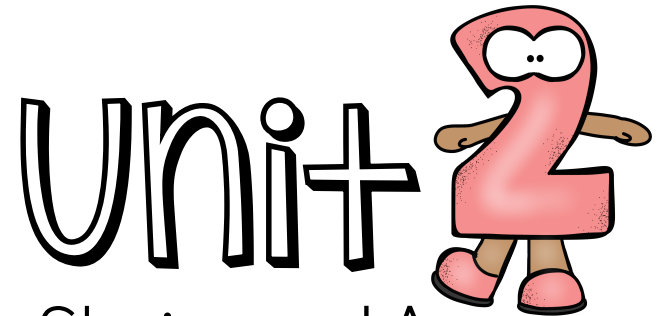


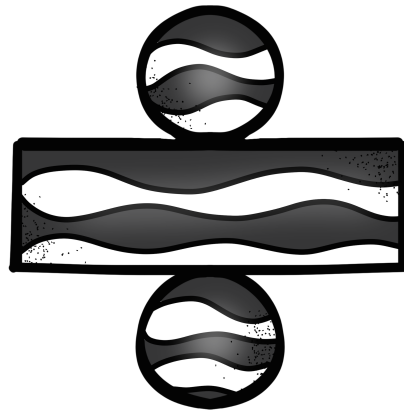
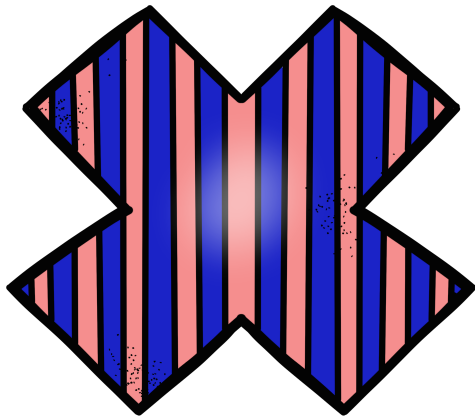
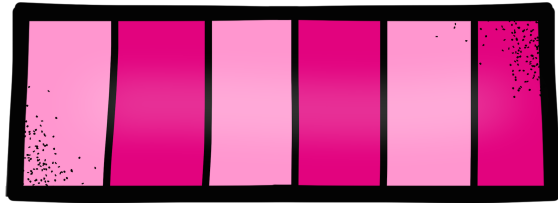
EDM
Version 4

Grade 3

Everyday Math:



Number Stories and Arrays



Study Guide



Thank you!

Catherine Wiist @ Abc 123is4me

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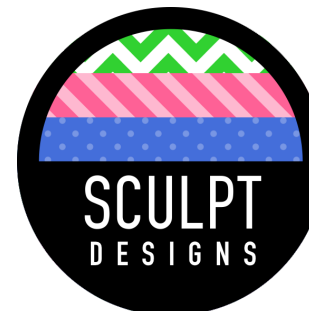
<http://abc123is4me.blogspot.com/>

(Follow me here to see how I use my products in my classroom!)



Credits:

Graphics From the Pond <http://frompond.blogspot.com>

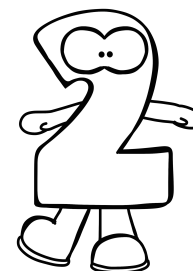


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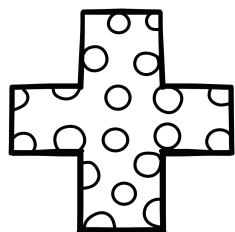
Grade 3

Everyday Math: Unit+



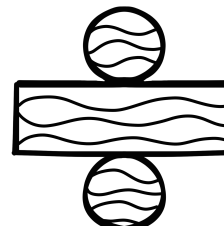
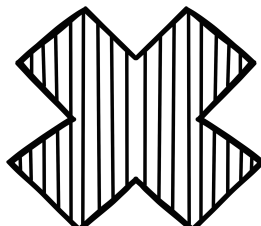
Number Stories and Arrays

Study Guide



Unit Vocabulary:

area, array, arrow rule, change diagram, combinations of ten, comparison diagram, dividend, division, divisor, efficient, equal groups, equation, fact extensions, factors, fractions, fraction circles, frames. Frames and Arrows, liter, multiples, number model, number sentence, parts-and-total diagram, product, quotient, remainder, representation, square centimeter (sq cm), square inch (sq in.), unknown, volume, whole



Lesson 2.1:

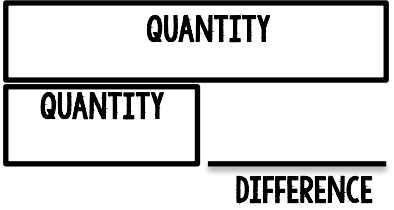
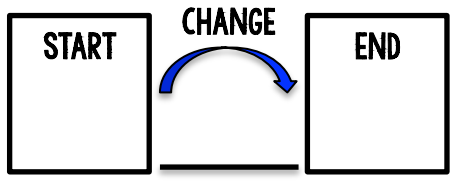
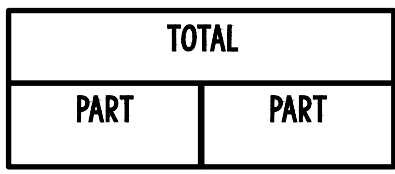
How do you use basic addition and subtraction facts to help you solve problems with larger numbers?

$4 + \underline{\hspace{2cm}} = 13$	$16 - 7 = \underline{\hspace{2cm}}$
$40 + \underline{\hspace{2cm}} = 130$	$26 - 7 = \underline{\hspace{2cm}}$
$400 + \underline{\hspace{2cm}} = 1,300$	$56 - 7 = \underline{\hspace{2cm}}$

Lesson 2.2:

How are diagrams and pictures used to help you solve number stories?

For the story problem below, write a number model with a ?. Then solve the number story. You may draw diagrams, like these below, or pictures to help.



The third- and fourth- grade classes collected 650 Box Tops for the month of October. The fourth graders collected 200 Box Tops. How many did the third graders collect?

Number model with ? : _____

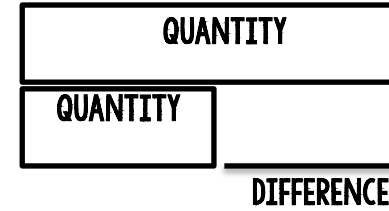
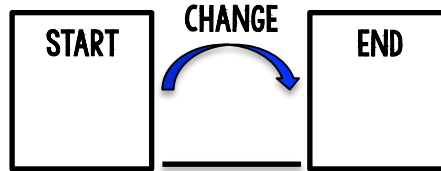
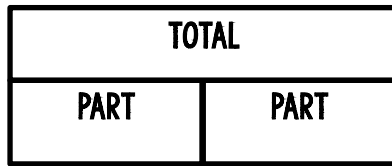
Answer the question: _____ (unit)

How do you know your answer makes sense? _____

Lesson 2.3:

How are situation diagrams used to help you solve number stories?

For the story problem below, write a number model with a ?. Then solve the number story. You may draw diagrams, like these below, or pictures to help.



Tony earned \$45 raking leaves. His friend earned \$62. How much more money did his friend make?

Number model with ? : _____

Answer the question: _____ (unit)

Check: How do you know your answer makes sense?

Lesson 2.4:

How do you solve a number story involving more than one step?

Solve the problem. Show your work with pictures, numbers, or words. Write number models to keep track of your thinking.

Matilda has 93¢. She buys two gumdrops for 35¢ each.
How much money does she have left?

Number models: _____

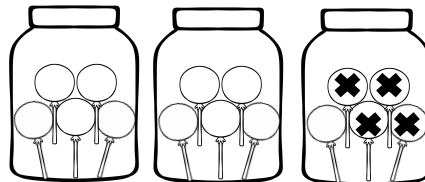
Answer: _____¢

Lesson 2.5:

How do you solve a number story using more than one operation?

Pedro read the number story below. Then he drew a picture and wrote two number models to help keep track of his thinking.

Shelly had 3 jars with 5 lollipops in each pack. She gave 4 lollipops away to her friends. How many lollipops does she still have?



$$3 \times 5 = 15$$

$$15 - 4 = 11$$

Do Pedro's number models fit the number story? Explain your answer.

Lesson 2.6:

How do you solve problems involving multiples of equal groups?

There are 6 water bottles in a pack.

a. How many water bottles are in 5 packs?

You may draw a picture to help you solve.

Circle the number model that fits the story.

$$5 \times 6 = ? \quad 5 + 6 = ?$$

Answer: _____
(unit)

Lesson 2.7:

How do you solve array problems?

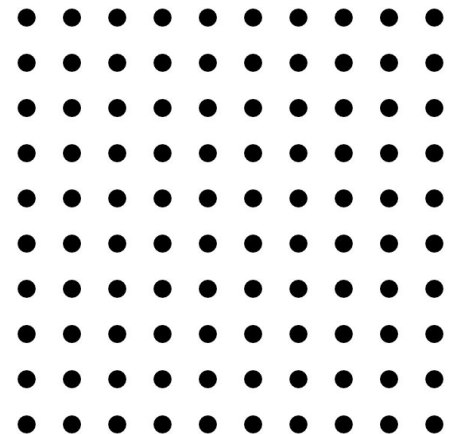
There are 3 rows of pumpkins with 8 pumpkins in each row.
How many pumpkins are there in all?

a. Draw an array on the dot grid to match the story. →

b. Circle the number model that fits the story.

$$3 + 8 = ? \quad 3 \times 8 = ?$$

There are _____ **in all.**
(unit)



Lesson 2.8:

How do you solve a division problem?

Share 20 gumballs equally among 4 friends.

Draw a picture to show how you shared the gumballs.

Each friend gets _____.
(unit)

There are _____ left over.
(unit)

Lesson 2.9:

How do you solve a division number story involving remainders?

Bart gives 37 cookies equally among 5 friends.

Draw a picture to show how he shared the cookies.

Each friend gets _____.
(unit)

There are _____ left over.
(unit)

Lesson 2.10:

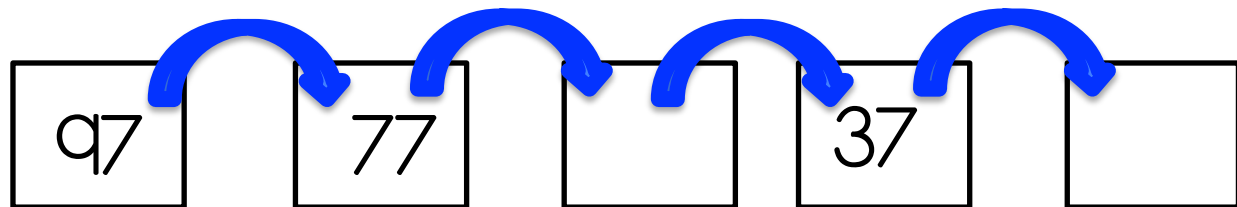
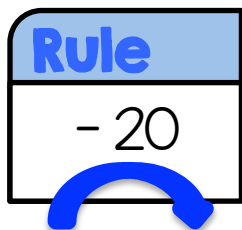
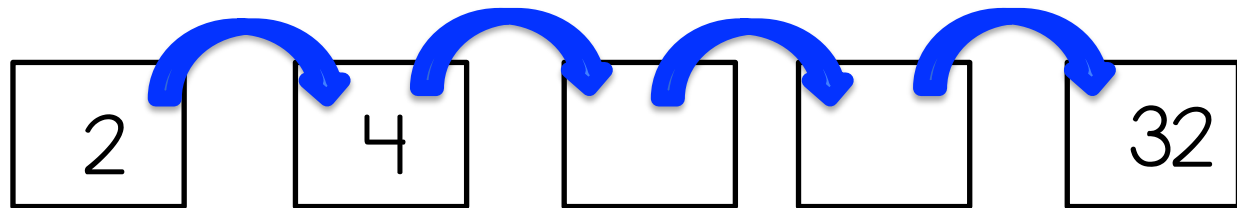
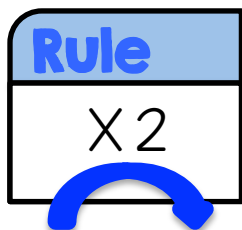
How do you identify patterns in numbers?

Answer "yes" or "no" for each question below.

- Can Joey make an array with 2 equal rows if he has 7 counters? _____
- Can Cassidy make an array with 2 equal rows if she has 12 counters? _____
- Can Raul make an array of 2 equal rows if he has 15 counters? _____

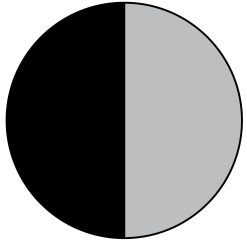
Lesson 2.11:

How do you use Frames-and-Arrows diagrams to solve problems involving the four operations?

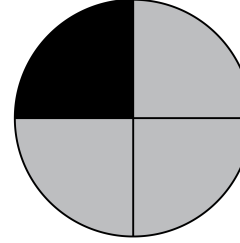


Lesson 2.12:

Exploration A: How do you compare parts to a whole?



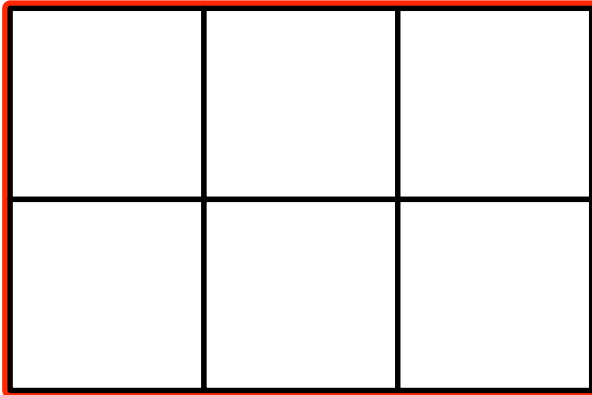
What fraction of the circle is the dark part?



What fraction of the circle is the dark part?

Exploration B: How do you calculate the area of a rectangle?

The surface inside the border is called the _____.



_____ square inches

Exploration C: How do you compare liquid volume?

The amount of liquid in a container is called the _____.

An example of a unit that measures volume is _____.


ANSWER KEY

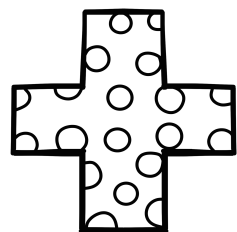


Name: Answer Key

Test Date: ___ - ___ - ___

Grade 3

Everyday Math: Unit 
Number Stories and Arrays

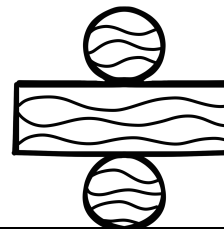
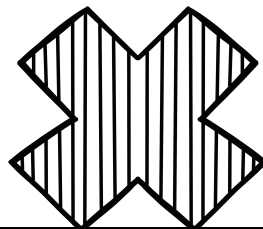


Study Guide



Unit Vocabulary:

area, array, arrow rule, change diagram, combinations of ten, comparison diagram, dividend, division, divisor, efficient, equal groups, equation, fact extensions, factors, fractions, fraction circles, frames. Frames and Arrows, liter, multiples, number model, number sentence, parts-and-total diagram, product, quotient, remainder, representation, square centimeter (sq cm), square inch (sq in.), unknown, volume, whole



Lesson 2.1:

How do you use basic addition and subtraction facts to help you solve problems with larger numbers?

$$4 + \underline{9} = 13$$

$$16 - 7 = \underline{9}$$

$$40 + \underline{90} = 130$$

$$26 - 7 = \underline{19}$$

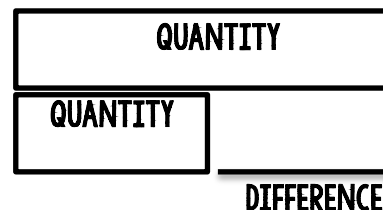
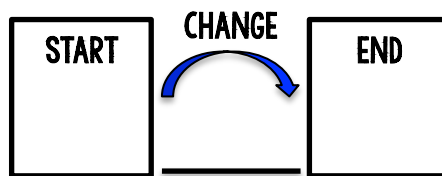
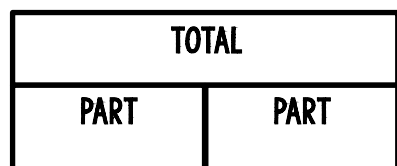
$$400 + \underline{900} = 1,300$$

$$56 - 7 = \underline{49}$$

Lesson 2.2:

How are diagrams and pictures used to help you solve number stories?

For the story problem below, write a number model with a ?. Then solve the number story. You may draw diagrams, like these below, or pictures to help.



The third- and fourth- grade classes collected 650 Box Tops for the month of October. The fourth graders collected 200 Box Tops. How many did the third graders collect?

Number model with ? : $200 + ? = 650$ or $650 - 200 = ?$

Answer the question: 450 BOX TOPS
(unit)

sample answer:

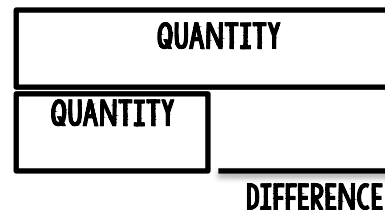
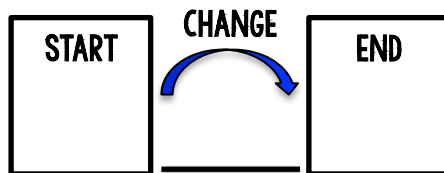
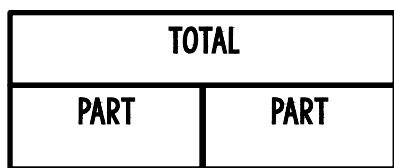
How do you know your answer makes sense? The unknown has to be smaller

than the total of 650. 450 makes the number model true.

Lesson 2.3:

How are situation diagrams used to help you solve number stories?

For the story problem below, write a number model with a ?. Then solve the number story. You may draw diagrams, like these below, or pictures to help.



Tony earned \$45 raking leaves. His friend earned \$62. How much more money did his friend make?

Number model with ? : $62 - 45 = ?$ or $45 + ? = 62$

Answer the question: \$17 (unit)

Check: How do you know your answer makes sense? **sample answer:**

The difference is smaller than the largest money amount. 17 makes the number model true.

Lesson 2.4:

How do you solve a number story involving more than one step?

Solve the problem. Show your work with pictures, numbers, or words. Write number models to keep track of your thinking.

Matilda has 93¢. She buys two gumdrops for 35¢ each.
How much money does she have left?

Number models: $35 \times 2 = 70$ $93 - 70 = 23$

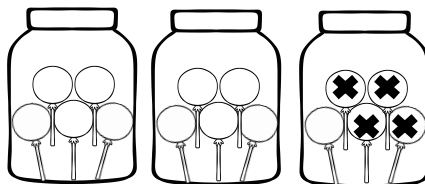
Answer: 23 ¢

Lesson 2.5:

How do you solve a number story using more than one operation?

Pedro read the number story below. Then he drew a picture and wrote two number models to help keep track of his thinking.

Shelly had 3 jars with 5 lollipops in each pack. She gave 4 lollipops away to her friends. How many lollipops does she still have?



$$3 \times 5 = 15$$

$$15 - 4 = 11$$

Do Pedro's number models fit the number story? Explain your answer.

Yes. Sample explanation: They fit because Shelly had 3 jars of 5 lollipops each, and that is $3 \times 5 = 15$. Then she gave 4 away, and that is $15 - 4 = 11$. So she had 11 lollipops left.

Lesson 2.6:

How do you solve problems involving multiples of equal groups?

There are 6 water bottles in a pack.

a. How many water bottles are in 5 packs?

You may draw a picture to help you solve.

Circle the number model that fits the story.

$5 \times 6 = ?$ $5 + 6 = ?$

Answer: 30 water bottles
(unit)

Lesson 2.7:

How do you solve array problems?

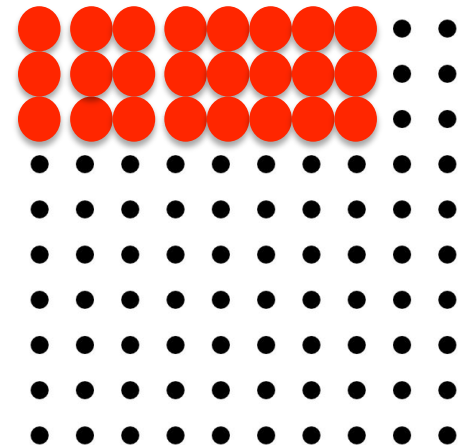
There are 3 rows of pumpkins with 8 pumpkins in each row.
How many pumpkins are there in all?

a. Draw an array on the dot grid to match the story. →

b. Circle the number model that fits the story.

$3 + 8 = ?$ $3 \times 8 = ?$

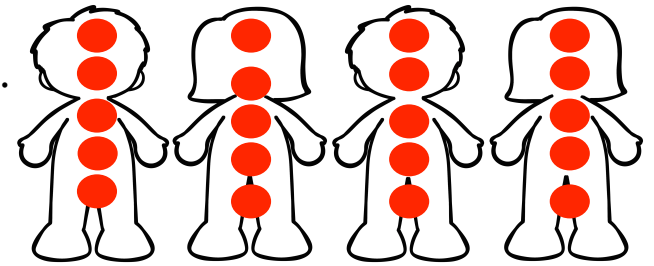
There are 24 pumpkins in all.
(unit)



Lesson 2.8:

How do you solve a division problem?

Share 20 gumballs equally among 4 friends.
Draw a picture to show how you shared the gumballs.



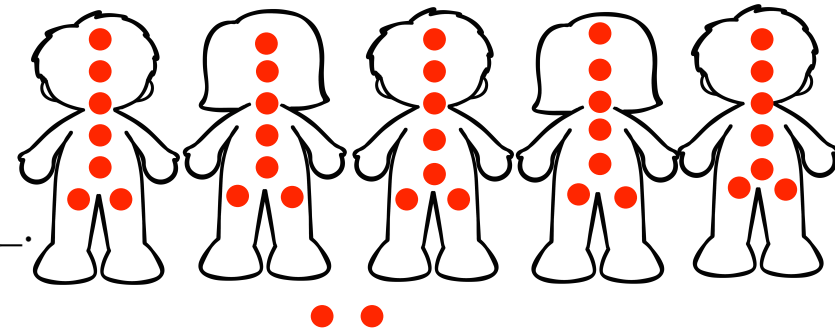
Each friend gets 5 gumballs (unit).

There are 0 gumballs (unit) left over.

Lesson 2.9:

How do you solve a division number story involving remainders?

Bart gives 37 cookies equally among 5 friends.
Draw a picture to show how he shared the cookies.



Each friend gets 7 cookies (unit).

There are 2 cookies (unit) left over.

Lesson 2.10:

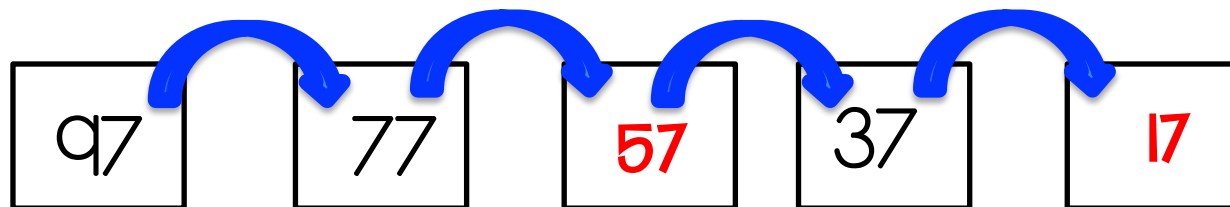
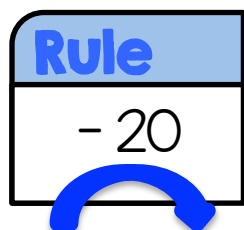
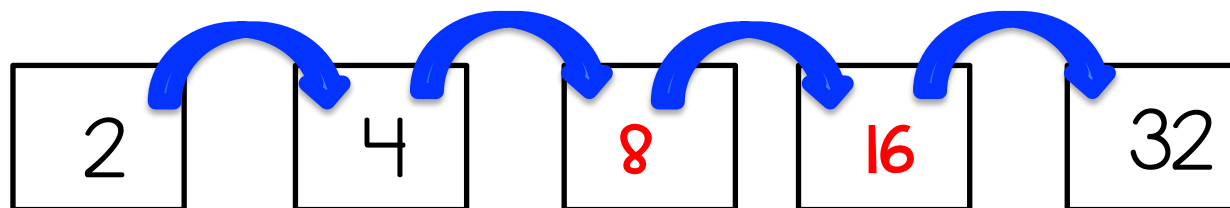
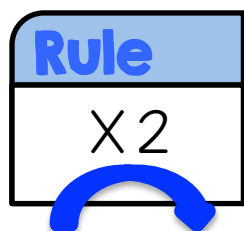
How do you identify patterns in numbers?

Answer "yes" or "no" for each question below.

- a. Can Joey make an array with 2 equal rows if he has 7 counters? NO
- b. Can Cassidy make an array with 2 equal rows if she has 12 counters? yes
- c. Can Raul make an array of 2 equal rows if he has 15 counters? NO

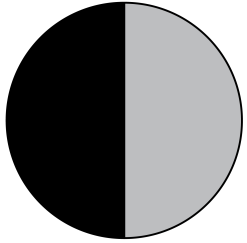
Lesson 2.11:

How do you use Frames-and-Arrows diagrams to solve problems involving the four operations?



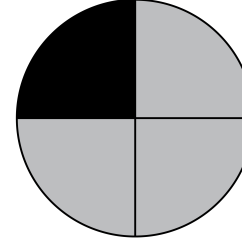
Lesson 2.12:

Exploration A: How do you compare parts to a whole?



What fraction of the circle is the dark part?

one-half

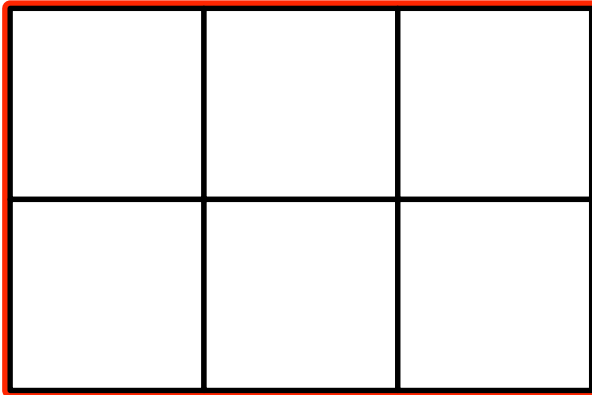


What fraction of the circle is the dark part?

one-fourth

Exploration B: How do you calculate the area of a rectangle?

The surface inside the border is called the area.



6 square inches

Exploration C: How do you compare liquid volume?

The amount of liquid in a container is called the liquid volume.

An example of a unit that measures volume is gallon, liter, etc.