LESSON 101

• Dividing Two-Digit Numbers

Power Up

facts

Power Up 101

jump start

Count up by halves from 5 to 10.

Count up by fourths from 4 to 6.

Write a multiplication and division fact family using the numbers 8, 4, and 32.

Draw a $3\frac{1}{4}$-inch segment on your worksheet. Then make it $2\frac{1}{4}$ inches longer. What is the total length of the segment?

mental math

a. **Number Sense:** 98 − 39

b. **Number Sense:** 83 + 47

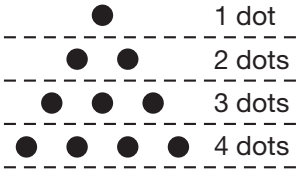
c. **Calendar:** How many months are in 7 years?

d. **Algebra:** This table shows costs for bookmarks at the school fair. How much do 5 bookmarks cost?

Bookmark	1	2	3	4	5
Cost	11¢	22¢	33¢	44¢	_____

problem solving

The number 10 is a triangular number because 10 objects can be arranged in the shape of a triangle. Notice how the number of objects in each row of the triangle increases:



1 + 2 + 3 + 4 = 10

Use this pattern to find the number of dots in a triangular shape with 8 rows of dots.

New Concept

Visit www.SaxonMath.com/Int3Activities for a calculator activity.

To sort a number of objects into equal groups, we can divide. In previous lessons, we learned how to divide using pictures, manipulatives, and the multiplication table. In this lesson, we will learn how to divide two-digit numbers using pencil and paper.

Think about how to answer the question in the following story:

> *Dan has a stack of 90 baseball cards. He wants to put the cards into a photo album. Each page of the album can hold 6 cards. How many pages can he fill?*

As Dan begins putting 6 cards on each page of the photo album, the number of cards in the stack becomes less and less.

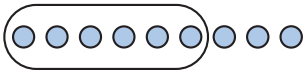
$$\begin{array}{rl} & 90 \\ - & 6 \text{ cards on first page} \\ \hline & 84 \\ - & 6 \text{ cards on second page} \\ \hline & 78 \\ - & 6 \text{ cards on third page} \\ \hline & 72 \end{array}$$

We could continue subtracting 6 cards until all the cards have been put into the album. A faster way to subtract the same number over and over is to divide. Here is how we can write the division:

$$6\overline{)90}$$

First, we look at the digit in the tens place. We think, "How many groups of 6 are there in 9?"

$$\begin{array}{r} 1 \\ 6\overline{)90} \end{array}$$



We see that we can make 1 group of 6. So we write a 1 above the 9.

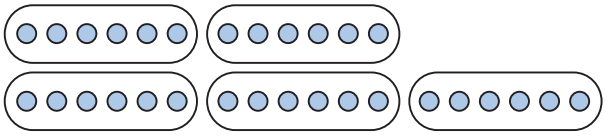
We also see that we have 3 circles left over. We show this by subtracting 6 from 9.

$$\begin{array}{r} 1 \\ 6\overline{)90} \\ -6 \\ \hline 3 \end{array}$$

Next, we bring down the digit in the ones place.

$$\begin{array}{r} 1 \\ 6\overline{)90} \\ -6\downarrow \\ \hline 30 \end{array}$$

We think, "How many groups of 6 are there in 30?"



$$\begin{array}{r} 15 \\ 6\overline{)90} \\ -6 \\ \hline 30 \end{array}$$

We see that we can make 5 groups of 6. So we write a 5 in the quotient.

We also see that there are no circles left over. We show this by subtracting 30 from 30.

$$\begin{array}{r} 15 \\ 6\overline{)90} \\ -6 \\ \hline 30 \\ -30 \\ \hline 0 \end{array}$$

The quotient is 15. This means that Dan can fill 15 pages. We can be sure we are correct by multiplying 6×15.

$$\begin{array}{r} {\scriptstyle 3} \\ 15 \text{ pages} \\ \times \quad 6 \text{ cards per page} \\ \hline 90 \text{ cards} \end{array}$$

Formulate Write another story problem for the division $6\overline{)90}$.

Example 1

Maria is putting a collection of 48 postcards into a photo album. Each page can hold 3 postcards. How many pages can she fill?

We can find the number of pages Maria can fill by dividing 48 by 3. We find that the number of pages is **16.** To make sure our answer is correct, we multiply:

$$\begin{array}{r} {\scriptstyle 1} \\ 16 \text{ pages} \\ \times \quad 3 \text{ postcards per page} \\ \hline 48 \text{ postcards} \end{array}$$

$$\begin{array}{r} 16 \\ 3\overline{)48} \\ -3\downarrow \\ \hline 18 \\ -18 \\ \hline 0 \end{array}$$

Example 2

Rob has a handful of nickels that total 80¢. How many nickels does Rob have?

To find the number of nickels, we divide 80 by 5. We find that Rob has **16 nickels.** We can multiply or quickly count by 5s to 80 to be sure that 16 nickels is 80¢.

$$\begin{array}{r} 16 \\ 5\overline{)80} \\ -5\downarrow \\ \hline 30 \\ -30 \\ \hline 0 \end{array}$$

Lesson Practice

a. To display his rock collection Juan glues 5 rocks on each card. How many cards does he need for 75 rocks?

b. Shelley collected 54 shells that she will store in plastic bags. If she puts 3 shells in each bag, how many bags of shells will she have?

c. If 76 horn players line up in 4 rows, how many players will be in each row?

Written Practice

Distributed and Integrated

1. *(90)* Hanna arranged 36 books in stacks of nine books each. How many stacks of books did Hanna make?

2. *(94, 99)* **Analyze** Lora wants to buy 3 folders for $2.39 each. She has $8. Estimate the total price of all three folders using compatible numbers. Does Lora have enough to pay for all three folders?

3. *(101)* $78 \div 6$

4. *(101)* $54 \div 3$

5. *(40)* Find the missing number: $24 - w = 3$

6. *(35, 79)* Use a pencil and a ruler to draw a segment 4 inches long. Measure the segment with a metric ruler. A 4-inch segment is about how many centimeters long?

7. *(2, 32)* **Conclude** Simon began counting by hundreds:

"100, 200, 300, 400, 500, . . ."

What will be the fifteenth number Simon says?

8. (86) **Formulate** Write two multiplication facts and two division facts using the numbers 8, 4, and 32.

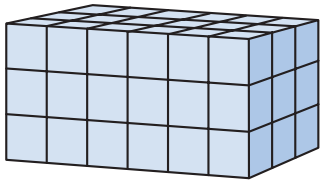
9. (35) What length is halfway between $1\frac{1}{4}$ inches and $1\frac{3}{4}$ inches?

10. (60, 97) A bike shop bought four *Midas Mountaineer* bicycles from the factory for $248 each. What was the total cost of the four bikes?

11. (35, 58) Draw a square with sides $\frac{1}{2}$ inch long. Then trace around the square with your pencil. How far is it around the square?

12. (90) Marlinda is putting photos in a family album. She places 36 photos equally on 6 pages. How many photos does she place on each page?

13. (72) How many small cubes were used to build this rectangular solid?



14. (39) From 1492 to 1992 was how many years?

15. (84, 100) Multiply:

a. 6×24 **b.** $5 \times \$2.30$

16. (Inv. 7) Half of a circle is also called a semicircle. Copy this semicircle and show its line of symmetry.

17. (86) Find each quotient.

a. $28 \div 7$ **b.** $56 \div 8$ **c.** $36 \div 9$

18. (96) Estimate the sum of \$5.17, \$6.98, and \$8.89.

19. (49) Write these fractions in order from least to greatest:

$$\frac{3}{4} \quad \frac{1}{2} \quad \frac{2}{3}$$

20. (86) **Multiple Choice** Which symbol goes in the box: $24 \square 2 = 12$?

A $+$ **B** $-$ **C** $\times$ **D** $\div$

LESSON 102

• Sorting

Power Up

facts

Power Up 102

jump start

Count up by 11s from 0 to 132.

Count up by 5s from 9 to 59.

Write these fractions in order from least to greatest:

$$\frac{1}{3} \quad \frac{1}{4} \quad \frac{4}{5} \quad \frac{1}{2}$$

A pair of shin guards costs $2.89. Marcy wants to buy 3 pairs. Write a number sentence to estimate the cost of the 3 pairs altogether.

mental math

a. **Measurement:** Which of these units would you most likely use to measure the amount of lemonade in a glass?

ounces pounds gallons feet

b. **Number Sense:** 40 + 35 + 7

c. **Number Sense:** 480 − 110

d. **Time:** It is afternoon. The first clock shows the time the spelling bee began. The second clock shows the time the bee ended. How many minutes did the spelling bee last?

problem solving

A *palindrome* is a number or word that is the same whether it is written forward or backward. The word “noon” is a palindrome. The number 11 is also a palindrome.

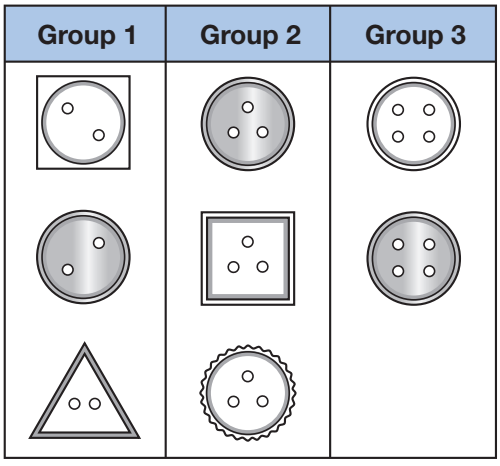
Predict the number of two-digit palindromes that are between the numbers 10 and 100. Then list the palindromes to check your prediction.

New Concept

People who have collections usually organize their collections in a logical way. They sort their collections by deciding what is similar and what is different.

Example 1

Sharon collects buttons. She has sorted the buttons into three groups. What rule does Sharon use to sort the buttons? In which group will she place the new button?



We look at the buttons in each group to see what is the same. We look at the buttons in different groups to see what is different. We see that the buttons in the same group have the same number of holes, and that the buttons in different groups have a different number of holes.

Sharon puts a button in Group 1 if it has 2 holes.

She puts a button in Group 2 if it has 3 holes.

She puts a button in Group 3 if it has 4 holes.

So, Sharon will place the **new button in Group 2.**

Example 2

Sort the following numbers into two groups: even numbers and odd numbers.

26, 73, 54, 49, 31, 80

All even numbers end with a ones digit that is even. We make two lists.

Even numbers: 26, 54, 80

Odd numbers: 73, 49, 31

List List five more numbers that belong in the even numbers group. List five more numbers that belong in the odd numbers group.

Lesson Practice

a. Describe the sorting rule for the numbers in these two groups.

Group A: 10, 60, 40, 20, 70

Group B: 12, 23, 74, 31, 58

b. Jill has a collection of action figures. Describe some ways she could sort the figures.

Written Practice

Distributed and Integrated

1. *(90)* Twenty-four children separated into three teams with an equal number of children on each team. How many children were on each team?

2. *(88, 102)* **Classify** Sort these numbers into two groups: even numbers and odd numbers.

75, 23, 98, 43, 82, 11, 90, 86

3. *(92)* $(275 + 375) - 200$

4. *(87)* **Analyze** The recipe called for one cup of milk. If the recipe is doubled, how many pints of milk should be used?

5. *(35, 47)* Use your pencil and a ruler to draw a segment $\frac{2}{4}$ of an inch long. What is another fraction name for $\frac{2}{4}$ of an inch?

6. (57, 86) **Model** Draw an array of 27 Xs with 3 Xs in each row. How many Xs are in each column of your array?

7. (92) Polly calculated that $3 \times (4 \times 5) = 60$. What is $(3 \times 4) \times 5$?

8. (11) Write 875,632 in expanded notation.

9. (33) What number is halfway between 300 and 600?

10. (91) **Explain** Kiondre and John have two large jars that are the same size. One jar is full of pennies. The other jar has 300 pennies and is about $\frac{1}{4}$ full. How can Kiondre and John estimate the number of pennies in the jar that is full? Estimate the number of pennies in the full jar.

11. (60, 97) Randall has 3 extra large boxes of crayons. Each box contains 108 crayons. How many crayons does Randall have in all?

12. (77) $3 \times 5 \times 8$

13. (102) Describe the sorting rule for the numbers in these two groups.

Group A: 0, 1, 4, 5, 8

Group B: 10, 32, 35, 57, 79

14. (39) From 1776 to 1826 was how many years?

15. (84, 100) Multiply:

a. 7×14 **b.** $3 \times \$2.50$

16. (93) Estimate the cost of 7 sleeping bags for \$78 each.

17. (86) Find each quotient.

a. $30 \div 6$ **b.** $40 \div 5$ **c.** $64 \div 8$

18. (101) $76 \div 2$ **19.** (101) $81 \div 3$

20. (96) Cheryl bought a gallon of milk for \$3.19 and two boxes of cereal for \$4.89 each. Estimate the total cost of the three items.

LESSON 103

• Ordering Numbers Through 9,999

Power Up

facts

Power Up 103

jump start

Count up by odd numbers from 1 to 25.
Count up by even numbers from 2 to 30.

It is 19 minutes after 8 in the morning. Draw hands on your clock to show the time. Write the time in digital form.

The temperature in the school library is 21°C. It is 14 degrees cooler on the playground. Mark your thermometer to show the temperature on the playground.

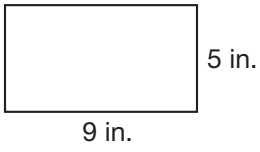
mental math

a. **Time:** The school lunch period lasts 35 minutes. Recess after lunch lasts 25 minutes. Altogether, how long are lunch and recess?

b. **Number Sense:** $3 \times 4 \times 4$

c. **Money:** \$3.30 − 99¢

d. **Measurement:** Lindsey is making a lid for her jewelry box. The lid is 9 inches long and 5 inches wide. What is the area of the lid?



problem solving

Sera made up a riddle to tell people her age. She says that she is 14 years younger than the number of months in 2 years. How old is Sera?

New Concept

We arrange numbers in order when we write or say the numbers from least to greatest (or from greatest to least). We use place value to help us order numbers.

Example 1

Write these numbers in order from least to greatest.

3,672 3,712 372

Writing the numbers in a column can help us order the numbers. We line up digits with the same place values.

Thousands	Hundreds	Tens	Ones
3	6	7	2
3	7	1	2
	3	7	2

We see that 372 is least. Both 3,672 and 3,712 have 3 in the thousands place; so we compare the digits in the hundreds place. Since 6 is less than 7, the order is:

372 3,672 3,712

Example 2

A mail carrier might arrange mail for a street using these two rules:

1. **Order mail with even-numbered addresses from least to greatest.**
2. **Order mail with odd-numbered addresses from greatest to least.**

Follow these two rules to arrange these "addresses" into an even numbered column and an odd-numbered column.

5327 5342 5353 5339 5352 5348

We start by sorting the addresses into an even-numbered group and an odd-numbered group.

Even: 5342, 5352, 5348

Odd: 5327, 5353, 5339

Then we order the even numbers in a column from least to greatest. Finally, we order the odd numbers in a column from greatest to least.

Even Addresses	Odd Addresses
5342	5353
5348	5339
5352	5327

Lesson Practice

a. The birth years in Roger's family are as follows:

1998 2002 1976 1974

Arrange these years from earliest to latest.

b. In 2000, the population of Blanco County was 8,418. The population of Castro County was 8,285. The population of Archer County was 8,854. List the names of the 3 counties in order from least population to greatest.

c. Robinson compared the price of a game at three different stores. Here are the prices:

$18.85 $19.25 $17.98

Arrange the prices in order from least to greatest.

Written Practice

Distributed and Integrated

1. *(90)* Burgess arranged twenty-four quarters into stacks with four quarters in each stack. How many stacks of quarters did Burgess form?

2. *(67)* Draw a polygon with six sides. What is the geometric name for the figure you drew?

3. *(101)* $75 \div 5$

4. *(101)* $88 \div 4$

5. *(Inv. 9)* Write an uppercase D and show its line of symmetry.

6. *(35, 79)* Compare an inch ruler with a metric ruler. A 1-foot-long ruler is about how many centimeters long?

7. *(88)* There are 25 textbooks on the shelf. Can the books be separated into two equal stacks?

8. *(86)* $84 \div 7$

9. *(86)* $56 \div 8$

10. *(103)* Arrange these numbers from least to greatest:

2,654 2,913 2,987 2,398

11. *(16, 32)* Use words to write the sum of $750 and $840.

12. *(93)* Nadia collected 294 soda cans for a class recycling project. Raul collected about 3 times as many cans as Nadia collected. Estimate the number of cans Raul collected.

13. *(52, 58)* Draw a rectangle that is one inch long and $\frac{1}{2}$ inch wide. Trace around the rectangle. How many inches is it around the rectangle?

14. *(9)* Find the missing numbers:

a. $6 + a = 24$

b. $6 + c = 24$

15. *(100)* Multiply: $6 \times \$4.20$

16. *(Inv. 8)* Draw a cube and a rectangular prism. How are the figures alike? How are they different?

17. *(86)* Find each quotient.

a. $27 \div 3$

b. $45¢ \div 5$

c. $\$36 \div 6$

18. *(28, 92)* $\$10.00 - (\$5.85 + 89¢)$

19. *(79)* Shaundra ran a 3-kilometer race. How many meters are in 3 kilometers?

20. *(102)* Describe the sorting rule for the numbers in these two groups:

Group A: 11, 25, 36, 48, 59

Group B: 125, 238, 374, 431, 578

LESSON 104

• Sorting Geometric Shapes

Power Up

facts

Power Up 104

jump start

Count up by square numbers from 1 to 144.
Count up by 10s from 9 to 99.

Chris bought a book of maps for $12.90 plus $0.80 sales tax. He paid with a $20 bill. How much change should he receive?

Write a multiplication and division fact family using the numbers 5, 9, and 45.

mental math

a. **Estimation:** Jerry will buy 4 bars of soap for 97¢ each. Estimate the total cost to the nearest dollar.

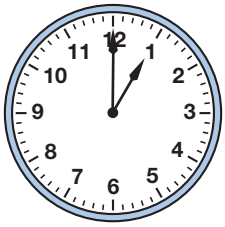
b. **Number Sense:** 900 − 450

c. **Number Sense:** 400 × 2

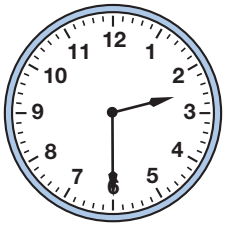
d. **Measurement:** How many quarts are in a gallon?

problem solving

The kickoff to start the football game was at 1:00 p.m. During halftime, Tyrone looked at his watch and saw that it was 2:30 p.m.



Start of game



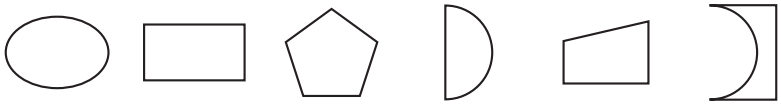
Halftime

What is a reasonable prediction for the time the football game will end? Explain how you made your prediction.

New Concept

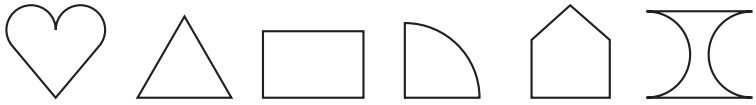
We sort or **classify** shapes by how they are alike or different. Look at the shapes below.

Discuss How are they alike? How are they different? How could we sort them into two different groups?



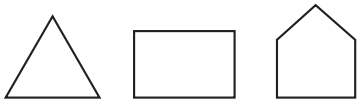
Example 1

Sort these figures into polygons and figures that are not polygons. Then describe your sorting rule.



We separate the figures into two groups.

Polygons



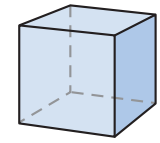
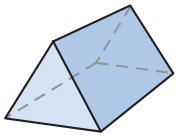
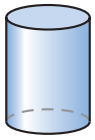
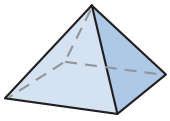
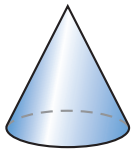
Not Polygons

Polygons are flat, closed shapes with straight sides. Shapes with curved sides are not polygons.

Example 2

These three-dimensional figures are sorted into two groups. Describe the sorting rule.

Solids

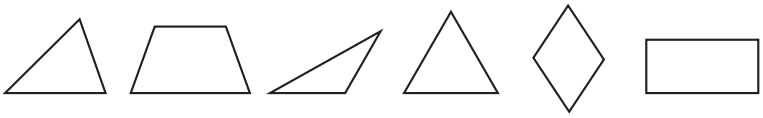
Group 1	Group 2
	
	
	

The solids in Group 1 have straight edges, and every face is a polygon. The solids in Group 2 have at least one curved surface.

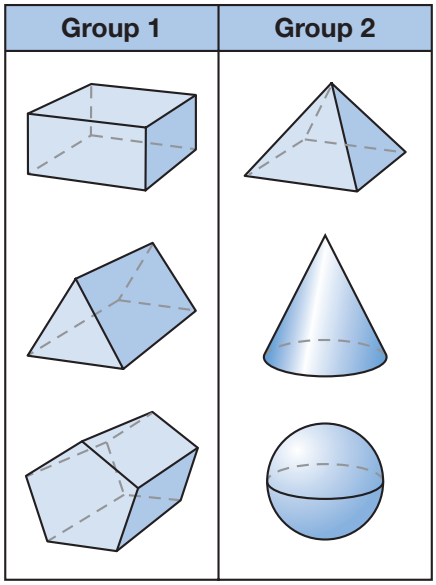
Classify What is another rule we could use to sort these figures?

Lesson Practice

a. Sort these polygons into two groups: triangles and quadrilaterals.



b. Describe how the solids in Group 1 are alike. Describe how the solids in Group 1 are different than the solids in Group 2.



Written Practice

Distributed and Integrated

1. *(90)* In Millie's backyard, 48 stalks of corn grow in 6 equal rows with an equal number of stalks in each row. How many stalks grow in each row?

2. *(39)* Last year Kevin was 114 cm tall. This year he is 121 cm tall. How many centimeters did Kevin grow in a year?

3. *(57)* Draw an array of 20 dots with 4 dots in each column. How many dots are in each row?

4. *(30)* Estimate each answer by rounding each number to the nearest hundred dollars before you add or subtract.
   a. \$396 + \$419 **b.** \$587 − \$259

5. *(40)* Find the missing number: $18 - m = 3$

6. *(80)* How many grams equal one kilogram?

7. (2, 32) **Conclude** Simon began counting by thousands:

1,000, 2,000, 3,000, 4,000, …

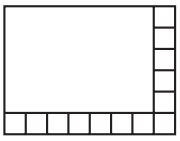
What will be the fifteenth number Simon says? Use words to write the answer.

8. (87) **Multiple Choice** Which of the following equals one quart?

A 3 cups **B** 4 pints **C** 2 pints **D** 2 cups

9. (86) If 56 ÷ 7 = 8, then what does 56 ÷ 8 equal?

10. (63) This rectangle is partly covered with small squares. Altogether, how many small squares would cover the rectangle?



11. (50) **Justify** Roderick has a bag of 10 marbles. There are 5 blue marbles. The rest of the marbles are red. Is drawing a red marble less likely, equally likely, or more likely than drawing a blue marble? How do you know?

12. (97) A year is 365 days. Find the number of days in 4 years by multiplying 365 by 4. Then add one day for a leap year. Show your work.

13. (92) (24 + 80) − 44

14. (85) **Model** Angela planted 24 flowers in 4 rows. How many flowers were in each row? Draw a picture to represent the problem.

15. (100) Multiply:

a. 5 × $0.24 **b.** 4 × $0.24

16. (78) There are 70 crackers in each package. Each box contains 4 packages. How many crackers are in one box?

17. (86) Find each quotient.

a. 36¢ ÷ 4 **b.** 36 ÷ 6 **c.** 35 ÷ 7

18. (32) Write 6,877 in expanded form.

19. *(94)* Use compatible numbers to estimate the total price of 8 sandwiches for $2.56 each.

20. *(97)* Multiply: 721×2

Real-World Connection

Li entered a reading contest every year for four years. He read one book each month for the first year. If he read the same number of books each year, how many books did he read in four years?

LESSON 105

• Diagrams for Sorting

Power Up

facts

Power Up 105

jump start

Count up by 3s from 0 to 45 and then back down to 0.
Count up by 9s from 0 to 108 and then back down to 0.

Write these years in order from earliest to latest:

1977 1899 1957 1999

Draw a rectangular prism on your worksheet. How many vertices does a rectangular prism have?

mental math

a. **Fact Family:** Find the missing number in this fact family:

$5 \times \square = 20$ $20 \div \square = 5$

$\square \times 5 = 20$ $20 \div 5 = \square$

b. **Number Sense:** 687 − 200

c. **Measurement:** How many yards are equal to 9 feet?

d. **Number Sense:** Which point below represents the number $8\frac{1}{2}$?

problem solving

Twenty-three students are taking a field trip to the zoo. Each car can hold 4 students. How many cars will be needed for all 23 students? Will all the cars carry the same number of students? Explain your answer.

New Concept

We can use circles to help us sort collections of things.

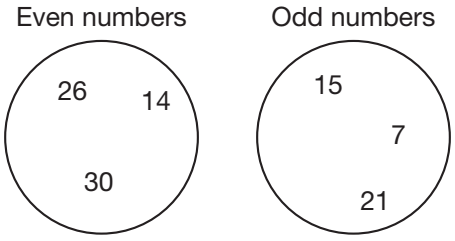
Visit www.SaxonMath.com/Int3Activities for an online activity.

Example 1

Draw two circles. Label one circle "Even numbers" and the other circle "Odd numbers." Then write these numbers in the correct circles.

15, 26, 7, 14, 30, 21

We draw and label the circles and write the numbers.

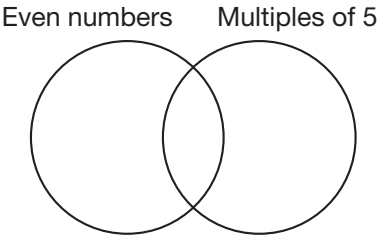


A **Venn diagram** is a special type of sorting circle. The circles in a Venn diagram overlap. The overlap part shows what the groups have in common.

Example 2

Copy the Venn diagram and write the following numbers in the correct parts of the circles.

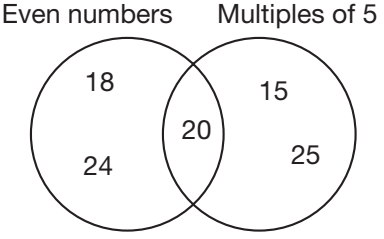
15, 18, 20, 24, 25



First, we sort the numbers into two groups.

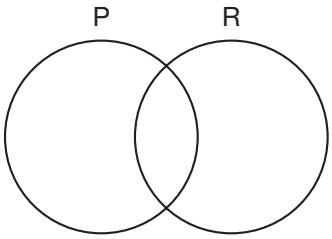
Even Numbers	18, **20,** 24
Multiples of 5	15, **20,** 25

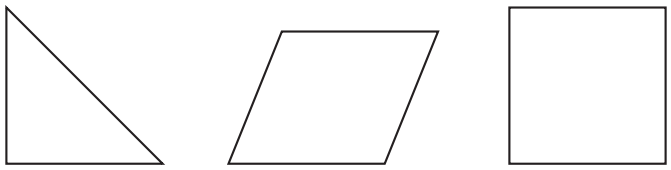
Notice that 20 belongs in both groups. On the Venn diagram, we write 20 in the space where the two circles overlap. Then we place the other numbers in the correct circle.



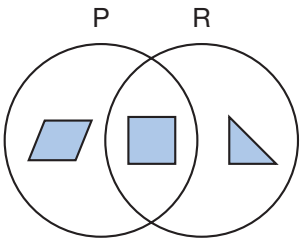
Example 3

Copy the Venn diagram and then draw the following polygons in the correct parts of the circle. One circle is labeled "P" for parallel sides and one circle is labeled "R" for right angle.





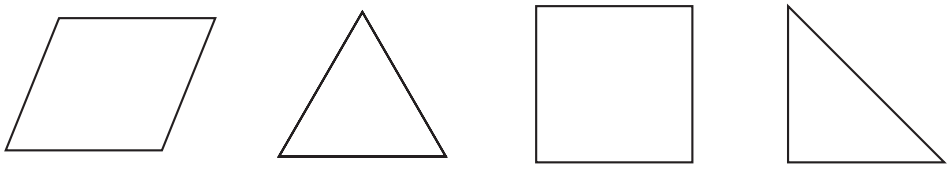
The triangle has a right angle but no parallel sides. The parallelogram has parallel sides but no right angles. Since the square has parallel sides and right angles, it is in both circles.



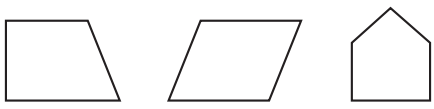
Analyze Where would you place an isosceles triangle in this diagram?

Lesson Practice

a. Draw two circles that do not overlap. Label one circle "Quadrilaterals" and the other circle "Triangles." Then draw these shapes in the correct circles.



b. Draw a Venn diagram. Label one circle "Q" for quadrilaterals and the other circle "R" for shapes that have a right angle. Then draw these shapes in the correct parts of the circles.



Written Practice

Distributed and Integrated

1. *(100)* If each foot of molding costs 75¢, then what is the cost for each yard of molding?

2. *(88)* Forty-one students stood in two lines as equally as possible. How many students were in each line?

3. *(Inv. 9)* Write an uppercase H. Show its two lines of symmetry.

4. *(80, 98)* The mass of one large paper clip is about one gram. The mass of two dozen large paper clips is about how many grams?

5. *(15)* Round \$395 to the nearest hundred dollars.

6. *(82)* What is the geometric name for the shape of the object at right?

7. *(96)* Estimate the total price of a salad for \$5.62, soup for \$3.18, and juice for \$1.20.

8. *(32)* In what place is the 7 in each of these numbers?

a. 3,674 **b.** 367

9. *(33)* What number is halfway between 500 and 1000?

10. *(99)* Patrick wants to buy 4 yo-yos. Each yo-yo costs \$3.23. He estimates that the total price will be \$12.00. How does Patrick's estimate compare to the actual price? How do you know?

11. *(58, 79)* Draw a square with sides 2 cm long. Trace around the square. All the way around the square is how many centimeters?

12. *(54, 78)* Change this addition to a multiplication and find the total:

60 sec + 60 sec + 60 sec + 60 sec + 60 sec

13. *(86)* Find the missing factor: $6 \times n = 48$

14. *(97)* 365×3

15. *(91)* 400×8

16. *(89)* $81 \div 9$

17. *(101)* $92 \div 2$

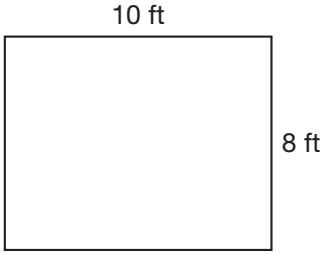
18. Find each quotient.
(86)

a. 81 ÷ 9 **b.** 32 ÷ 4 **c.** 42 ÷ 7

19. Find the next three numbers of this sequence:
(2, 91)

5, 10, 20, 40, _____, _____, _____, …

20. A rectangular floor like the rectangle shown at right will be covered with square tiles that are 1 foot on each side. How many tiles will cover the floor?
(63)



Real-World Connection

One python is 27 feet long and another is 22 feet long. Is the total length of the two pythons longer than an anaconda that is 44 feet long? What is the total length of all three snakes? Write number sentences and use a comparison symbol to show your answers.

LESSON 106

• Estimating Area, Part 1

Power Up

facts

Power Up 106

jump start

Count up by 4s from 0 to 48 and then back down to 0. Count up by 8s from 0 to 96 and then back down to 0.

A board game costs $13.50. A small jigsaw puzzle costs $6.15. Write a number sentence to estimate how much they cost altogether.

Draw a $3\frac{3}{4}$-inch segment on your worksheet. Then make it $\frac{3}{4}$ inch longer. What is the total length of the segment?

mental math

a. **Number Sense:** 25×3

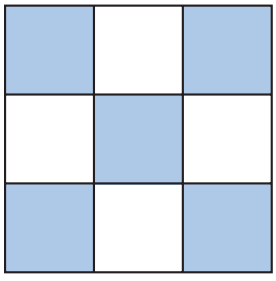
b. **Money:** $13.40 − $1.99

c. **Measurement:** Patrick jogged 700 meters and then walked 190 meters. How many meters did Patrick jog and walk altogether?

d. **Estimation:** Use compatible numbers to estimate 47×4.

problem solving

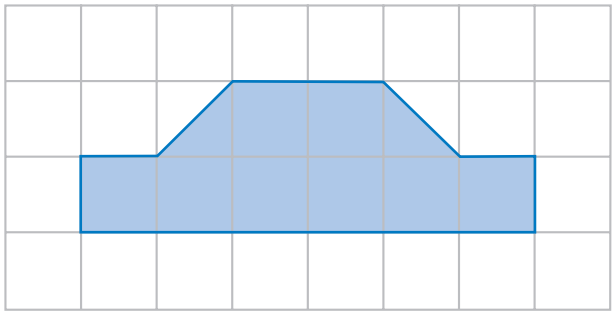
This checkerboard pattern has 9 squares altogether. Five of the squares are dark and 4 of the squares are light.



Find the number of dark squares and light squares in a checkerboard pattern that has 16 squares altogether.

New Concept

A grid of squares can help us estimate the area of a shape. Below we show a figure on a centimeter grid. Each square on the grid is one square centimeter. We can count squares to find the area of the figure.

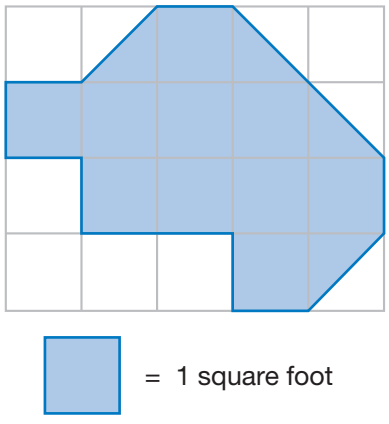


We count 8 whole squares and 2 half squares in the figure. The 2 half squares together equal 1 whole square. So the area of the figure is 9 square centimeters.

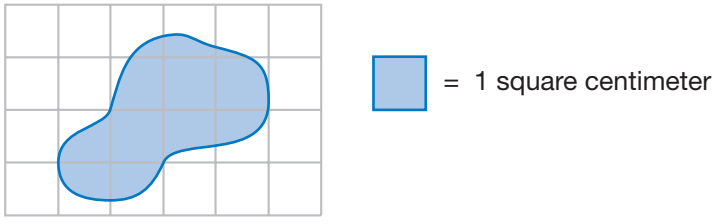
Example 1

In this diagram each square equals one square foot. What is the area of the figure on the grid?

We count 10 whole squares and 4 half squares. The 4 half squares together equal 2 whole squares. So we add 10 whole squares and 2 whole squares and get 12 whole squares. The area is **12 square feet.**



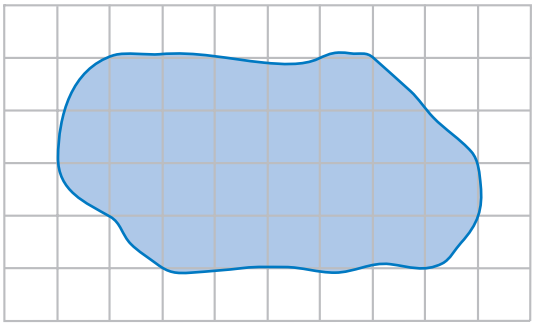
Shapes do not always have straight edges or fit exactly onto grids. Monica drew this shape on a piece of centimeter grid paper:



If a square is fully or mostly shaded, we count it as one whole square. If a square is about half shaded, we count it as a half square. If a square is only barely shaded, we do not count it. We see 5 squares that are whole or almost whole and 4 squares that are about half shaded. The area of Monica's shape is about 7 square centimeters.

Example 2

In this diagram, each square equals one square meter. Estimate the area of the surface of the pond.

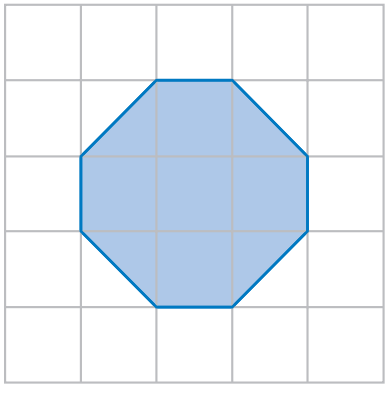


= 1 square meter

To estimate the area, we count each nearly whole square in the figure as a whole square. We count each nearly half square as a half square. We do not count a square if only a small part is in the figure. Altogether, we count 24 whole squares and 6 half squares. The 6 half squares together equal 3 whole squares. The area of the pond is about **27 square meters.**

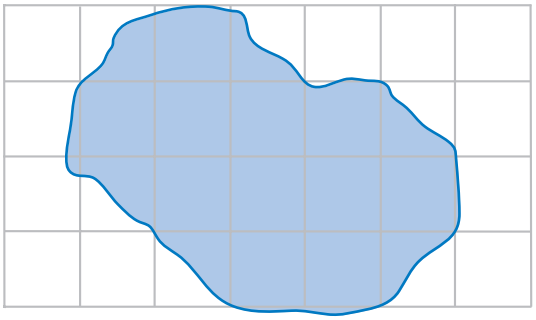
Lesson Practice

a. Find the area of this figure:



= 1 square inch

b. Estimate the area of this figure:



= 1 square yard

Written Practice

Distributed and Integrated

1. (34) Robert carried the football and gained 11 yards, making a first down. How many feet is 11 yards?

2. (101) $72 \div 3$

3. (97) 575×3

4. (2) Find the next three numbers in this sequence.

… 600, 700, 800, _____, _____, _____, …

5. (76) **Connect** Write a multiplication fact that shows the number of inches in 8 feet.

6. (35) What length is halfway between $1\frac{1}{2}$ inches and 2 inches?

7. (93) Estimate the product of 487 and 3.

8. (16, 30) **a.** Estimate the sum of $608 and $487.

b. Calculate the sum of $608 and $487.

9. (55) If $11 \times 12 = 132$, then what does 12×11 equal?

10. (32) Which digit is in the thousands place in each of these numbers?

a. 23,478

b. 375,129

11. (75) **Represent** Draw a picture of a cube. A cube has how many vertices?

12. (11) A common year is 365 days. Write 365 in expanded form.

13. (58, 63) Draw a rectangle that is 2 cm long and 1 cm wide.

a. What is the perimeter of the rectangle?

b. What is the area of the rectangle?

14. (100) Multiply:

a. $7 \times \$1.45$ **b.** $4 \times \$0.45$

15. (86) Find each quotient.

a. $16 \div 2$ **b.** $36 \div 6$ **c.** $24 \div 3$

16. (97) 173×7

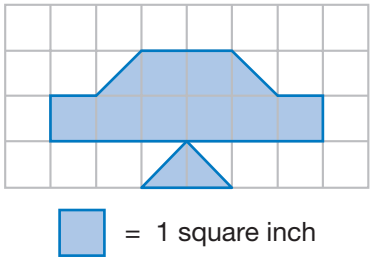
17. (LRF) 322×8

18. (91) 500×7

19. (2) Find the next three numbers in this sequence:

200, 225, 250, _____, _____, _____, . . .

20. (106) **Analyze** Find the area of the figure at right.



Early Finishers
Real-World Connection

Leon asked his brother to find out how many dollars he has in his pocket by solving a riddle. The first clue is that he has less than $30. The other clues are that the sum of the digits is four, and half of the total amount is an odd number of dollars. How much money does Leon have in his pocket?

LESSON 107

• Drawing Enlargements

Power Up

facts

Power Up 107

jump start

Count up by 6s from 0 to 72 and then back down to 0.

Count up by 12s from 0 to 144 and then back down to 0.

It is evening. The train will arrive at 18 minutes before 7. Draw hands on your clock to show the time the train will arrive. Write this time in digital form.

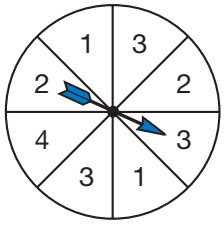
The ice at the hockey rink is 22°F. The temperature in the arena is 33 degrees warmer. Mark your thermometer to show the temperature in the arena.

mental math

a. **Number Sense:** 510 + 210

b. **Number Sense:** 80 × 9

c. **Probability:** Gracie spins the spinner one time. On which number is the spinner most likely to land?



d. **Fractions:** What fraction of the spinner is labeled with the number 2?

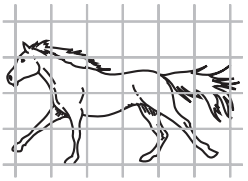
problem solving

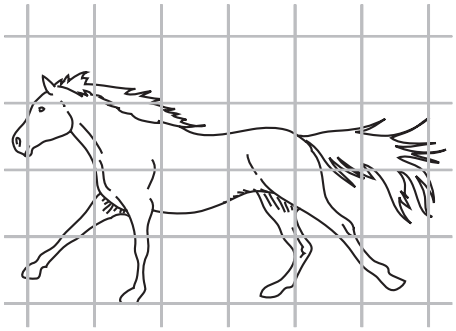
Jessica had a long piece of ribbon. She cut an 8-inch length from one end of the ribbon. Then she cut the rest of the ribbon into four equal lengths of 12 inches each. How long was the original piece of ribbon?

New Concept

Overhead projectors, movie projectors, and photograph laboratories produce a larger image. The larger image is called an *enlargement.* In this activity you will draw an enlargement using two different-sized grids.

Brenda placed a small-grid transparency over the picture of a horse. Then she copied on a large grid what she saw on the small grid. She copied one square at a time until she was done.





Activity

Drawing Enlargements

Materials: **Lesson Activity 23,** small-grid transparency, a picture you wish to copy

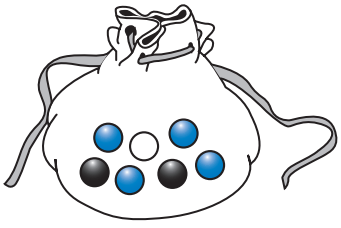
Tape or clip the small-grid transparency over a picture. Then copy the picture one square at a time onto **Lesson Activity 23.**

Estimate Each square on **Lesson Activity 23** has an area of one square inch. About how many square inches is the area of your enlargement?

Written Practice

Distributed and Integrated

1. (45) Bea drew a marble from the bag without looking. Is she more likely to draw a blue marble or a black marble?



2. (103) The table shows the years in which Matt and his siblings were born. Write the names in order from oldest to youngest.

Name	Birth Year
Jessica	1993
Matt	1980
Samantha	2000
Paul	1997

3. (58) Draw a square with sides $1\frac{1}{2}$ inches long. What is the perimeter of the square?

4. (6, 56) **Multiple Choice** Which of the following does *not* equal 15?

A $15 + 0$ **B** $15 - 0$ **C** 15×0 **D** 15×1

5. (101) $90 \div 5$

6. (97) 111×3

7. (101) Divide 39 by 3.

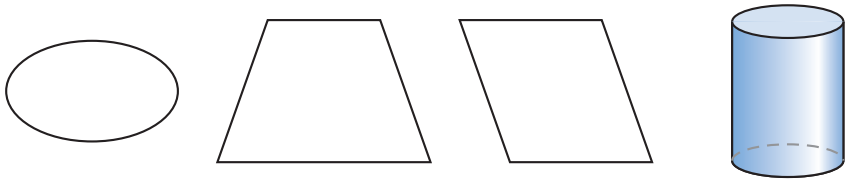
8. (90) Gina puts 10 pennies in each pile. How many piles can Gina make with 100 pennies?

9. (32) In what place is the 5 in each of these numbers?

a. 524 **b.** 36,452

10. (63) Draw a rectangle 3 cm long and 2 cm wide. What is its area?

11. (103) **Classify** Sort these figures into polygons and figures that are not polygons.



12. (96) Round $5.58 to the nearest dollar.

13. (100) 7.50×5

14. (100) 1.20×3

15. (86) Find each quotient.

a. 56 ÷ 7 **b.** 63 ÷ 7 **c.** 24 ÷ 4

16. (105) **Classify** Draw two circles that do not overlap. Label one circle "Even Numbers" and the other circle "Odd Numbers." Then write each of these numbers in the correct circle.

34 88 17 61 81 22 98 23

17. (92) (50 + 50) − 25

18. (92) (99 + 1) × 4

19. (65, 69) **Represent** Draw an obtuse triangle. How many of its angles are obtuse? How many are acute?

20. (89) Betty ran 3 miles in 21 minutes. About how long did it take her to run one mile?

Early Finishers

Real-World Connection

Curt, Bob, and Lee each made a pile of snowballs. Together they made 15 snowballs. Bob made two more than Lee. Lee made two more than Curt. How many snowballs did each boy make? Draw a picture showing what their piles of snowballs would look like.

LESSON 108

• Estimating Area, Part 2

Power Up

facts

Power Up 108

jump start

Count up by 5s from 0 to 60 and then back down to 0. Count up by 10s from 0 to 120 and then back down to 0.

Write a multiplication and division fact family using the numbers 9, 8, and 72.

Draw an equilateral triangle. Then draw a line of symmetry.

mental math

a. **Number Sense:** 5,000 + 900 + 70 + 5

b. **Number Sense:** 300 − 199

c. **Number Sense:** Each tent uses 6 stakes to hold it to the ground. How many stakes are needed for 4 tents?

d. **Measurement:** Dana's backyard deck is 8 yards long and 4 yards wide. What is the area of the deck?

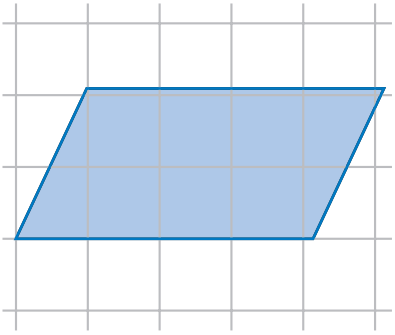
problem solving

Julian opened a package of printer paper. He put 300 sheets into the black-and-white printer. He put half as many sheets into the color printer. Julian placed the remaining 50 sheets in his desk. How many sheets were in the package of printer paper that Julian opened?

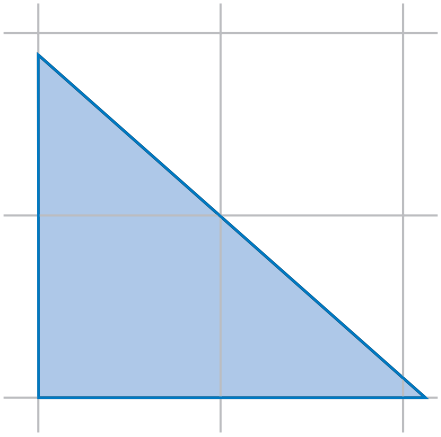
New Concept

We may use transparency grids to help estimate the area of figures.

Justin placed a centimeter grid on a parallelogram and estimated its area. Kylie placed an inch grid on a triangle and estimated its area.



Justin estimated that the area was 8 square centimeters.



Kylie estimated that the area was 2 square inches.

Analyze Lucy estimated the area of a rectangle using a centimeter grid and again using an inch grid. Was the number of square units greater using the centimeter grid or the inch grid?

Activity

Estimating Area with a Grid

Materials: **Lesson Activity 33,** inch-grid transparency, centimeter-grid transparency

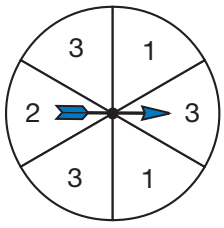
Use transparency grids to help you estimate the area of each figure on **Lesson Activity 33.**

Extension Use transparency grids to find the areas of other shapes in your books or in magazines.

Written Practice

Distributed and Integrated

1. On what number is the spinner least likely to stop?
(50)



2. *(30)* The third grade at Larson elementary collected aluminum cans for a recycling drive. Room A collected 312 cans, Room B collected 624 cans, and Room C collected 511 cans. Estimate the total number of cans collected by the third grade.

3. *(99)* **Analyze** Is the estimate you made for problem **2** greater than or less than the actual total number of cans?

4. *(52, Inv. 9)* Use a pencil and a ruler to draw a rectangle that is $1\frac{1}{2}$ inches long and $1\frac{1}{4}$ inches wide. Then show its two lines of symmetry.

5. *(103)* Joel compared the prices of teddy bears at three different stores.

$18.95 $12.95 $17.95

Arrange the prices in order from least to greatest.

6. *(21)* A roll of pennies is 50 pennies. A roll of dimes is 50 dimes. A roll of dimes is equal in value to how many rolls of pennies?

7. *(84, 87)* A pint is 16 ounces. How many ounces is two quarts?

8. *(102)* **Explain** Describe the sorting rule for the fractions in these two groups.

Group A: $\frac{2}{2}, \frac{3}{3}, \frac{4}{4}, \frac{5}{5}, \frac{6}{6}$

Group B: $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \frac{1}{6}$

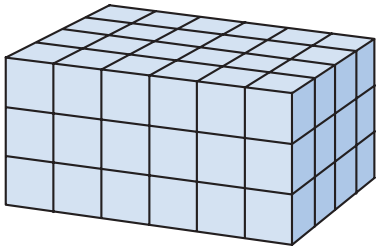
9. *(92)* $(10 + 15) \div 5$

10. *(101)* $68 \div 2$

11. *(103)* Write these three numbers in order from least to greatest

1,376 2,147 1,859

12. *(73)* How many small cubes were used to build this rectangular prism?



13. 700×3 *(91)*

14. 36×4 *(84)*

15. $\$0.75 \times 6$ *(100)*

16. Cesar counted 153 raisins in a large box. Estimate the number of raisins that would be in 5 large boxes. *(93)*

17. $\$4.50 \times 3$ *(100)*

18. 451×2 *(97)*

19. $61 - m = 24$ *(40)*

20. **Represent** Draw a triangular prism. How many vertices does it have? *(75)*

Early Finishers

Real-World Connection

Pedro walks 13 blocks every morning to get to school. When he gets to the seventh block, he meets his friend Zack and they walk the rest of the way together. When Pedro and Zack get to the eleventh block, they meet Alyssa and all three walk to school together. How many blocks do Pedro and Zack walk together? Does Pedro walk more blocks alone or with his friends? You may use manipulatives or draw a picture to help you find the answer.

LESSON 109

• Points on a Grid

Power Up

facts

Power Up 109

jump start

Count up by 7s from 0 to 84 and then back down to 0.

Count up by 11s from 0 to 132 and then back down to 0.

A fishing rod costs $11.35. Write a number sentence to estimate the cost of 4 fishing rods to the nearest dollar.

Use your ruler to draw a square with a perimeter of 8 inches.

mental math

a. **Number Sense:** 25 × 5

b. **Number Sense:** 87 + 37

c. **Number Sense:** 50 ÷ 2

d. **Patterns:** Find the missing number in this pattern:

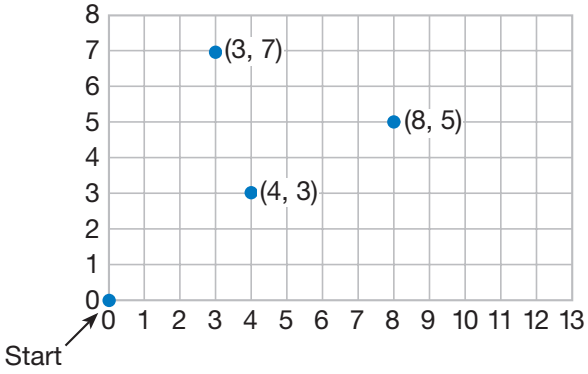
248	252	256	___	264	268

problem solving

Emma made a pattern with three different shapes. What two shapes are missing in the pattern?

New Concept

If we number the lines on a grid, we can name any point on the grid with two numbers.

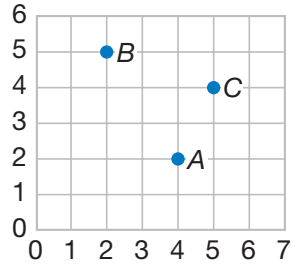


The two numbers in parentheses are called **coordinates.** Coordinates are like the address of a point. They tell us how to get to a point starting from (0, 0). The first number tells us how many spaces we move to the right. The second number tells us how many spaces we move up.

For example, to get to point (4, 3), we move sideways from (0, 0) to the 4. Then we move up 3 spaces. Starting from (0, 0), practice going to the right and then up to (3, 7) and to (8, 5).

Example 1

Write the coordinates of points *A, B,* and *C* on this grid.



To find the first number of the coordinates, we place our finger on the point and move it straight down until we get to the number on the bottom of the grid. To find the second number of the coordinates, we place our finger on the point again and move it to the left until we get to the number on the side. We write the coordinates in parentheses.

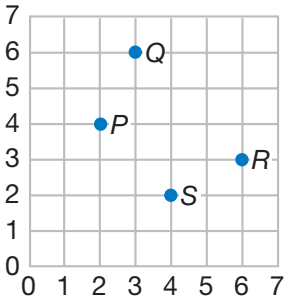
A **(4, 2)** ***B*** **(2, 5)** ***C*** **(5, 4)**

Example 2

Name the letter of the point that has these coordinates:

a. (6, 3)

b. (2, 4)



To find (6, 3) we start at (0, 0) and go sideways to 6. Then we go up 3 spaces. We see point ***R.***

To find (2, 4) we go sideways to 2. Then we go up 4 spaces. The letter of the point is ***P.***

Lesson Practice

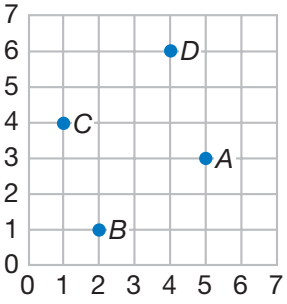
Write the coordinates of the following points:

a. Point *A*

b. Point *B*

c. Point *C*

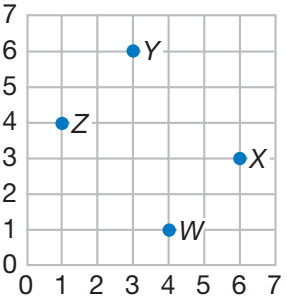
d. Point *D*



Name the letter of the point that has these coordinates.

e. (6, 3)

f. (1, 4)



Written Practice

Distributed and Integrated

1. *(40)* Vincent is reading a book that is 286 pages long. He has 72 pages left to read. How many pages has Vincent already read?

2. *(84)* Ginger ran to the fence and back twice. If it is 75 yards to the fence, how far did Ginger run?

3. *(Inv. 4)* The distance from Olga's house to school on a map is 2 inches. If each inch on the map represents a distance of 4 miles, how many miles is Olga's house from school?

4. $8 \times 5 \times 7$
(77, 78)

5. **Multiple Choice** Which of the following is the best choice to estimate $579 - 329$?
(30)

A $600 - 300$ **B** $500 - 300$ **C** $600 - 400$ **D** $500 - 400$

6. Is \$8.65 closer to \$8 or \$9?
(96)

7. **Analyze** A pint of water weighs about one pound.
(87, 98)

a. About how many pounds does a gallon of water weigh?

b. About how many pounds does the water in a filled five-gallon aquarium weigh?

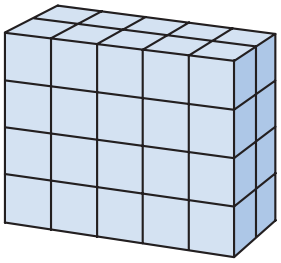
8. Use compatible numbers to mentally find the sum of 50, 90, 150, 20, and 10. List the pairs of compatible numbers you added first.
(92)

9. Use a comparison symbol in place of the circle to show each comparison.
(17)

a. $123 \bigcirc 132$ **b.** $5 + 7 \bigcirc 7 + 5$

10. How many centimeters are in a meter?
(79)

11. How many small cubes were used to build this rectangular solid?
(73)



12. **Formulate** Change this addition to a multiplication and find the total.
(54, 76)

12 in. + 12 in. + 12 in. + 12 in. + 12 in. + 12 in.

13. Write these numbers in order from least to greatest:
(103)

1,152 1,215 1,125

14. $78 \div 3$
(101)

15. 420×4
(97)

16. Find each quotient.
(86)

a. $27 \div 3$ **b.** $28 \div 7$ **c.** $42 \div 6$

17. 94 × 2 *(84)*

18. 52 ÷ 4 *(101)*

19. *(100)* Multiply:

a. 4 × $2.50

b. 8 × $2.50

20. *(102)* **Explain** Describe the sorting rule for the numbers in these two groups.

Group A: 0, 2, 4, 6, 8

Group B: 1, 3, 5, 7, 9

Real-World Connection

Sonya played on a soccer team that practiced every day from the first of June through the end of October. How many days did Sonya's team practice in all?

LESSON 110

• Dot-to-Dot Design

Power Up

facts

Power Up 110

jump start

Count up by 25s from 0 to 250.
Count up by 100s from 0 to 2,000.

Write a multiplication and division fact family using the numbers 11, 6, and 66.

Use these clues to find the secret number. Write the secret number on your worksheet.

- three-digit number
- less than 150
- perfect square
- palindrome

mental math

a. **Number Sense:** 100 ÷ 4

b. **Number Sense:** 201 − 199

c. **Measurement:** How many feet are equal to 48 inches?

d. **Money:** Masa, Marta, and Naomi paid $24 altogether for tickets to the history museum. How much money did each ticket cost?

problem solving

It took Jack 25 minutes to walk from the U.S. Capitol to the White House. Then it took him 20 minutes to walk from the White House to the Lincoln Memorial. Jack arrived at the Lincoln Memorial at 2:50 p.m. At what time did Jack leave the U.S. Capitol?

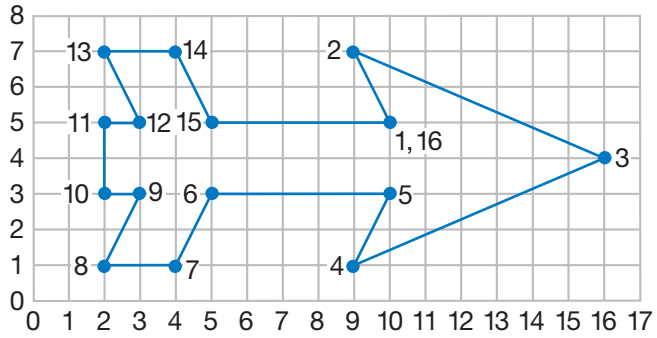
New Concept

In this lesson you will draw a design on a grid by drawing line segments from point to point.

For example, we can draw an arrow on grid paper by first graphing these points:

1. (10,5)	**2. (9,7)**	**3. (16,4)**	**4. (9,1)**
5. (10,3)	**6. (5,3)**	**7. (4,1)**	**8. (2,1)**
9. (3,3)	**10. (2,3)**	**11. (2,5)**	**12. (3,5)**
13. (2,7)	**14. (4,7)**	**15. (5,5)**	**16. (10,5)**

To draw the lines, we start at point 1. From point 1, we draw a segment to point 2. From point 2, we draw a segment to point 3. We continue drawing segments from point to point in order. The drawing begins and ends at the same point.



Classify The design above is a closed figure made up of line segments. What do we call a closed, flat shape with straight sides?

Activity

Dot-to-Dot Design

Materials: **Lesson Activity 34**

On **Lesson Activity 34,** draw segments from point to point to complete the drawing.

Written Practice

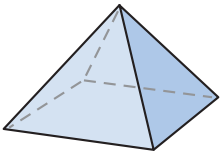
Distributed and Integrated

1. (100) Sammy bought three pizzas for $7.50 each. What was the total cost of the pizzas?

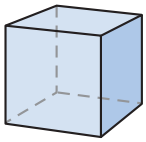
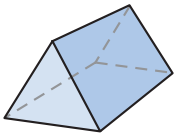
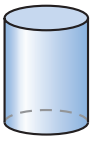
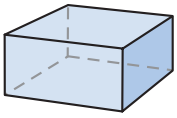
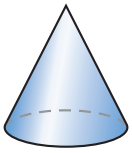
2. (103) Write these numbers from least to greatest:

7,862 5,798 9,365

3. (75) What is the geometric name for this shape? How many edges does it have? How many vertices?



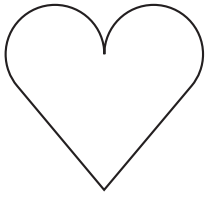
4. (104) **Classify** Mick sorted geometric shapes into Group A and Group B. Where should he put the shape shown in problem **3?**

Group A	Group B
	
	
	

5. (96) Round $7.75 to the nearest dollar.

6. (30) Estimate the difference when 395 is subtracted from 504.

7. (Inv. 9) Copy the figure at right and draw its line of symmetry.



8. (58) Use a ruler to draw a square with sides 2 inches long. What is the perimeter of the square?

9. (27) **Represent** Use a comparison symbol to show each comparison. Then write the comparison in words.

a. $2 \times 3 \bigcirc 3 \times 2$ **b.** $\$0.05 \bigcirc 50¢$

10. (86) If $60 \div 5 = 12$, then what does $60 \div 12$ equal?

11. (11) A leap year contains 366 days. Write 366 in expanded form.

12. (93) Estimate the product of 92 and 9.

13. (86) **Multiple Choice** If $1 \diamondsuit 1 = 1$ and $2 \diamondsuit 2 = 1$, then $\diamondsuit$ stands for which symbol?

A $+$ **B** $-$ **C** $\times$ **D** $\div$

14. (101) $38 \div 2$

15. (84) 51×3

16. (100) Multiply: $4 \times \$1.25$

17. (86) Find each quotient.

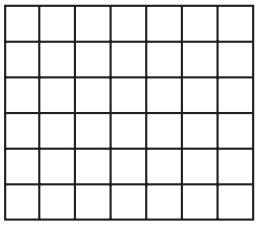
a. $64 \div 8$ **b.** $63 \div 9$ **c.** $60 \div 10$

18. (77) $5 \times 9 \times 2$

19. (2, 35) **Connect** Use your ruler to help you find the next three numbers in this sequence:

$$2,\ 2\tfrac{1}{4},\ 2\tfrac{1}{2},\ \_\_\_\_,\ \_\_\_\_,\ \_\_\_\_,\ \ldots$$

20. (53) **Formulate** Write a multiplication fact that shows how many small squares cover this rectangle.



Early Finishers

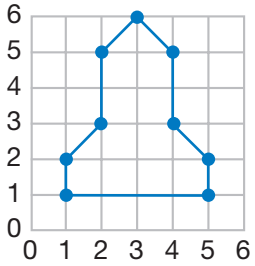
Real-World Connection

Jalicia went out for lunch. She spent half of the money she had on her meal. After she finished lunch and paid the bill, she had $2.25 left. How much money did she have before lunch?

Focus on

• Planning a Design

In Lesson 110, we followed directions to draw a dot-to-dot design. In this investigation we will create a simple design and write directions for drawing the design.



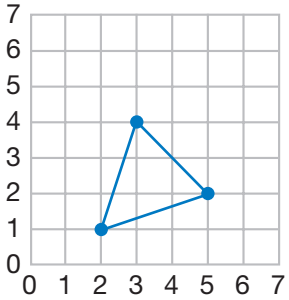
1. Practice writing directions with your class. Look at the design at right. We can start the directions from any point. We will pick point (1,1) as the first point. We name (5,1) as the second point. Then we will continue around the figure, naming the point where each new segment ends. Below are the first three points.

   Continue naming the points in order all the way back to (1,1). You should have 10 points on your list when you are done.

   1. (1, 1)

   2. (5, 1)

   3. (5, 2)



Triángulo de muestra

2. Practice drawing and writing directions by drawing a triangle on **Lesson Activity 35.** Begin by drawing three dots where grid lines intersect. Be sure the three dots are not lined up. Then draw segments between the dots to make a triangle.

   Now you are ready to write directions for someone else to make your triangle.

   For number 1, write the coordinates of one point (vertex) of your triangle.

   For number 2, write the coordinates of the second point of your triangle.

   For number 3, write the coordinates of the third point of your triangle.

   For number 4, write the coordinates of the first point of your triangle again so that the person following your directions will draw the third side of the triangle.

For our sample triangle, the directions look like this:

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

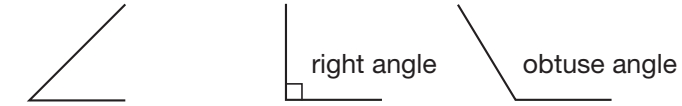
3. On **Lesson Activity 36,** you can draw your own dot-to-dot design. Then you can write directions for another student to follow so that they can make your design. Follow these rules:

- Use only segments—no curves.
- Make all segments end at points where lines on the grid intersect.
- Write the coordinates in order.
- Begin and end at the same point.
- Check your work by following your own directions.

A

acute angle *(65)*

An angle whose opening is smaller than a right angle.



acute angle not **acute angles**

*An **acute angle** is smaller than both a right angle and an obtuse angle.*

ángulo agudo Un ángulo cuya abertura es más pequeña que un ángulo recto.

*Un **ángulo agudo** es menor que un ángulo recto y que un ángulo obtuso.*

---

addend *(6)*

Any one of the numbers in an addition problem.

$2 + 3 = 5$ *The **addends** in this problem are 2 and 3.*

sumando Cualquiera de los números en un problema de suma.

$2 + 3 = 5$ *Los **sumandos** en este problema son el 2 y el 3.*

---

addition *(6)*

An operation that combines two or more numbers to find a total number.

$7 + 6 = 13$ *We use **addition** to combine 7 and 6.*

suma Una operación que combina dos o mas números para encontrar un número total.

$7 + 6 = 13$ *Usamos la **suma** para combinar el 7 y el 6.*

---

a.m. *(3)*

The period of time from midnight to just before noon.

*I get up at 7 **a.m.,** which is 7 o'clock in the morning.*

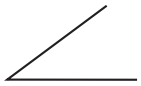
a.m. Período de tiempo desde la medianoche hasta justo antes del mediodía.

*Me levanto a las 7 **a.m.** lo cual es la 7 de la mañana.*

---

angle *(65)*

The opening that is formed when two line segments intersect.



*These line segments form an **angle.***

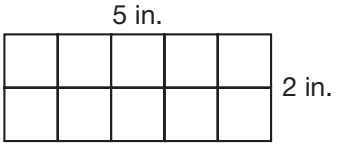
ángulo Abertura que se forma cuando se intersecan dos segmentos de recta.

*Estos segmentos de recta forman un **ángulo.***

---

area *(62)*

The number of square units needed to cover a surface.



*The **area** of this rectangle is 10 square inches.*

área El número de unidades cuadradas que se necesita para cubrir una superficie.

*El **área** de este rectángulo es de 10 pulgadas cuadradas.*

array *(57)*

A rectangular arrangement of numbers or symbols in columns and rows.

```
X X X
X X X
X X X
X X X
```

*This is a 3-by-4 **array** of Xs. It has 3 columns and 4 rows.*

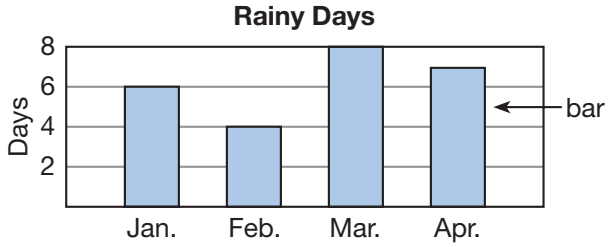
matriz Un arreglo rectangular de números o símbolos en columnas y filas.

*Esta es una **matriz** de Xs de 3 por 4. Tiene 3 columnas y 4 filas.*

B

bar graph *(Inv. 1)*

A graph that uses rectangles (bars) to show numbers or measurements.



*This **bar graph** shows how many rainy days there were in each of these four months.*

gráfica de barras Una gráfica que utiliza rectángulos (barras) para mostrar números o medidas.

*Esta **gráfica de barras** muestra cuántos días lluviosos hubo en cada uno de estos cuatro meses.*

C

calendar *(1)*

A chart that shows the days of the week and their dates.

SEPTEMBER 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

calendar

calendario Una tabla que muestra los días de la semana y sus fechas.

capacity *(87)*

The amount of liquid a container can hold.

*Cups, gallons, and liters are units of **capacity.***

capacidad La cantidad de líquido que puede contener un recipiente.

*Tazas, galones y litros son medidas de **capacidad.***

Celsius *(4)*

A scale used on some thermometers to measure temperature.

*On the **Celsius** scale, water freezes at 0°C and boils at 100°C.*

Celsius Escala que se usa en algunos termómetros para medir la temperatura.

*En la escala **Celsius,** el agua se congela a 0°C y hierve a 100°C.*

---

centimeter *(79)*

One hundredth of a meter.

*The width of your little finger is about one **centimeter.***

centímetro Una centésima de un metro.

*El ancho de tu dedo meñique mide aproximadamente un **centímetro.***

---

century *(57)*

A period of one hundred years.

*The years 2001–2100 make up one **century.***

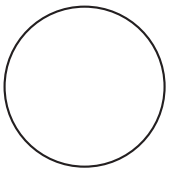
siglo Un período de cien años.

*Los años 2001–2100 forman un **siglo.***

---

circle *(67)*

A closed, curved shape in which all points on the shape are the same distance from its center.



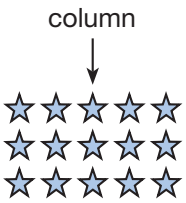
circle

círculo Una figura cerrada y curva en la cual todos los puntos sobre la figura están a la misma distancia de su centro.

---

column *(1, 53)*

A vertical arrangement of numbers, words, or objects in a calendar, table, or array.



columna Un arreglo vertical de números, palabras u objetos en un calendario, tabla o matriz.

---

common year *(1)*

A year with 365 days; not a leap year.

*The year 2000 is a leap year, but 2001 is a **common year.** In a **common year** February has 28 days. In a leap year it has 29 days.*

año común Año con 365 días; no un año bisiesto.

*El año 2000 es un año bisiesto, pero el año 2001 es un **año común.***

*En un **año común** febrero tiene 28 días. En un año bisiesto tiene 29 días.*

comparison symbol *(17)*

A mathematical symbol used to compare numbers.

***Comparison symbols** include the equal sign (=) and the "greater than/less than" symbols (> or <).*

símbolo de comparación

Un símbolo matemático utilizado para comparar números.

*Los **símbolos de comparación** incluyen al símbolo de igualdad (=) y los símbolos "mayor que/menor que" (> o <).*

compatible numbers *(92)*

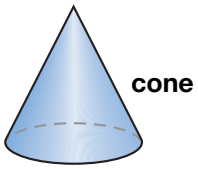
números compatibles

Numbers that are close in value to the actual numbers and are easy to add, subtract, multiply, or divide.

Números que están cerca en valor a los números reales y que son fáciles de sumar, restar, multiplicar o dividir mentalmente.

cone *(75)*

A three-dimensional solid with one curved surface, one flat, circular surface, and a pointed end.

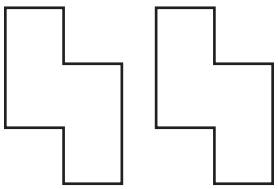


cono

Un sólido tridimensional con una superficie curva, con una superficie circular plana y con un extremo puntiagudo.

congruent *(68)*

Having the same size and shape.



*These polygons are **congruent.** They have the same size and shape.*

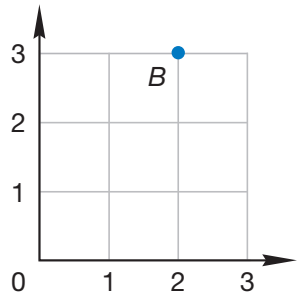
congruente

De igual tamaño y forma.

*Estos polígonos son **congruentes.** Tienen igual tamaño y forma.*

coordinates *(109)*

A pair of numbers used to locate a point on a grid.



*The **coordinates** of point B are (2, 3).*

coordenadas

Un par de números que se utilizan para ubicar un punto sobre una cuadrícula.

*Las **coordenadas** del punto B son (2, 3).*

counting numbers *(4)*

The numbers used to count; the numbers in this sequence: 1, 2, 3, 4, 5, 6, 7, 8, 9, ...

*The numbers 12 and 37 are **counting numbers,** but 0.98 and $\frac{1}{2}$ are not.*

números de conteo

Los números que se utilizan para contar; los números en esta secuencia: 1, 2, 3, 4, 5, 6, 7, 8, 9, . . .

*12 y 37 son **números de conteo** pero 0.98 y $\frac{1}{2}$ no lo son.*

---

counting patterns *(2)*

See **sequence.**

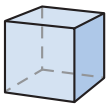
patrones de suma

Ver **secuencia.**

---

cube *(71)*

A three-dimensional solid with six square faces.



cube

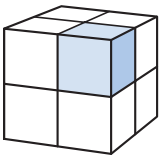
cubo

Un sólido tridimensional con seis caras cuadradas.

---

cubic unit *(73)*

A cube with edges of designated length. Cubic units are used to measure volume.



*The shaded part is 1 **cubic unit.** The volume of the large cube is 8 **cubic units.***

unidad cúbica

Un cubo con aristas de una longitud designada. Las unidades cúbicas se usan para medir volumen.

*La parte sombreada es de 1 **unidad cúbica.** El volumen del cubo mayor es de 8 **unidades cúbicas.***

---

cylinder *(75)*

A three-dimensional solid with two flat surfaces shaped like circles and one curved surface.

cylinder

cilindro

Un sólido tridimensional con dos superficies planas como círculos y con una superficie curva.

D

---

data *(Inv. 1)*

Information gathered from observations or calculations.

82, 76, 95, 86, 98, 97, 93

*These **data** are average daily temperatures for one week in Utah.*

datos

Información reunida de observaciones o cálculos.

*Estos **datos** son el promedio diario de las temperaturas de una semana en Utah.*

decade
(69)

A period of ten years.

*The years 2001–2010 make up one **decade.***

década Un período de diez años.

*Los años 2001–2010 forman una **década.***

decimal point
(21)

A symbol used to separate dollars from cents in money.

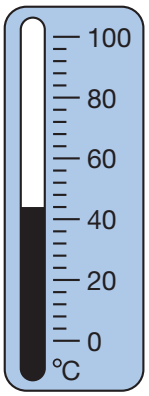
$34.15

decimal point

punto decimal Un símbolo que se utiliza para separar los dólares de los centavos en dinero.

degree (°)
(4)

A unit for measuring temperature.



Water boils.

Water freezes.

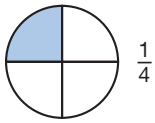
*There are 100 **degrees** (100°) between the freezing and boiling points of water on the Celsius scale.*

grado (°) Una unidad para medir temperatura.

*Hay 100 **grados** (100°) de diferencia entre los puntos de ebullición y congelación del agua en la escala Celsius, o escala centígrada.*

denominator
(41)

The bottom number of a fraction; the number that tells how many parts are in a whole.



*The **denominator** of the fraction is 4. There are 4 parts in the whole circle.*

denominador El número inferior de una fracción; el número que indica cuántas partes hay en un entero.

*El **denominador** de la fracción es 4. Hay cuatro partes en el círculo entero.*

difference
(7)

The result of subtraction.

$12 - 8 = 4$ *The **difference** in this problem is 4.*

diferencia El resultado de una resta.

*La **diferencia** en este problema es 4.*

digit *(11)*

Any of the symbols used to write numbers: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

*The last **digit** in the number 2587 is 7.*

dígito Cualquiera de los símbolos que se utilizan para escribir números: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

*El último **dígito** en el número 2587 es 7.*

---

dividend *(86)*

A number that is divided.

$12 \div 3 = 4$ $\quad 3\overline{)12}$ $\quad \frac{12}{3} = 4$ *The **dividend** is 12 in each of these problems.*

dividendo Número que se divide en una división.

*El **dividendo** es 12 en cada una de estas operaciones.*

---

division *(85)*

An operation that separates a number into a given number of equal parts or into a number of parts of a given size.

$21 \div 3 = 7$ *We use **division** to separate 21 into 3 groups of 7.*

división Una operación que separa un número en un número dado de partes iguales o en un número de partes de una medida dada.

*Usamos la **división** para separar 21 en 3 grupos de 7.*

---

divisor *(86)*

A number by which another number is divided.

$12 \div 3 = 4$ $\quad 3\overline{)12}$ $\quad \frac{12}{3} = 4$ *The **divisor** is 3 in each of these problems.*

divisor Número que divide a otro en una división.

*El **divisor** es 3 en cada una de estas operaciones.*

---

dozen *(62)*

A group of twelve.

*The carton holds a **dozen** eggs.*

The carton holds 12 eggs.

docena Un grupo de doce.

*El cartón contiene una **docena** de huevos.*

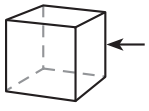
El cartón contiene 12 huevos.

E

---

edge *(71)*

A line segment formed where two faces of a solid intersect.



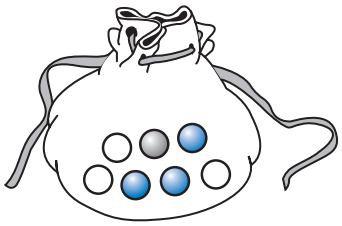
*The arrow is pointing to one **edge** of this cube. A cube has 12 **edges.***

arista Segmento de recta que se forma donde se intersecan dos caras de un sólido.

*La flecha está apuntando hacia una **arista** de este cubo. Un cubo tiene 12 **aristas.***

equally likely *(50)*

Two events that have the same probability of happening.



*Drawing a blue marble and drawing a white marble are **equally likely.***

igualmente probables

Dos eventos que tienen la misma probabilidad de ocurrir.

*Sacar una canica azul y sacar una canica blanca son **igualmente probables.***

equals *(6)*

Has the same value as.

*12 inches **equals** 1 foot.*

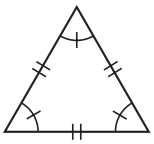
es igual a

Con el mismo valor.

*12 pulgadas **es igual a** 1 pie.*

equilateral triangle *(69)*

A triangle in which all sides are the same length.



*This is an **equilateral triangle.** All of its sides are the same length.*

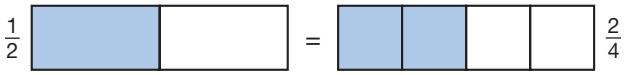
triángulo equilátero

Un triángulo que tiene todos sus lados de la misma longitud.

*Éste es un **triángulo equilátero.** Sus tres lados tienen la misma longitud.*

equivalent fractions *(47)*

Different fractions that name the same amount.



*$\frac{1}{2}$ and $\frac{2}{4}$ are **equivalent fractions.***

fracciones equivalentes

Fracciones diferentes que representan la misma cantidad.

*$\frac{1}{2}$ y $\frac{2}{4}$ son **fracciones equivalentes.***

estimate *(30)*

To find an approximate value.

*He **estimates** that the sum of 203 and 304 is about 500.*

estimar

Encontrar un valor aproximado.

*Puedo **estimar** que la suma de 203 más 304 es aproximadamente 500.*

even numbers *(46)*

Numbers that can be divided into 2 equal groups; the numbers in this sequence: 0, 2, 4, 6, 8, 10, ...

***Even numbers** have 0, 2, 4, 6, or 8 in the ones place.*

números pares

Números que se pueden dividir en grupos iguales; los números en esta secuencia: 0, 2, 4, 6, 8, 10, ...

*Los **números pares** tienen 0, 2, 4, 6 u 8 en el lugar de las unidades.*

exchanging *(Inv. 2)*

See **regrouping.**

intercambiar

Ver **reagrupar.**

expanded form *(11)*

A way of writing a number that shows the value of each digit.

*The **expanded form** of 234 is 200 + 30 + 4.*

forma desarrollada

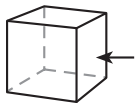
Una manera de escribir un número que muestra el valor de cada dígito.

*La **forma desarrollada** de 234 es 200 + 30 + 4.*

F

face *(71)*

A flat surface of a geometric solid.



*The arrow is pointing to one **face** of the cube. A cube has six **faces.***

cara

Una superficie plana de un sólido geométrico.

*La flecha apunta hacia una **cara** del cubo.*

*Un cubo tiene seis **caras.***

fact family *(8)*

A group of three numbers related by addition and subtraction or by multiplication and division.

*The numbers 3, 4, and 7 are a **fact family.** They make these four facts:*

$$3 + 4 = 7 \qquad 4 + 3 = 7 \qquad 7 - 3 = 4 \qquad 7 - 4 = 3$$

familia de operaciones

Grupo de tres números relacionados por sumas y restas o por multiplicaciones y divisiones.

*Los números 3, 4 y 7 forman una **familia de operaciones.** Forman estas cuatro operaciones:*

$$3 + 4 = 7 \qquad 4 + 3 = 7 \qquad 7 - 3 = 4 \qquad 7 - 4 = 3$$

factor *(55)*

Any one of the numbers multiplied in a multiplication problem.

$2 \times 3 = 6$ *The **factors** in this problem are 2 and 3.*

factor

Cualquiera de los números que se multiplican en un problema de multiplicación.

$2 \times 3 = 6$ *Los **factores** en este problema son el 2 y el 3.*

Fahrenheit *(4)*

A scale used on some thermometers to measure temperature.

*On the **Fahrenheit** scale, water freezes at 32°F and boils at 212°F.*

Fahrenheit

Escala que se usa en algunos termómetros para medir la temperatura.

*En la escala **Fahrenheit,** el agua se congela a 32°F y hierve a 212°F.*

fluid ounce *(87)*

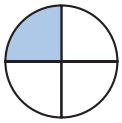
See **ounce.**

onza líquida

Ver **onza.**

fraction *(5)*

A number that names part of a whole.



$\frac{1}{4}$ *of the circle is shaded.*

$\frac{1}{4}$ *is a* ***fraction.***

fracción

Un número que representa una parte de un entero.

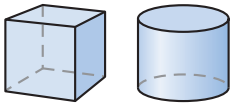
$\frac{1}{4}$ *del círculo está sombreado.* $\frac{1}{4}$ *es una* ***fracción.***

G

geometric solid *(75)*

A shape that takes up space.

geometric solids



cube cylinder

not **geometric solids**

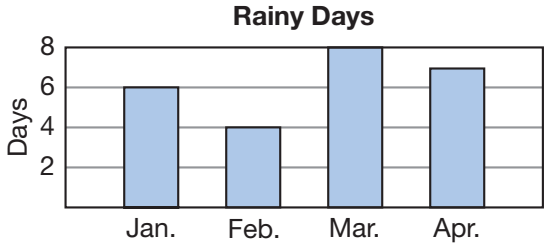
circle rectangle hexagon

sólido geométrico

Un figura geométrica que ocupa espacio.

graph *(Inv. 1)*

A diagram that shows data in an organized way. *See also* **bar graph** *and* **pictograph.**



bar **graph**

gráfica

Un diagrama que muestra datos de manera organizada. *Ver también* **gráfica de barras** *y* **pictograma.**

greater than *(17)*

Having a larger value than.

Five is ***greater than*** *three (5 > 3).*

mayor que

Con valor mayor.

Cinco es ***mayor que*** *tres (5 > 3).*

H

half *(5)*

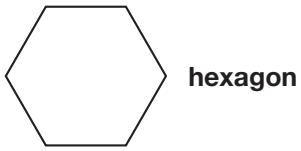
One of two equal parts that together equal a whole.

mitad

Una de dos partes iguales que juntas equivalen a un entero.

hexagon *(67)*

A polygon with six sides.

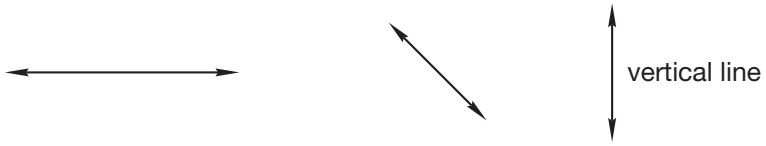


hexagon

hexágono Un polígono con seis lados.

horizontal *(Inv. 6)*

Side to side; perpendicular to vertical.



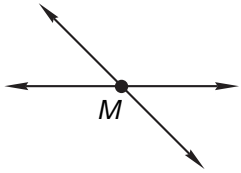
horizontal line not **horizontal** lines

horizontal Lado a lado; perpendicular a la vertical.

I

intersect *(Inv. 4)*

To share a common point or points.



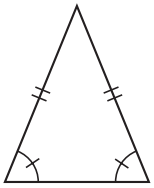
*These two lines **intersect.** They share the common point M.*

intersecar Compartir uno o más puntos en común.

*Estas dos rectas **se intersecan.** Tienen el punto M en común.*

isosceles triangle *(69)*

A triangle with at least two sides of equal length.



*Two of the sides of this **isosceles triangle** have equal lengths.*

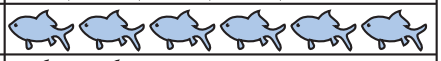
triángulo isósceles Un triángulo que tiene por lo menos dos lados de igual longitud.

*Dos de los lados de este **triángulo isósceles** tienen igual longitud.*

K

key
(Inv. 1)

An expression on a pictograph that shows how many objects are represented by each picture.

Fish in the Class Aquarium	
Angelfish	
Guppies	
Goldfish	

Key
 = 2 fish

clave Una expresión en un pictograma que muestra cuántos objetos están representados por cada imagen.

kilometer
(79)

A metric unit of length equal to 1000 meters.

*One **kilometer** is approximately 0.62 mile.*

kilómetro Una unidad métrica de longitud igual a 1000 metros.

*Un **kilómetro** es aproximadamente 0.62 milla.*

L

leap year
(1)

A year with 366 days; not a common year.

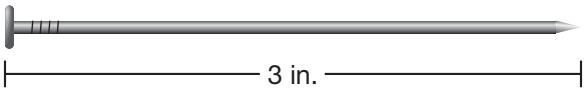
*In a **leap year** February has 29 days.*

año bisiesto Un año con 366 días; no es un año común.

*En un **año bisiesto** febrero tiene 29 días.*

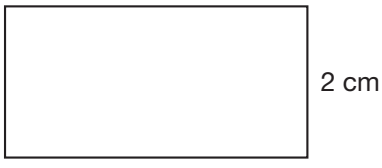
length
(34, 52)

1. A measure of the distance between any two points.



*The **length** of this nail is 3 inches.*

2. The measure of one of the longer sides of a rectangle. *See also* **width.**



*The **length** of this rectangle is 4 centimeters.*

longitud

1. Una medida de la distancia entre dos puntos cualesquiera.

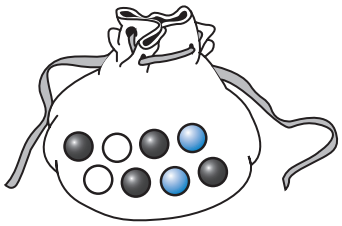
   *La **longitud** de este clavo es de 3 pulgadas.*

2. La medida de uno de los lados más largos de un rectángulo. *Ver también* **ancho.**

   *La **longitud** de este rectángulo es de 4 centímetros.*

less likely
(45)

An event whose probability is less than another event.



*Drawing a white marble is **less likely** than drawing a black marble.*

menos probable Un suceso cuya probabilidad es menor que la de otro suceso.

*Sacar una canica blanca es **menos probable** que sacar una canica negra.*

---

less than
(17)

Having a smaller value than.

*Three is **less than** five ($3 < 5$).*

menor que Con un valor menor.

*Tres es **menor que** cinco ($3 < 5$).*

---

line of symmetry
(Inv. 7)

A line that divides a figure into two halves that are mirror images of each other. *See also* **symmetry.**

lines of symmetry not **lines of symmetry**

eje de simetría Recta que divide una figura en dos mitades, en la cual una mitad es la imagen especular de la otra. *Ver también* **simetría.**

---

line segment
(Inv. 4)

A part of a line with two distinct endpoints.

$\overline{AB}$ *is a **line segment.***

segmento de recta Parte de una recta con dos puntos extremos específicos.

$\overline{AB}$ *es un **segmento de recta.***

---

liter
(87)

A metric unit of capacity or volume.

*A **liter** is a little more than a quart.*

litro Una unidad métrica de capacidad o volumen.

*Un **litro** es un poco más que un cuarto.*

M

---

mass
(80)

The amount of matter an object contains. A kilogram is a metric unit of mass.

*The **mass** of the bowling ball is 7 kilograms.*

masa La cantidad de materia que un objeto contiene. Un kilogramo es una unidad métrica de masa.

*La **masa** de la bola de boliche es de 7 kilogramos.*

meter *(79)*

The basic unit of length in the metric system.

*A **meter** is equal to 100 centimeters, and it is slightly longer than 1 yard.*

*Many classrooms are about 10 **meters** long and 10 **meters** wide.*

metro

La unidad básica de longitud en el sistema métrico.

*Un **metro** es igual a 100 centímetros y es ligeramente más largo que una yarda. Muchos salones de clase miden como 10 **metros** de largo y 10 **metros** de ancho.*

---

metric system *(79)*

An international system of measurement in which units are related by tens. Also called the *International System.*

*Centimeters and kilograms are units in the **metric system.***

sistema métrico

Un sistema internacional de medición en cual las unidades se relacionan por dieces. También es llamado el *Sistema internacional.*

*Centímetros y kilogramos son unidades del **sistema métrico.***

---

midnight *(3)*

12:00 a.m.

***Midnight** is one hour after 11 p.m.*

medianoche

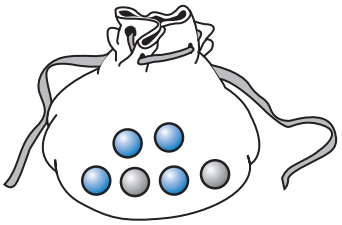
12:00 a.m.

*La **medianoche** es una hora después de las 11 p.m.*

---

more likely *(45)*

An event whose probability is greater than another event.



*Drawing a blue marble is **more likely** than drawing a gray marble.*

más probable

Un suceso cuya probabilidad es mayor que la de otro suceso.

*Sacar una canica azul es **más probable** que sacar una canica gris.*

---

multiple *(78)*

A product of a counting number and another number.

*The **multiples** of 3 include 3, 6, 9, and 12.*

múltiplo

El producto de un número de conteo por otro número.

*Los **múltiplos** de 3 incluyen 3, 6, 9 y 12.*

---

multiplication *(54)*

An operation that uses a number as an addend a specified number of times.

$7 \times 3 = 21$
$7 + 7 + 7 = 21$

*We can use **multiplication** to use 7 as an addend 3 times.*

multiplicación

Una operación que usa un número como un sumando cierto número de veces.

$7 \times 3 = 21$
$7 + 7 + 7 = 21$

*Podemos usar la **multiplicación** para usar 7 como un sumando 3 veces.*

multiplication table *(55)*

A table used to find the product of two numbers. The product of two numbers is found at the intersection of the row and the column for the two numbers.

tabla de multiplicación

Una tabla que se usa para encontrar el producto de dos números. El producto de dos números se encuentra en la intersección de la fila y la columna de los dos números.

---

multiply *(54)*

See **multiplication.**

multiplicar

Ver **multiplicación.**

N

---

noon *(3)*

12:00 p.m.

***Noon** is one hour after 11 a.m.*

mediodía

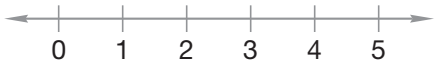
12:00 p.m.

*El **mediodía** es una hora después de las 11 a.m.*

---

number line *(4)*

A line for representing and graphing numbers. Each point on the line corresponds to a number.



number line

recta numérica

Una recta para representar y graficar números. Cada punto de la recta corresponde a un número.

---

number sentence *(6)*

A complete sentence that uses numbers and symbols instead of words. *See also* **equation.**

*The **number sentence** $4 + 5 = 9$ means "four plus five equals nine."*

enunciado numérico

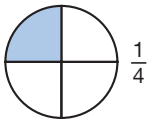
Una oración completa que usa números y símbolos en lugar de palabras. *Ver también* **ecuación.**

*El **enunciado numérico** $4 + 5 = 9$ significa "cuatro más cinco es igual a nueve".*

---

numerator *(41)*

The top number of a fraction; the number that tells how many parts are counted.



*The **numerator** of the fraction is 1. One part of the whole circle is shaded.*

numerador

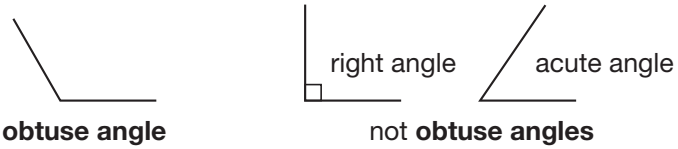
El número de arriba en una fracción; el número que indica cuántas partes se cuentan.

*El **numerador** de la fracción es 1. Una parte del círculo completo está sombreada.*

O

obtuse angle *(65)*

An angle whose opening is bigger than a right angle.



*An **obtuse angle** is larger than both a right angle and an acute angle.*

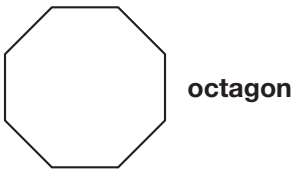
ángulo obtuso Un ángulo cuya abertura es mayor que un ángulo recto.

*Un **ángulo obtuso** es más grande que un ángulo recto y que un ángulo agudo.*

---

octagon *(67)*

A polygon with eight sides.



octágono Un polígono de ocho lados.

---

odd numbers *(46)*

Numbers that have 1 left over when divided into 2 groups; the numbers in this sequence: 1, 3, 5, 7, 9, 11, ...

***Odd numbers** have 1, 3, 5, 7, or 9 in the ones place.*

números impares Números que cuando se dividen en 2 grupos iguales tienen residuo 1; los números en esta secuencia: 1, 3, 5, 7, 9, 11, ...

*Los **números impares** tienen 1, 3, 5, 7 ó 9 en el lugar de las unidades.*

---

opposite sides *(51)*

Sides that are across from each other.

lados opuestos Lados que están uno enfrente del otro.

---

ordinal numbers *(1)*

Numbers that describe position or order.

*"First," "second," and "third" are **ordinal numbers.***

números ordinales Números que describen la posición u orden.

*"Primero", "segundo" y "tercero" son **números ordinales.***

---

ounce *(74, 87)*

A unit of weight in the customary system. Also a measure of capacity.

*Sixteen **ounces** equals a pound. Sixteen **ounces** equals a pint.*

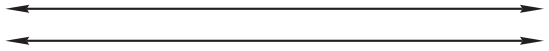
onza Una unidad de peso en el sistema usual. También es una unidad de capacidad.

*Dieciséis **onzas** es igual a una libra. Dieciséis **onzas** es igual a una pinta.*

P

parallel lines
(Inv. 4)

Lines that stay the same distance apart; lines that do not cross.



parallel lines

rectas paralelas

Rectas que siempre están a la misma distancia; rectas que no se cruzan.

parallelogram
(66)

A quadrilateral that has two pairs of parallel sides.

parallelograms

not a **parallelogram**

paralelogramo

Un cuadrilátero que tiene dos pares de lados paralelos.

parentheses
(92)

A pair of symbols used to show which operation to perform first: ( ).

$$15 - (12 - 4)$$

*In the expression 15 − (12 − 4), the **parentheses** mean that 12 − 4 should be calculated first. Then that difference should be subtracted from 15.*

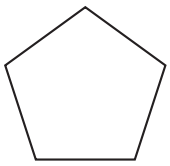
paréntesis

Un par de símbolos que se utilizan para mostrar que operación se debe de hacer primero: ( ).

*En la expresión 15 − (12 − 4) los **paréntesis** significan que 12 − 4 debe ser calculado primero. Después esa diferencia se debe de restar de 15.*

pentagon
(67)

A polygon with five sides.



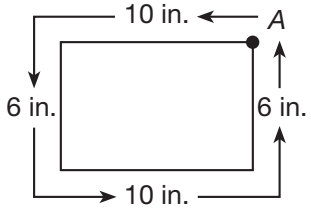
pentagon

pentágono

Un polígono con cinco lados.

perimeter
(58)

The distance around a closed, flat shape.



*The **perimeter** of this rectangle (from point A around to point A) is 32 inches.*

perímetro

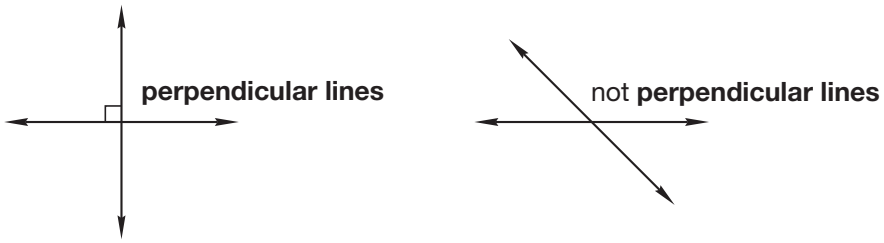
Distancia alrededor de una figura cerrada y plana.

*El **perímetro** de este rectángulo (desde el punto A alrededor del rectángulo hasta el punto A) es 32 pulgadas.*

perpendicular lines

(Inv. 4)

Two lines that intersect at right angles.



rectas perpendiculares Dos rectas que se intersecan formando ángulos rectos.

pictograph

(Inv. 1)

A graph that uses symbols to represent data.

Stars We Saw	
Tom	★★★★★
Bob	★★
Sue	★★★★
Ming	★★★★★
Juan	★★★★★★

*This is a **pictograph.** It shows how many stars each person saw.*

pictograma Una gráfica que usa símbolos para representar datos.

*Éste es un **pictograma.** Muestra el número de estrellas que vio cada persona.*

place value

(11)

The value of a digit based on its position within a number.

$$\begin{array}{r} 341 \\ 23 \\ +\quad 7 \\ \hline 371 \end{array}$$

Place value** tells us that 4 in 341 is worth "4 tens." In addition problems we align digits with the same **place value.

valor posicional El valor de un dígito basado en su posición dentro de un número.

*El **valor posicional** nos dice que 4 en 341 vale "4 dieces". En problemas de suma alineamos los dígitos con el mismo **valor posicional.***

p.m.

(3)

The period of time from noon to just before midnight.

*I go to bed at 9 **p.m.,** which is 9 o'clock at night.*

p.m. Período de tiempo desde el mediodía hasta justo antes de la medianoche.

*Me voy a dormir a las 9 **p.m.,** lo cual es las 9 de la noche.*

point

(4, 109)

An exact location on a line or grid.

•A *This dot represents **point** A.*

punto Un lugar exacto en una línea o cuadrícula.

*Esta marca representa el **punto** A.*

polygon *(67)*

A closed, flat shape with straight sides.

polygons not **polygons**

polígono Una figura cerrada y plana que tiene lados rectos.

pound *(74)*

A customary measurement of weight.

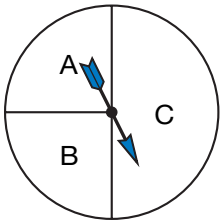
*One **pound** is 16 ounces.*

libra Una unidad usual de peso.

*Una **libra** es igual a 16 onzas.*

probability *(45)*

A way of describing the likelihood of an event.



*The **probability** of the spinner landing on C is the greatest (it is the most likely).*

probabilidad Una manera de describir la posibilidad de ocurrencia de un suceso.

*La **probabilidad** de que la flecha se detenga en C es la mayor (es la más probable).*

product *(55)*

The result of multiplication.

$5 \times 3 = 15$ *The **product** of 5 and 3 is 15.*

producto El resultado de una multiplicación.

$5 \times 3 = 15$ *El **producto** de 5 por 3 es 15.*

pyramid *(75)*

A three-dimensional solid with a polygon as its base and triangular faces that meet at a vertex.

pyramid

pirámide Un sólido tridimensional con un polígono en su base y caras triangulares que se encuentran en un vértice.

Q

quadrilateral *(67)*

Any four-sided polygon.

*Each of these polygons has 4 sides. They are all **quadrilaterals.***

cuadrilátero Cualquier polígono de cuatro lados.

*Cada uno de estos polígonos tiene 4 lados. Todos son **cuadriláteros.***

quarter *(5)*

A term that means one-fourth.

cuarto

Un término que significa un **cuarto.**

quotient *(86)*

The result of division.

$12 \div 3 = 4$ $\quad 3\overline{)12}\,4 \quad \frac{12}{3} = 4$

*The **quotient** is 4 in each of these problems.*

cociente

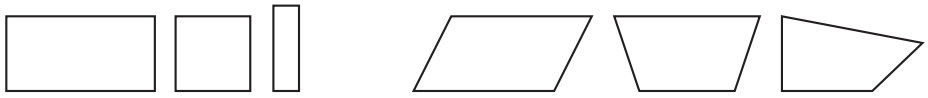
El resultado de una división.

*El **cociente** es 4 en cada una de estas operaciones.*

R

rectangle *(51)*

A quadrilateral that has four right angles.



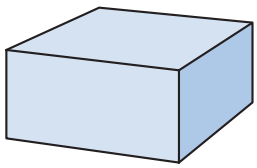
rectangles not **rectangles**

rectángulo

Un cuadrilátero que tiene cuatro ángulos rectos.

rectangular prism *(71)*

A geometric solid with 6 rectangular faces.



rectangular prism

prisma rectangular

Un sólido geométrico con 6 caras rectangulares.

rectangular solid *(71)*

See **rectangular prism.**

sólido rectangular

Ver **prisma rectangular.**

regrouping *(14)*

To rearrange quantities in place values of numbers during calculations.

$$\begin{array}{r} 214 \\ -\ 39 \\ \hline \end{array} \longrightarrow \begin{array}{r} {\scriptstyle 1\ 10\ 14} \\ \not{2}\not{1}\not{4} \\ -\ 39 \\ \hline 175 \end{array}$$

*Subtraction of 39 from 214 requires **regrouping.***

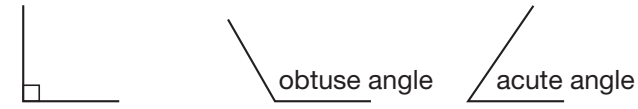
reagrupar

Reordenar cantidades de acuerdo a los valores posicionales de los números cuando se hacen cálculos.

*La resta de 39 de 214 requiere de **reagrupación.***

right angle *(51)*

An angle that forms a square corner. It is often marked with a small square.



right angle not **right angles**

*A **right angle** is larger than an acute angle and smaller than an obtuse angle.*

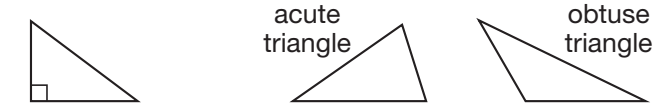
ángulo recto Un ángulo que forma una esquina cuadrada. Se indica con frecuencia con un pequeño cuadrado.

*Un **ángulo recto** es mayor que un ángulo agudo y menor que un ángulo obtuso.*

---

right triangle *(69)*

A triangle with one right angle (square corner).



right triangle not **right triangles**

triángulo rectángulo Un triángulo con un ángulo recto (esquina cuadrada).

---

round *(15)*

To express a calculation or measure to a specific degree of accuracy.

*To the nearest hundred dollars, $294 **rounds** to $300.*

redondear Expresar un cálculo o medir con cierto grado de precisión.

*A la centena más cercana, $294 se **redondea** a $300.*

---

rows *(1, 53)*

A horizontal arrangement of numbers, words, or objects in a calendar, table, or array.

row →

JUNE 2009

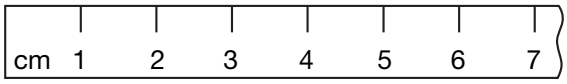
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

filas Un arreglo horizontal de números, palabras u objetos en un calendario, tabla o matriz.

S

scale
(4)

A type of number line used for measuring.



*The distance between each mark on this ruler's **scale** is 1 centimeter.*

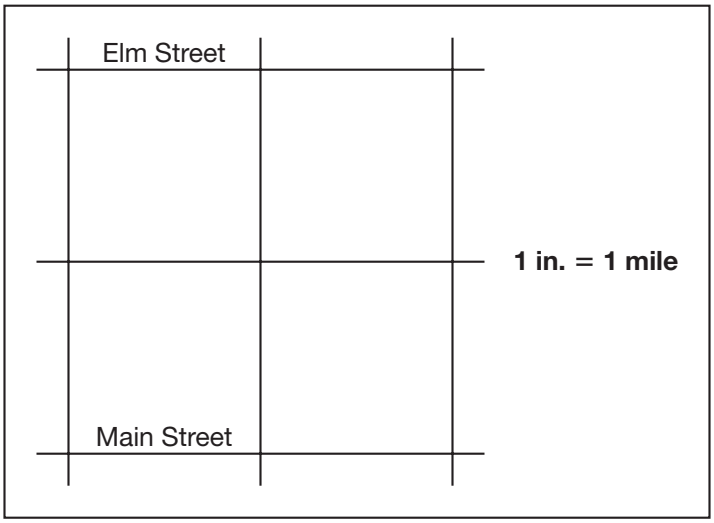
escala Un tipo de recta numérica que se usa para medir.

*La distancia entre cada marca en la **escala** de esta regla es 1 centímetro.*

---

scale map
(Inv. 4)

A map where each unit on the map stands for a different number of units on the actual object or location.



*On this **scale map** of city streets, Main Street and Elm Street are 2 inches apart.*

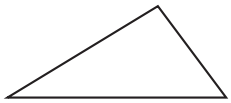
mapa a escala Un mapa donde cada unidad en el mapa representa un número diferente de unidades en el objeto o lugar real.

*En este **mapa a escala** de las calles de la ciudad, la calle Main y la calle Elm están a 2 pulgadas de distancia.*

---

scalene triangle
(69)

A triangle with three sides of different lengths.



*All three sides of this **scalene triangle** have different lengths.*

triángulo escaleno Un triángulo con todos sus lados de diferente longitud.

*Los tres lados de este **triángulo escaleno** tienen diferente longitud.*

---

segment
(Inv. 4)

See **line segment.**

segmento *Ver* **segmento de recta.**

sequence *(2)*

A list of numbers arranged according to a certain rule.

*The numbers 5, 10, 15, 20, . . . form a **sequence.** The rule is "count up by fives."*

secuencia

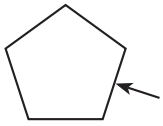
Una lista de números ordenados de acuerdo a una regla.

*Los números 5, 10, 15, 20, ... forman una **secuencia.** La regla es "contar hacia adelante de cinco en cinco".*

---

side *(65)*

A line segment that is part of a polygon.



*The arrow is pointing to one **side.** This pentagon has 5 **sides.***

lado

Un segmento de recta que es parte de un polígono.

*La flecha está apuntando hacia un **lado.** Este pentágono tiene 5 **lados.***

---

solid *(75)*

See **geometric solid.**

sólido

Ver **sólido geométrico.**

---

sphere *(75)*

A round geometric solid with one curved surface.

sphere

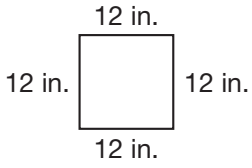
esfera

Un sólido geométrico redondo con una superficie curva.

---

square *(51)*

1. A rectangle with all four sides of equal length.



*All four sides of this **square** are 12 inches long.*

2. The product of a number and itself.

*The **square** of 4 is 16.*

cuadrado

1. Un rectángulo con cuatro lados iguales.

*Los cuatro lados de este **cuadrado** miden 12 pulgadas de longitud.*

2. El producto de un número por sí mismo.

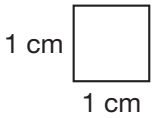
*El **cuadrado** de 4 es 16.*

---

square centimeter *(79)*

A measure of area equal to that of a square with sides 1 centimeter long.

square centimeter



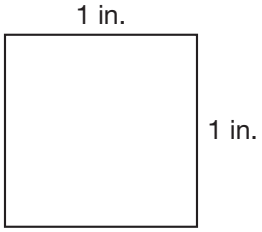
centímetro cuadrado

Una medida de área que es igual a la de un cuadrado con lados de 1 centímetro de largo.

square inch *(62)*

A measure of area equal to that of a square with 1-inch sides.

square inch



pulgada cuadrada

Una medida de área que es igual a la de un cuadrado con lados de 1 pulgada de largo.

---

square number *(61)*

The product when a whole number is multiplied by itself.

*The number 9 is a **square number** because $9 = 3^2$.*

número al cuadrado

El producto de un número multiplicado por sí mismo.

*El número 9 es un **número al cuadrado** porque $9 = 3^2$.*

---

square unit *(62)*

An area equal to the area of a square with sides of designated length.

*The shaded part is 1 **square unit.** The area of the large rectangle is 8 **square units.***

unidad cuadrada

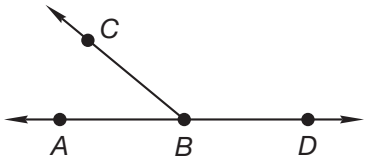
Un área igual al área de un cuadrado con lados de longitud determinada.

*La parte sombreada es 1 **unidad cuadrada.** El área del rectángulo grande es igual a 8 **unidades cuadradas.***

---

straight angle *(65)*

An angle that forms a straight line.



*Angle ABD is a **straight angle.** Angles ABC and CBD are not **straight angles.***

ángulo llano

Un ángulo que forma una línea recta.

*El ángulo ABD es un **ángulo llano.** Los ángulos ABC y CBD no son **ángulos llanos.***

---

subtraction *(7)*

The arithmetic operation that reduces a number by an amount determined by another number.

*We use **subtraction** to take 12 away from 15.* $15 - 12 = 3$

resta

La operación aritmética que reduce un número por una cantidad determinada de otro número.

*Usamos la **resta** para tomar 12 de 15.*

---

sum *(6)*

The result of addition.

$2 + 3 = 5$ *The **sum** of 2 and 3 is 5.*

suma

El resultado de sumar.

$2 + 3 = 5$ *La **suma** de 2 y 3 es 5.*

survey
(Inv. 6)

A method of collecting data about a particular population.

*Mia conducted a **survey** by asking each of her classmates the name of his or her favorite television show.*

encuesta

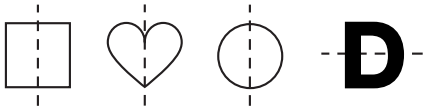
Un método para recolectar datos acerca de una población en particular.

*Mia hizo una **encuesta** entre sus compañeros para averiguar cuál era su programa favorito de televisión.*

---

symmetry
(Inv. 7)

Correspondence in size and shape on either side of a dividing line. *See also* **line of symmetry.**



These figures have **symmetry.**

These figures do not have **symmetry.**

simetría

Correspondencia en tamaño y forma entre cada lado de una línea divisoria. *Ver también* **eje de simetría.**

T

---

table
(Problem Solving Overview)

A way of organizing data in columns and rows.

Our Group Scores

Name	Grade
Group 1	98
Group 2	72
Group 3	85
Group 4	96

*This **table** shows the scores of four groups.*

tabla

Una manera de organizar datos en columnas y filas.

*Esta **tabla** muestra las puntuaciones de cuatro grupos.*

---

tally mark
(Problem Solving Overview)

A small mark used to help keep track of a count.

*I used **tally marks** to count cars.*
I counted five cars.

marca de conteo

Una pequeña marca que se usa para llevar la cuenta.

*Usé **marcas de conteo** para contar carros. Yo conté cinco carros.*

---

tick mark
(4)

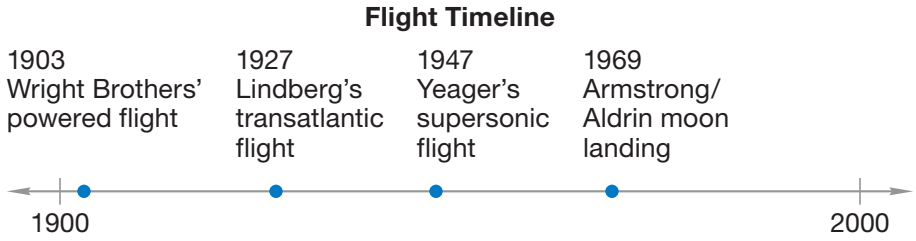
A mark dividing a number line into smaller portions.

marca de un punto

Una marca que divide a una recta numérica en partes más pequeñas.

timeline
(33)

A type of number line for which each tick mark represents a date.



línea cronológica

Un tipo de recta numérica donde cada marca de un punto representa una fecha.

---

ton
(74)

A customary measurement of weight.

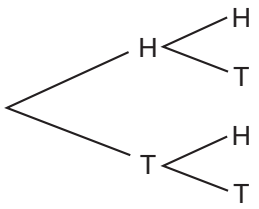
tonelada

Una medida usual de peso.

---

tree diagram
(45)

A way to use branches to organize the choices of a combination problem.



tree diagram

diagrama de árbol

Una manera de usar ramas para organizar las opciones de un problema de combinaciones.

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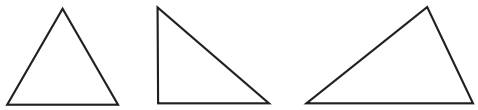
triangle
(69)

A polygon with three sides and three angles.



triangles

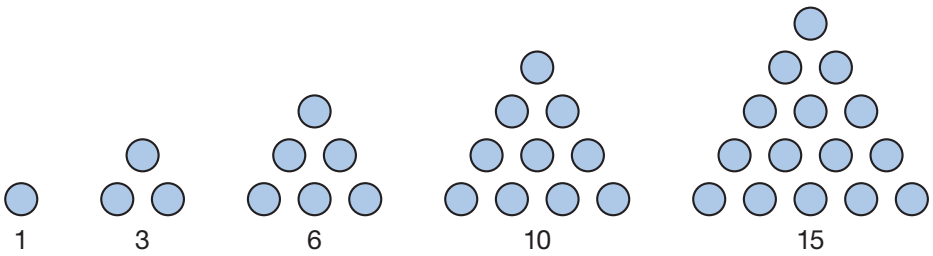
triángulo

Un polígono con tres lados y tres ángulos.

---

triangular numbers
(86)

Numbers that can be arranged in triangular patterns.



*The numbers 1, 3, 6, 10, and 15 are **triangular numbers.***

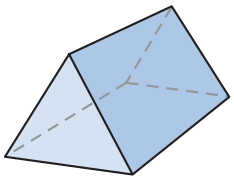
números triangulares

Números que pueden ser ordenados en un patrones triangulares.

*1, 3, 6, 10 y 15 son **números triangulares.***

triangular prism *(75)*

A geometric solid with 3 rectangular faces and 2 triangular faces.



prisma triangular Un sólido geométrico con 3 caras rectangulares y 2 caras triangulares.

U

unit *(53)*

Any standard object or quantity used for measurement.

*Grams, pounds, liters, gallons, inches, and meters are all **units.***

unidad Un objeto o cantidad estándar que se usa para medir.

*Gramos, libras, litros, galones, pulgadas y metros son **unidades.***

U.S. Customary System *(34)*

A system of measurement used almost exclusively in the United States.

*Pounds, quarts, and feet are units in the **U.S. Customary System.***

Sistema usual de EE.UU. Un sistema de medición que se usa casi exclusivamente en EE.UU.

*Libras, cuartos y pies son unidades del **Sistema usual de EE.UU.***

V

Venn diagram *(105)*

A type of diagram that shows how objects, numbers, or words are sorted.

Venn diagram

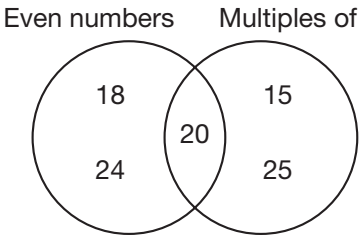
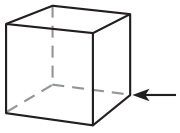


diagrama de Venn Un tipo de diagrama que muestra cómo y cuántos objetos, números o palabras se separan.

vertex *(65, 71)*

(Plural: *vertices*) A point of an angle, polygon, or solid where two or more line segments meet.



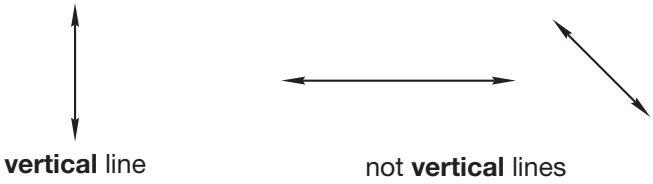
*The arrow is pointing to one **vertex** of this cube. A cube has eight **vertices.***

vértice Punto de un ángulo, polígono o sólido donde se unen dos o más segmentos de recta.

*La flecha está apuntando hacia un **vértice** de este cubo. Un cubo tiene ocho **vértices.***

vertical
(Inv. 6)

Upright; perpendicular to horizontal.



vertical line

not **vertical** lines

vertical Hacia arriba; perpendicular a la horizontal.

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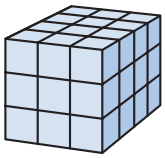
volume
(73)

The amount of space a solid shape occupies. Volume is measured in cubic units.



*This rectangular prism is 3 units wide, 3 units high, and 4 units deep. Its **volume** is $3 \cdot 3 \cdot 4 = 36$ cubic units.*

volumen La cantidad de espacio ocupado por una figura sólida. El volumen se mide en unidades cúbicas.

*Este prisma rectangular tiene 3 unidades de ancho, 3 unidades de altura y 4 unidades de profundidad. Su **volumen** es $3 \cdot 3 \cdot 4 = 36$ unidades cúbicas.*

W

---

weight
(74)

The measure of the force of gravity on an object. Units of weight in the customary system include ounces, pounds, and tons.

*The **weight** of the bowling ball is 12 pounds.*

peso La medida de la fuerza de gravedad sobre un objeto. Las unidades de peso en el sistema usual incluyen onzas, libras y toneladas.

*El **peso** de la bola de boliche es 12 libras.*

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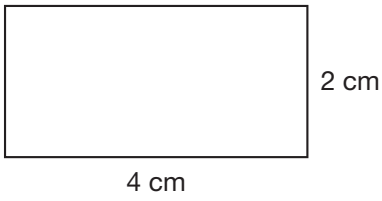
width
(52)

The measure of one of the shorter sides of a rectangle. *See also* **length.**



*The **width** of this rectangle is 2 centimeters.*

ancho La medida de uno de los lados más cortos de un rectángulo. *Ver también* **longitud.**

*El **ancho** de este rectángulo es de 2 centimetros.*

Y

---

yard
(34)

A customary measurement of length.

yarda Una medida usual de longitud.

Symbols

Symbol	Meaning	Example
$<$	Less than	$2 < 3$
$>$	Greater than	$3 > 2$
$=$	Equal to	$2 = 2$
°F	Degrees Fahrenheit	100°F
°C	Degrees Celsius	32°C
∟	Right angle	
…	And so on	1, 2, 3, …
$\times$	Multiply	9×3
$\cdot$	Multiply	$3 \cdot 3 = 9$
$\div$	Divide	$9 \div 3$
$+$	Add	$9 + 3$
$-$	Subtract	$9 - 3$
$\overline{)}$	Divided into	$3\overline{)9}$

Símbolos/Signos

Símbolo/Signo	Significa	Ejemplo
$<$	Menor que	$2 < 3$
$>$	Mayor que	$3 > 2$
$=$	Igual a	$2 = 2$
°F	Grados Fahrenheit	100°F
°C	Grados Celsius	32°C
∟	Ángulo recto	
…	Y más, etcétera	1, 2, 3, …
$\times$	Multiplica	9×3
$\cdot$	Multiplica	$3 \cdot 3 = 9$
$\div$	Divide	$9 \div 3$
$+$	Suma	$9 + 3$
$-$	Resta	$9 - 3$
$\overline{)}$	Dividido entre	$3\overline{)9}$

Abbreviations

Abbreviation	Meaning
ft	Foot
in.	Inch
yd	Yard
mi	Mile
m	Meter
cm	Centimeter
km	Kilometer
L	Liter
ml or mL	Milliliter
lb	Pound
oz	Ounce
kg	Kilogram
g	Gram
qt	Quart
pt	Pint
c	Cup
gal	Gallon

Abreviaturas

Abreviatura	Significa
pie	pie
pulg	pulgada
yd	yarda
mi	milla
m	metro
cm	centímetro
km	kilómetro
L	litro
mL	mililitro
lb	libra
oz	onza
kg	kilogramo
g	gramo
ct	cuarto
pt	pinta
tz	taza
gal	galón

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