4 -5 _____

2 -2 _____

5 -4 _____

3 $+6$ _____

6 $+9$ _____

Definition Review

The absolute value of a number is the distance between the number and zero on a number line.

List all integers whose absolute value equals the following.

7 2 _____

9 3 _____

8 10 _____

10 5 _____

Application

Follow the directions for the activity.

- Use masking tape to make a number line from -15 to 15 on the floor.
- Write each integer from -8 through 8 on separate pieces of paper.
- Put the pieces of paper in a bag, hat, or bowl.
- Student 1 picks a number from the bag and find that number on the number line.
- Student 2 picks a number from the bag.
- Student 2 should subtract his or her number from the number of the other volunteer using the number line on the floor.
- What is the difference?
- Using the same numbers, have Student 2 find the opposite of his or her number on the number line. Student 1 should find the sum using the number line.
- What is the sum? Is it the same?
- Repeat the steps with each new pair of students picking new numbers until each student has had a turn.

Practice: Vocabulary and English Language Development

Activate Prior Knowledge

List three examples of adding and subtracting integers in daily life.

1 _____

2 _____

3 _____

Definition Review

The **Associative Property of Addition** states that the grouping of addends does not change the sum.

Write **yes** or **no** to indicate whether the equation represents the **Associative Property of Addition**.

4 $(5 + 2) + 12 = 5 + (2 + 12)$ _____

5 $(3 + 7) + 9 = 3 + (7 + 9)$ _____

6 $(6 + 9) + 4 = 6 + (9 - 4)$ _____

7 $(2 + 20) + 15 = 2 + (20 + 15)$ _____

8 $3(8 + 1) = 3 + (8 + 1)$ _____

9 $10 + 8 + 7 = 8 + 7 + 10$ _____

10 $(1 + 4) + 6 = 1 + (4 + 6)$ _____

Application

Follow the directions for the activity.

- Work in pairs to find data that involves positive and/or negative integers of at least three digits. Data could involve depths below the sea, altitude, attendance at a stadium, money, distances, etc.
- Create your own problems based on the data, and solve them.
- Trade problems with another pair and solve the new problem.

Practice: Vocabulary and English Language Development

Activate Prior Knowledge

List all possible whole number factors of each number.

1 20 _____

2 14 _____

3 36 _____

Definition Review

The **absolute value** of a number is the distance between the number and zero on a number line.

Find the absolute value.

4 $|9| =$ _____

7 $|8| =$ _____

5 $|-1| =$ _____

8 $|-5| =$ _____

6 $|-4| =$ _____

9 $|3| =$ _____

Application

Follow the directions for the activity.

- Write 20 or more integer multiplication problems.
- One problem at a time, read the problems aloud.
- If the product is a positive number, your partner should put his/her thumbs up.
- If the product is zero, put your thumbs between up and down.
- If the product is negative, make a fist.
- Determine the product.

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Fill in the blank with *odd* or *even*.

- Jo rides the bus to school 2 times a day, 5 days a week. She rides the bus an _____ number of times in a week.
- Maria, Dawna, and Leah each drink 5 cups of water each day for 7 days. Together they drink an _____ number of cups of water.

▶ Definition Review

Find each word in the puzzle. Words can be horizontal, vertical, or diagonal and can be written backwards or forwards.

BASE EXPRESSION				EVEN MULTIPLY				EXPONENT ODD						
I	D	A	V	N	R	N	K	W	T	G	L	H	C	M
G	R	V	D	B	D	X	N	A	O	A	Z	E	P	V
E	A	C	L	I	M	S	T	D	O	M	O	D	U	P
D	Z	V	T	L	Q	N	D	N	E	L	H	N	M	V
M	C	J	K	H	E	E	V	O	F	O	W	V	N	C
B	U	A	Q	N	I	O	F	I	S	P	R	T	Z	L
L	N	R	O	S	X	O	L	S	Z	O	L	J	Q	O
W	E	P	C	Z	N	S	E	S	Q	A	Y	W	Y	I
P	X	F	X	K	U	S	R	E	X	H	K	B	I	L
E	Z	O	I	E	B	L	K	R	H	U	L	Z	F	P
S	K	Q	N	S	V	N	D	P	B	Q	R	Z	W	K
U	Q	H	F	N	F	E	I	X	A	Z	O	D	T	K
O	T	P	A	P	F	U	N	E	S	Q	H	B	Y	J
A	I	V	W	D	I	J	C	D	E	I	K	Z	Q	S
Q	C	B	J	M	U	L	T	I	P	L	Y	L	U	U

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Fill in the blank with *positive* or *negative*.

- The temperature rose 5° each hour for 2 hours. The change in temperature is _____.
- Grace deposited \$10 in her bank account each month for 6 months. The change in her bank balance is _____.
- On a game show, a contestant loses \$50 for each question answered incorrectly. James had won \$400. Then he answered 4 questions incorrectly. The change in the amount of money he won is _____.

▶ Definition Review

A **dividend** is a number that is being divided.

A **divisor** the number by which the dividend is being divided.

The **quotient** is the answer to a division problem.

Label the *dividend*, *divisor*, and *quotient* in each problem below.

1

$$\begin{array}{c} \text{_____} \\ | \\ 20 \div 5 = 4 \\ / \quad \backslash \\ \text{_____} \quad \text{_____} \end{array}$$

2

$$\begin{array}{c} \text{_____} \\ | \\ 3 \\ 6 \overline{)18} \\ / \quad \backslash \\ \text{_____} \quad \text{_____} \end{array}$$

3

$$\begin{array}{c} \text{_____} \\ | \\ 49 \div 9 = -5 \\ / \quad | \\ \text{_____} \quad \text{_____} \end{array}$$

4

$$\begin{array}{c} \text{_____} \\ | \\ 3 \\ 12 \overline{)36} \\ / \quad \backslash \\ \text{_____} \quad \text{_____} \end{array}$$

Practice: Vocabulary and English Language Development

▶ Activate Prior Knowledge

Fill in the blank with *odd* or *even*.

- 1 Leon deposited \$25 in his bank account each month for 1 year. The balance in his account at the end of the year is an _____ number.
- 2 Lola baked oatmeal cookies. She baked 15 cookie sheets full of cookies. Each cookie sheet held 9 cookies. Lola baked an _____ number of cookies in all.

▶ Definition Review

A **positive number** is a number greater than 0.

A **negative number** is a number less than 0.

Tell whether each expression evaluates to be a *positive number* or a *negative number*.

- 4 $(-66) \times 28 \div 14 \times (-5)$ _____
- 5 $(-4)11 \times (-100) \times 22 \div 104 \times (-55)$ _____
- 6 $456 \div (-2) \times 782 \times (-3,465) \times 300 \div (-25)$ _____

▶ Application

Complete the graphic organizer.

Odd and Even Numbers		Positive and Negative Numbers	
Definitions:		Definitions:	
Odd Number Examples	Even Number Examples	Positive Number Examples	Negative Number Examples