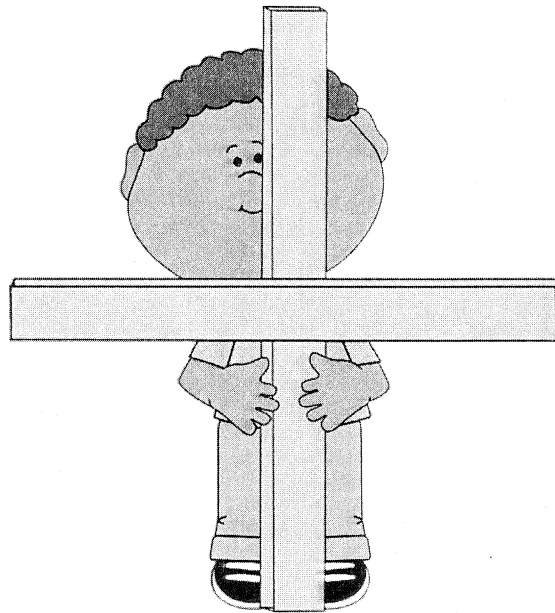


Unit 2

Study Guide

Number Stories and
Arrays



Name: _____ Date: _____

EVERYDAY MATHEMATICS—3rd Grade

Unit 2 Review: Number Stories and Arrays

Fill in the unit box and the blanks.

UNIT

1) $4 + \underline{\hspace{2cm}} = 12$

$40 + \underline{\hspace{2cm}} = 120$

$400 + \underline{\hspace{2cm}} = 1200$

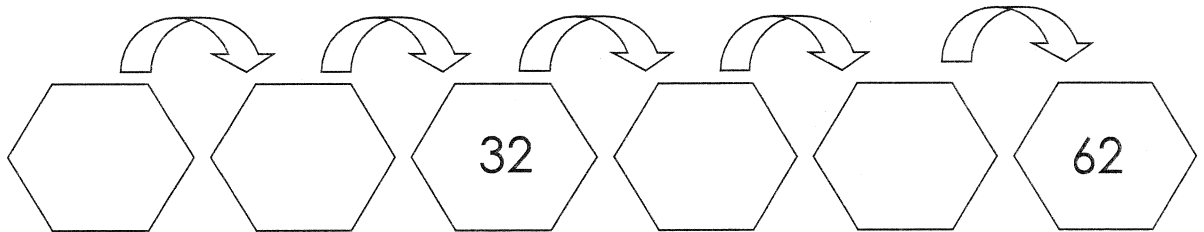
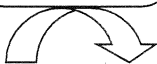
2) $16 - 9 = \underline{\hspace{2cm}}$

$26 - 9 = \underline{\hspace{2cm}}$

$76 - 9 = \underline{\hspace{2cm}}$

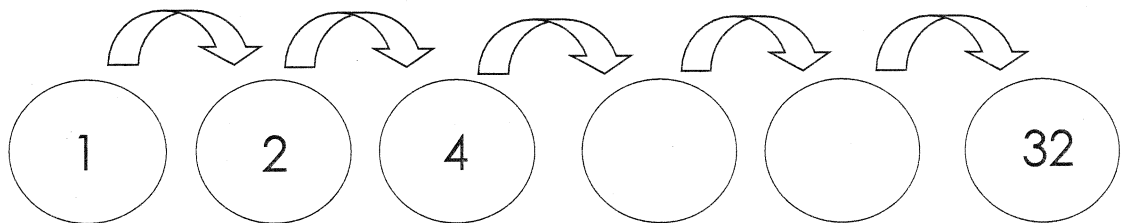

3)

Rule
$+ 10$



4)

Rule

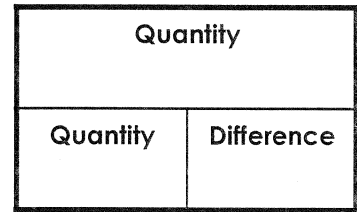
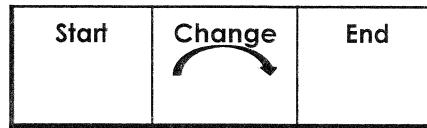
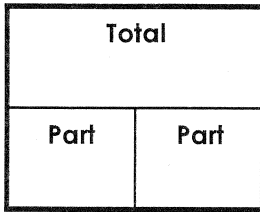


Unit 2 Review (continued)

For each number story, write a number model with a ?.

Then solve the number story.

You may draw diagrams, like those below, or pictures to help.



- 5) Madison ran for a total of 48 minutes on Monday and Tuesday. She ran for 30 minutes on Monday. How many minutes did she run on Tuesday?

(number model with a ?)

Answer: _____

(unit)

How do you know your answer makes sense?

- 6) One Mississippi alligator clutch has 41 eggs. Another Mississippi alligator clutch has 29 eggs. How many more eggs are in the first clutch?

(number model with a ?)

Answer: _____

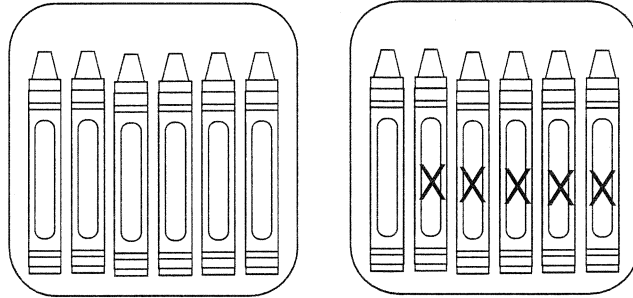
(unit)

How do you know your answer makes sense?

Unit 2 Review (continued)

- 7) Camden read the number story below. Then he drew a picture and wrote two number models to keep track of his thinking.

Mrs. Wilson has 2 packs of crayons with 6 crayons in each pack.
She gives 5 of the crayons to her students.
How many crayons does she still have?



$$2 \times 6 = 12$$

$$12 - 5 = 7$$

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

- 8) There are 6 hot dog buns in a pack.
a. How many hot dog buns are in 6 packs?
You may draw a picture to help you solve.
Circle the number model that fits the story.

$6 + 6 = ?$

$6 \times 6 = ?$

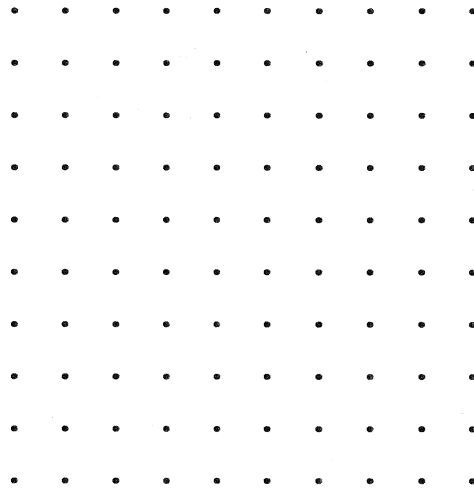
Answer: _____
(unit)

- b. Explain how you solved Problem 8a.

Unit 2 Review (continued)

9) You have 3 rows of chairs with 6 chairs in each row.
How many chairs do you have in all?

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



b. Circle the number model that fits the story.

$3 \times 6 = ?$

$3 + 6 = ?$

There are _____ in all.
(unit)

10) Share 15 marbles equally among 3 friends.
Draw a picture to show how you shared the marbles.

Each friend gets _____.
(unit)

There are _____ left over.
(unit)

Name: _____ Date: _____

EVERYDAY MATHEMATICS—3rd Grade

Unit 2 Challenge Review

1) Hudson says that knowing $4 + 6 = 10$ helps him solve this problem on his calculator.

Enter 334. Change it to 370. How? _____

Explain how Hudson might use the basic fact.

2) Read the number story and circle the pair of number models that fit the story. Then solve.

Mr. Hernandez equally shared 24 crayons among 4 groups. Sal's group found 6 more crayons. How many crayons does Sal's group have now? You may draw a picture to help.

Circle the pairs of number models that best fit the story.

A $24 \div 4 = 6$

$6 + 6 = 12$

B $24 + 4 = 28$

$28 + 6 = 34$

C $24 \times 4 = 96$

$96 + 6 = 102$

D $24 - 4 = 20$

$20 + 6 = 26$

Sal's group now has _____ crayons.

Unit 2 Challenge Review (continued)

3) You have 16 chairs that you want to arrange in an array.

a. Show 3 different ways you could do this on a dot grid at the right. Write number models for each array.

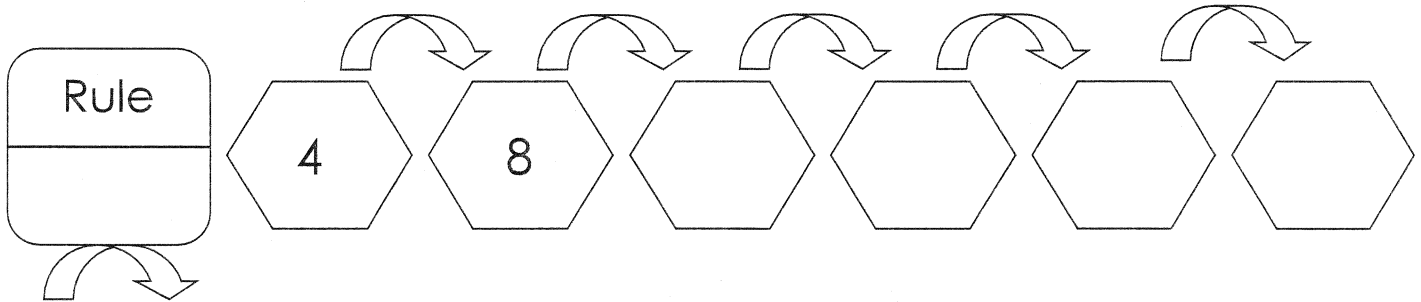
Number models:

b. Can you make a 16-chair array with 5 rows? Explain.

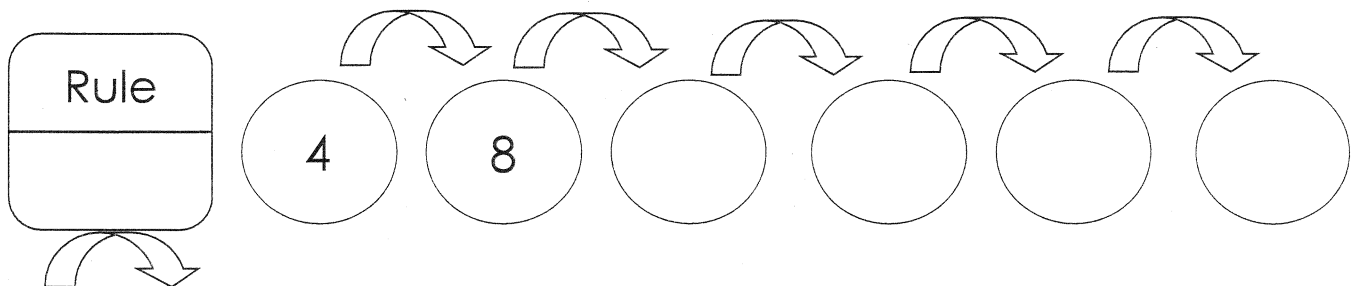


4) Joey is making a Frames-and-Arrows problem. His first two frames show 4 and then 8.

Write a rule that Joey might be using. Then fill in the frames.



Write a rule that gives different numbers for the other frames. Then fill in the frames.

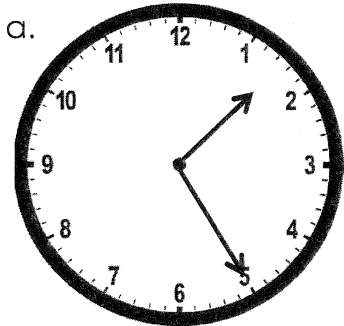


Name: _____ Date: _____

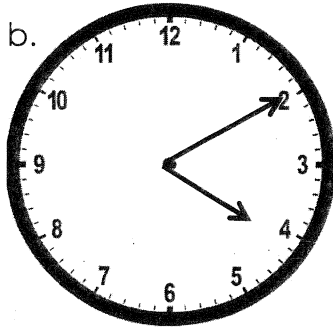
EVERYDAY MATHEMATICS—3rd Grade

Unit 2 Cumulative Review

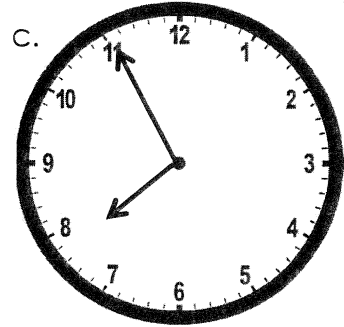
1) Record the time shown on each clock.



_____ : _____



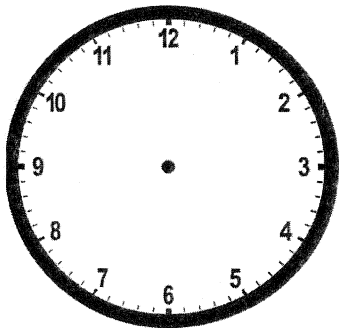
_____ : _____



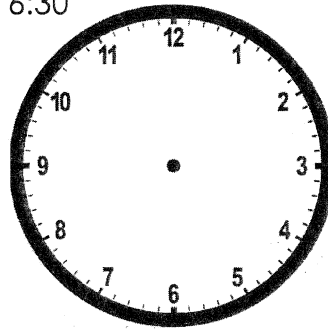
_____ : _____

2) Draw the hands to show the times.

a. 6:15



b. 6:30



3) Solve. a. $8 \times 2 =$ _____

b. _____ $= 3 \times 3$

c. _____ $= 5 \times 4$

d. _____ $= 7 \times 10$

e. _____ $= 2 \times 4$

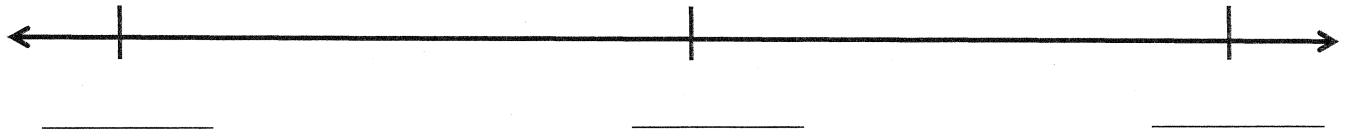
f. $3 \times 4 =$ _____

g. Explain how you solved 7×10 .

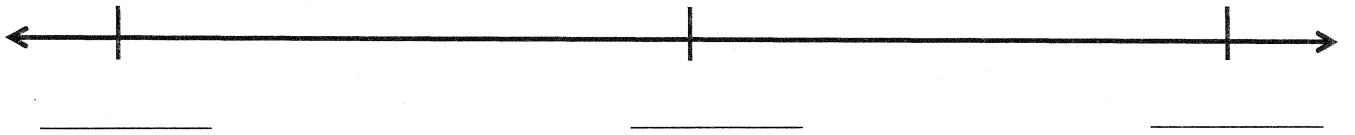
Unit 2 Cumulative Review (continued)

4) Round each number to the nearest 10.
You may use open number lines to help.

a. 63 _____



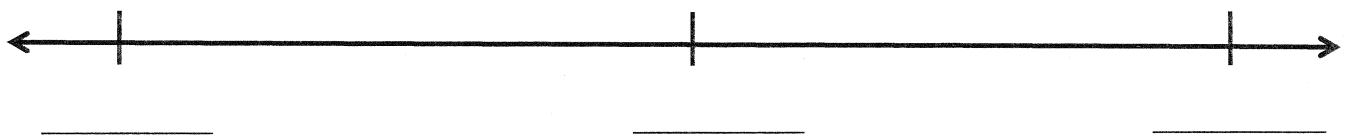
b. 27 _____



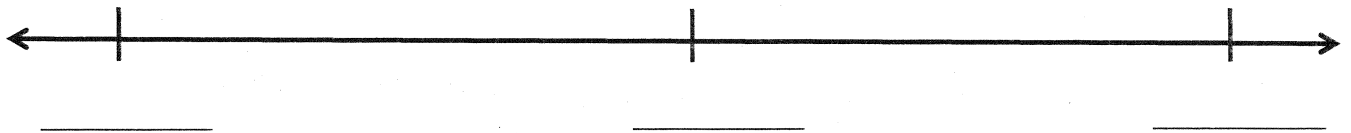
c. Explain how you rounded 27 to the nearest 10.

5) Round each number to the nearest 100.
You may use open number lines to help.

a. 310 _____

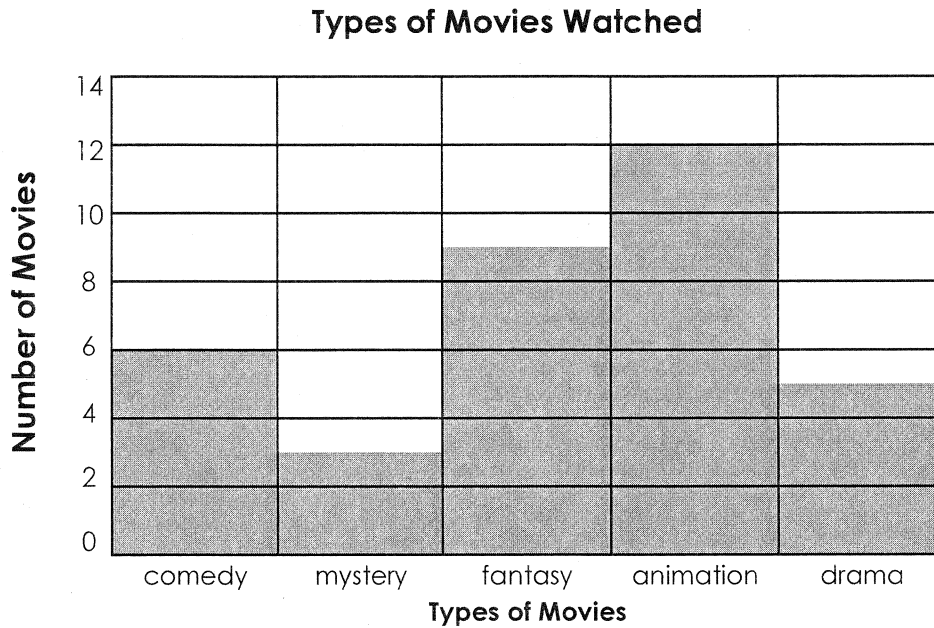


b. 680 _____



Unit 2 Cumulative Review (continued)

6) Use the information in the bar graph to answer the questions below.



a. How many comedy and mystery movies were watched all together? _____

b. How many more animation movies were watched than fantasy movies? _____

c. How many movies were watched in all? _____

d. Explain how you solved for the number of movies watched in all.

Name: *ANSWER KEY*

Date: _____

EVERYDAY MATHEMATICS—3rd Grade

Unit 2 Review: Number Stories and Arrays

UNIT

Fill in the unit box and the blanks.

1) $4 + \underline{8} = 12$

$40 + \underline{80} = 120$

$400 + \underline{800} = 1200$

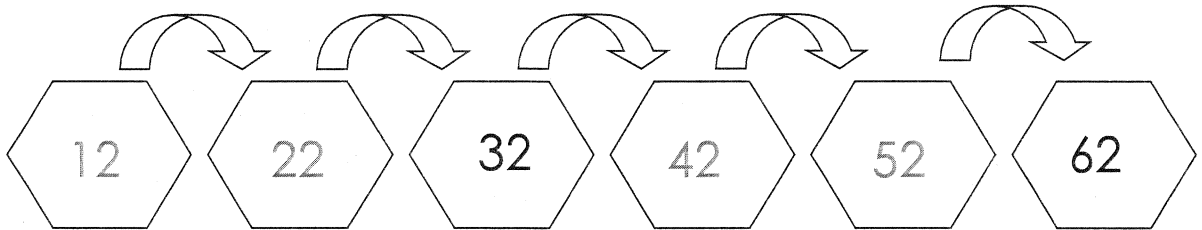
2) $16 - 9 = \underline{7}$

$26 - 9 = \underline{17}$

$76 - 9 = \underline{67}$

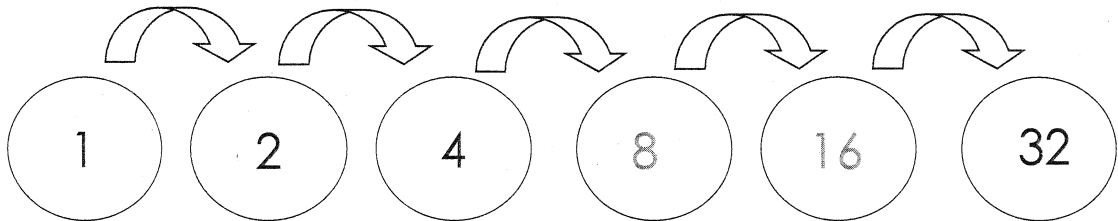
3)

Rule
$+ 10$



4)

Rule
X 2 or double

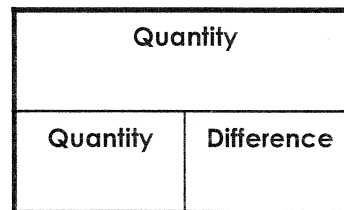
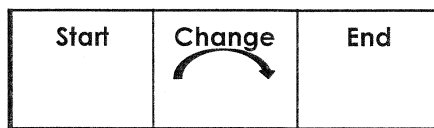
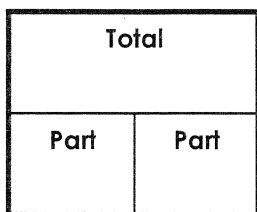


Unit 2 Review (continued)***ANSWER KEY***

For each number story, write a number model with a ?.

Then solve the number story.

You may draw diagrams, like those below, or pictures to help.



- 5) Madison ran for a total of 48 minutes on Monday and Tuesday. She ran for 30 minutes on Monday. How many minutes did she run on Tuesday?

$$48 - 30 = ? \text{ or } 30 + ? = 48$$

(number model with a ?)

Answer: 18 minutes
(unit)

How do you know your answer makes sense?

Possible answer: The minutes on Tuesday are less than the total
minutes. 18 makes the number model true.

- 6) One Mississippi alligator clutch has 41 eggs. Another Mississippi alligator clutch has 29 eggs. How many more eggs are in the first clutch?

$$41 - 29 = ? \text{ or } 29 + ? = 41$$

(number model with a ?)

Answer: 12 eggs
(unit)

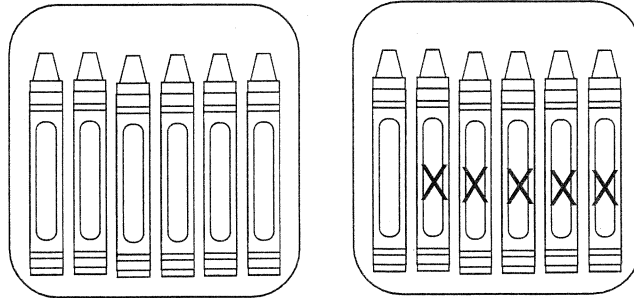
How do you know your answer makes sense?

Possible answer: The difference is smaller than the larger clutch. 12
makes the number model true.

Unit 2 Review (continued)***ANSWER KEY***

- 7) Camden read the number story below. Then he drew a picture and wrote two number models to keep track of his thinking.

Mrs. Wilson has 2 packs of crayons with 6 crayons in each pack.
She gives 5 of the crayons to her students.
How many crayons does she still have?



$$2 \times 6 = 12$$

$$12 - 5 = 7$$

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

Yes. Possible answer: They fit because Mrs. Wilson had 2 packs of 6
crayons each, and that is $2 \times 6 = 12$. Then she gave 5 crayons away,
and that is $12 - 5 = 7$. So she has 7 pencils left.

- 8) There are 6 hot dog buns in a pack.
a. How many hot dog buns are in 6 packs?
You may draw a picture to help you solve.
Circle the number model that fits the story.

$6 + 6 = ?$

$6 \times 6 = ?$

Answer: 36 hot dog buns
(unit)

- b. Explain how you solved Problem 8a.

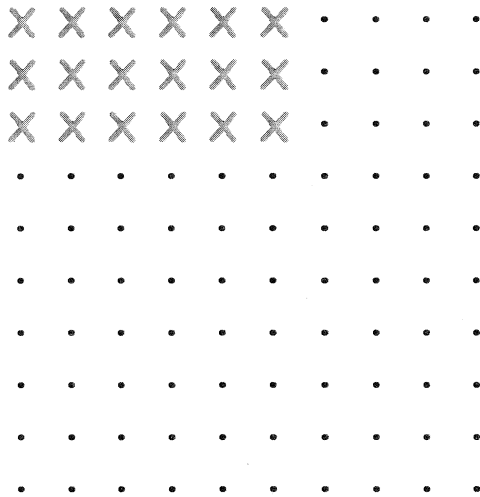
Possible answer: I skip counted by 6s and got 36.

Unit 2 Review (continued)

ANSWER KEY

9) You have 3 rows of chairs with 6 chairs in each row.
How many chairs do you have in all?

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



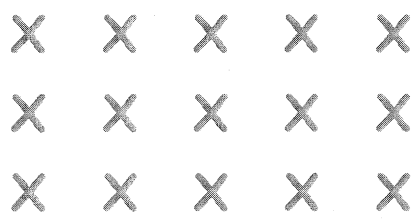
b. Circle the number model that fits the story.

$3 \times 6 = ?$

$3 + 6 = ?$

There are 18 chairs in all.
(unit)

10) Share 15 marbles equally among 3 friends.
Draw a picture to show how you shared the marbles.



Each friend gets 5 marbles.
(unit)

There are 0 marbles left over.
(unit)

Name: *ANSWER KEY*

Date: _____

EVERYDAY MATHEMATICS—3rd Grade

Unit 2 Challenge Review

1) Hudson says that knowing $4 + 6 = 10$ helps him solve this problem on his calculator.

Enter 334. Change it to 370. How? + 36

Explain how Hudson might use the basic fact.

Possible answer: Knowing $4 + 6$ can help because 6 ones added to 4 ones gets to the next ten. Hudson can add $334 + 6$ to get to 340 and then add 30 to get to 370. So $334 + 36 = 370$.

2) Read the number story and circle the pair of number models that fit the story. Then solve.

Mr. Hernandez equally shared 24 crayons among 4 groups. Sal's group found 6 more crayons. How many crayons does Sal's group have now? You may draw a picture to help.

Circle the pairs of number models that best fit the story.

A $24 \div 4 = 6$

$6 + 6 = 12$

B $24 + 4 = 28$

$28 + 6 = 34$

C $24 \times 4 = 96$

$96 + 6 = 102$

D $24 - 4 = 20$

$20 + 6 = 26$

Sal's group now has 12 crayons.

Unit 2 Challenge Review (continued) *ANSWER KEY*

3) You have 16 chairs that you want to arrange in an array.

a. Show 3 different ways you could do this on a dot grid at the right. Write number models for each array.

Number models:

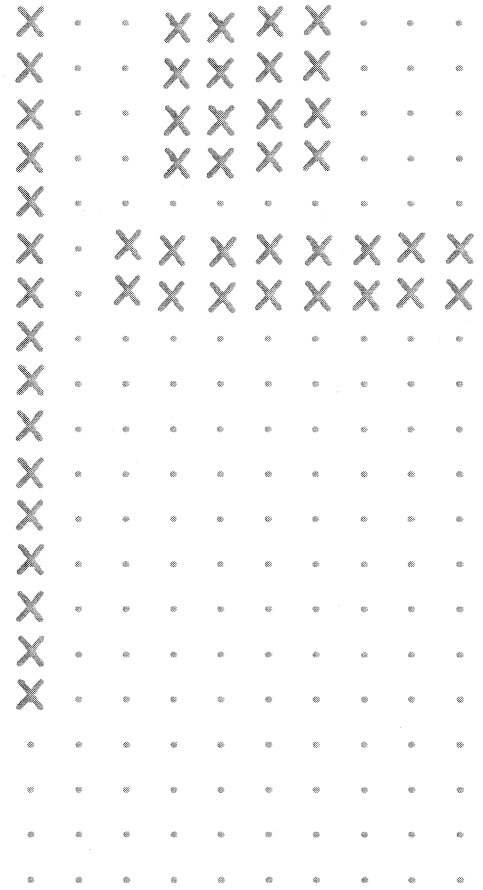
1 X 16 = 16

4 X 4 = 16

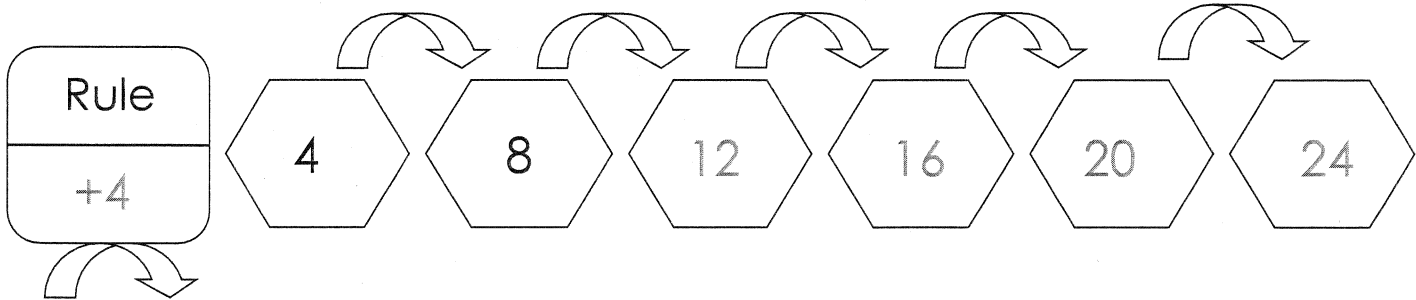
8 X 2 = 16

b. Can you make a 16-chair array with 5 rows? Explain.

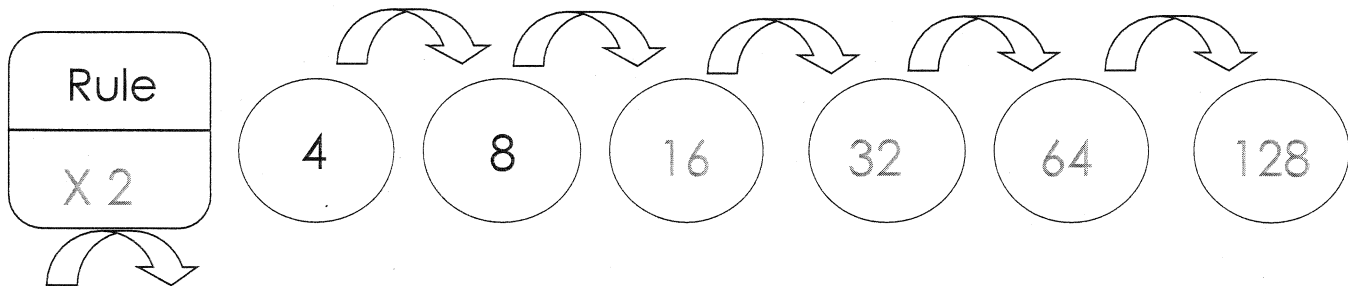
No. Possible explanation: If there were 5
rows and I put 3 in each row, I would
have 1 left over. I cannot use 5 rows.



4) Joey is making a Frames-and-Arrows problem. His first two frames show 4 and then 8. Write a rule that Joey might be using. Then fill in the frames.



Write a rule that gives different numbers for the other frames. Then fill in the frames.



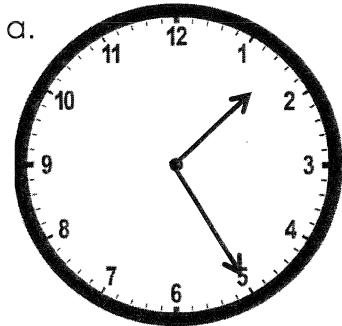
Name: *ANSWER KEY*

Date: _____

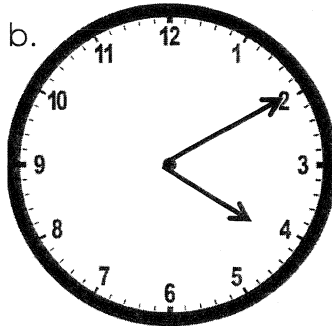
EVERYDAY MATHEMATICS—3rd Grade

Unit 2 Cumulative Review

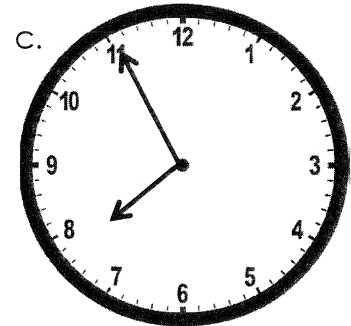
1) Record the time shown on each clock.



1 : 25



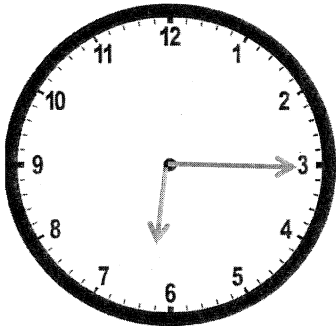
4 : 10



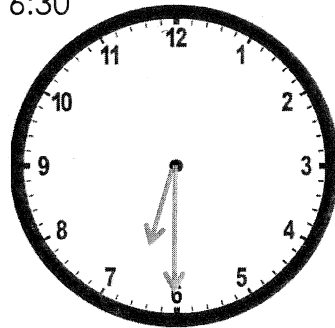
7 : 55

2) Draw the hands to show the times.

a. 6:15



b. 6:30



3) Solve.

a. $8 \times 2 = \underline{16}$

b. $\underline{9} = 3 \times 3$

c. $\underline{20} = 5 \times 4$

d. $\underline{70} = 7 \times 10$

e. $\underline{8} = 2 \times 4$

f. $3 \times 4 = \underline{12}$

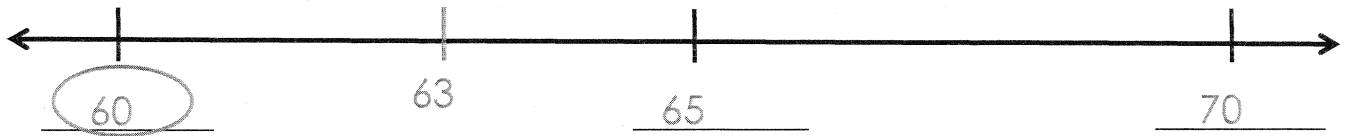
g. Explain how you solved 7×10 .

Possible answer: I skip counted by 10s seven times. I know that 7×10 is 7 tens, which is like 7 base-10 longs, or 70.

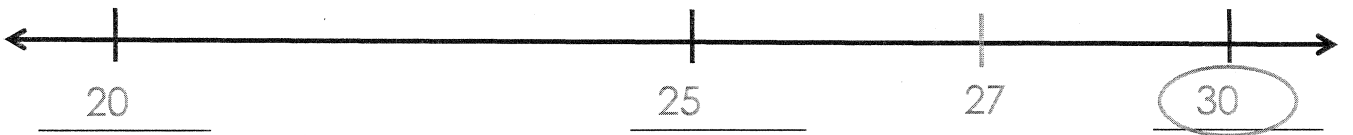
Unit 2 Cumulative Review (continued) *ANSWER KEY*

4) Round each number to the nearest 10.
You may use open number lines to help.

a. 63 60



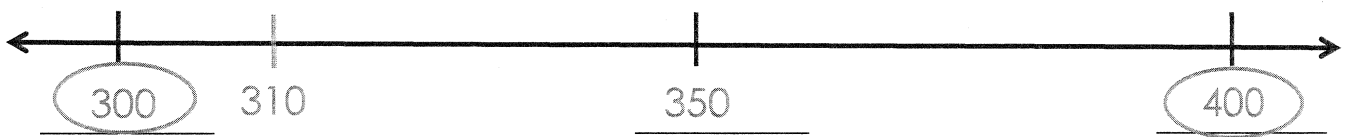
b. 27 30



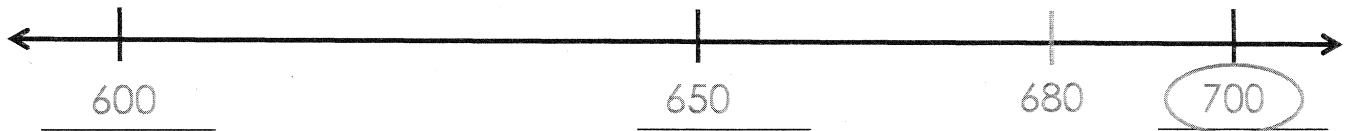
c. Explain how you rounded 27 to the nearest 10.

5) Round each number to the nearest 100.
You may use open number lines to help.

a. 310 300

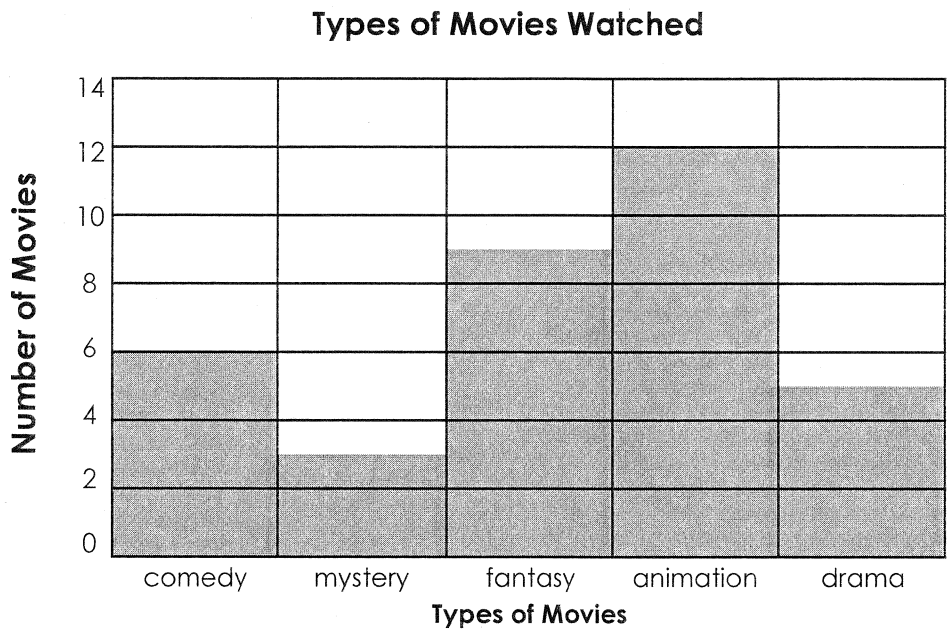


b. 680 700



Unit 2 Cumulative Review (continued) *ANSWER KEY*

6) Use the information in the bar graph to answer the questions below.

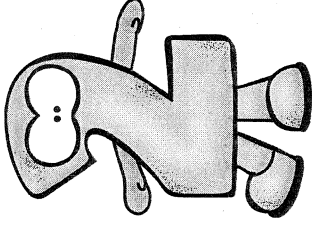


- a. How many comedy and mystery movies were watched all together? 9 movies
- b. How many more animation movies were watched than fantasy movies? 3 movies
- c. How many movies were watched in all? 35 movies
- d. Explain how you solved for the number of movies watched in all.

Possible answer: I added 6 + 3 and got 9. Then I added 9 + 9. I got 18.
Next, I added 18 + 12 and got 30. Then I added 5 more and got 35.

Grade 3

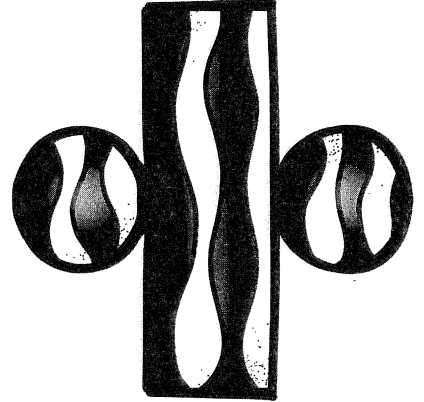
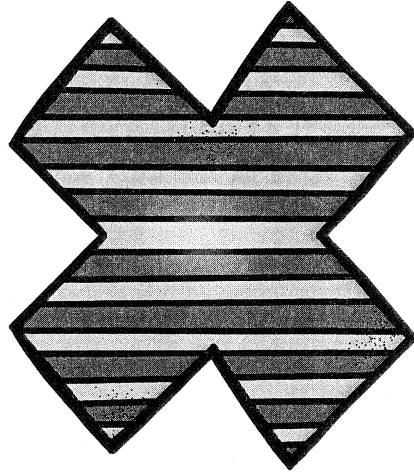
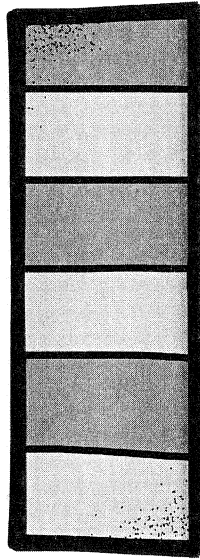
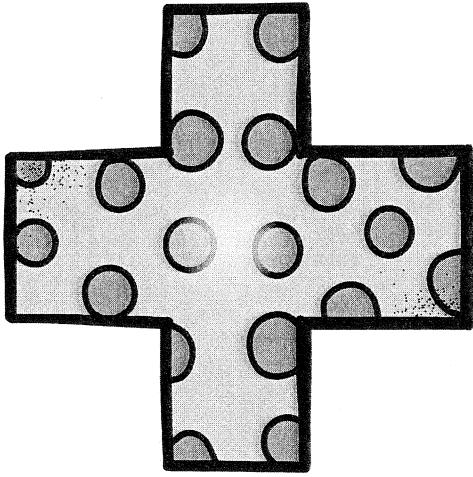
Everyday Math:



Unit

Number Stories and Arrays

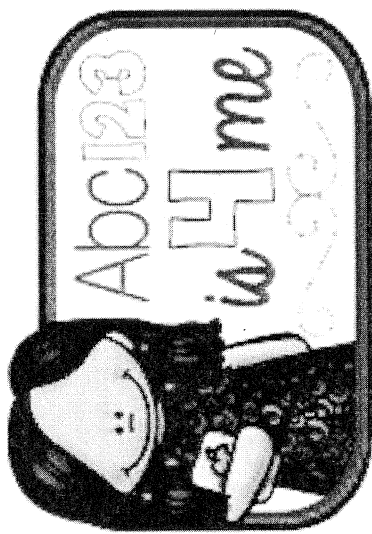
EDM
Version 4



Study Guide



Thank you!



Catherine Wiist @ [Abc123is4me](http://www.teacherspayteachers.com/Store/Abc123is4me)

<http://www.teacherspayteachers.com/Store/Abc123is4me>

(All new products are discounted for the first 48 hours!

Follow my page to see when new products are posted!)

<https://www.facebook.com/Abc123isforme>

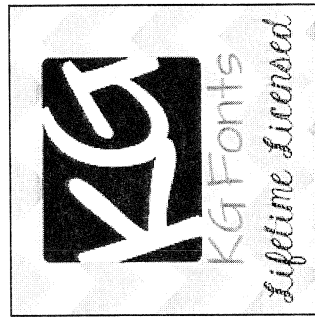
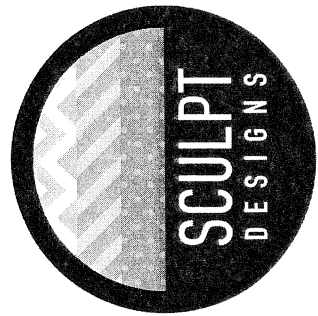
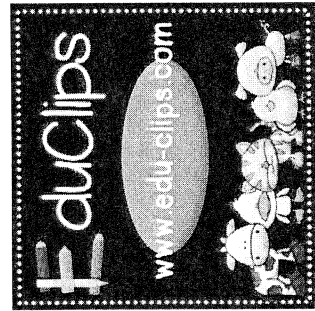
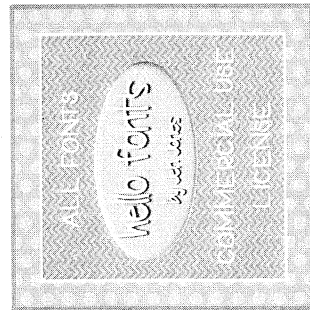
(Follow me here for Flash Freebies!!)

<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>



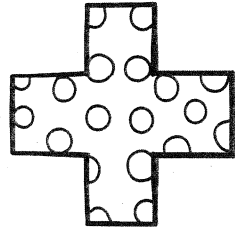
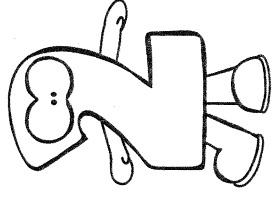
Name: _____

Test Date: ____ - ____ - ____

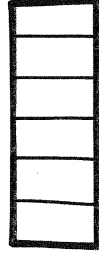
Grade 3

Everyday Math: **Unit**

Number Stories and Arrays

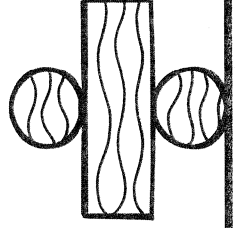
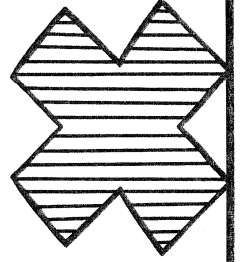


Study Guide



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?

$$4 + \underline{\quad} = 13 \qquad 16 - 7 = \underline{\quad}$$

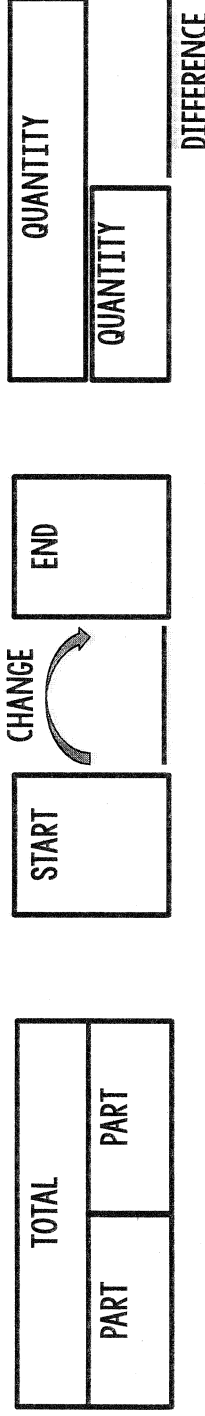
$$40 + \underline{\quad} = 130 \qquad 26 - 7 = \underline{\quad}$$

$$400 + \underline{\quad} = 1,300 \qquad 56 - 7 = \underline{\quad}$$

Lesson 2.2:

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

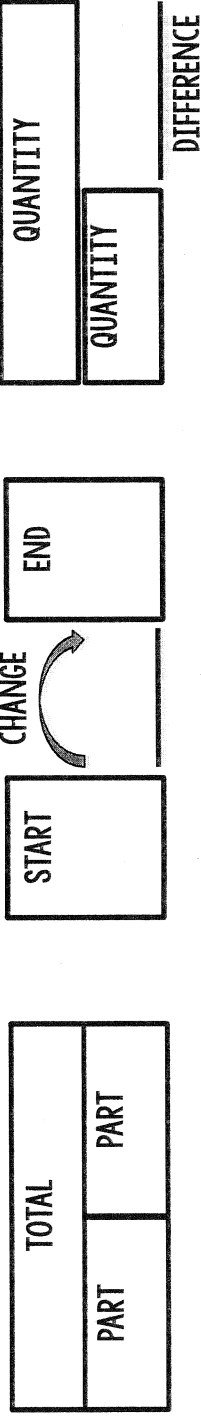
For the story problem below, write a number model with a $?$. Then solve the number story. You may draw diagrams, like these below, or pictures to help.



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: _____

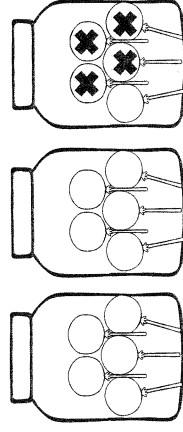
Answer: _____ ¢

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:

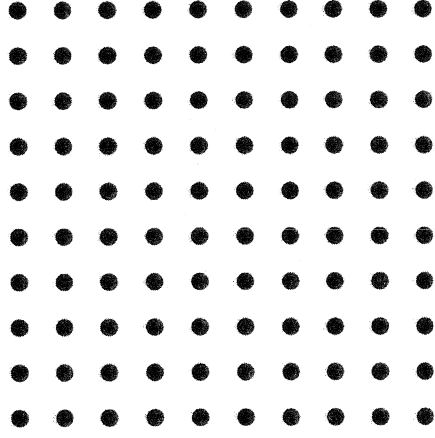
How do you solve array problems?

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. \longrightarrow
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:

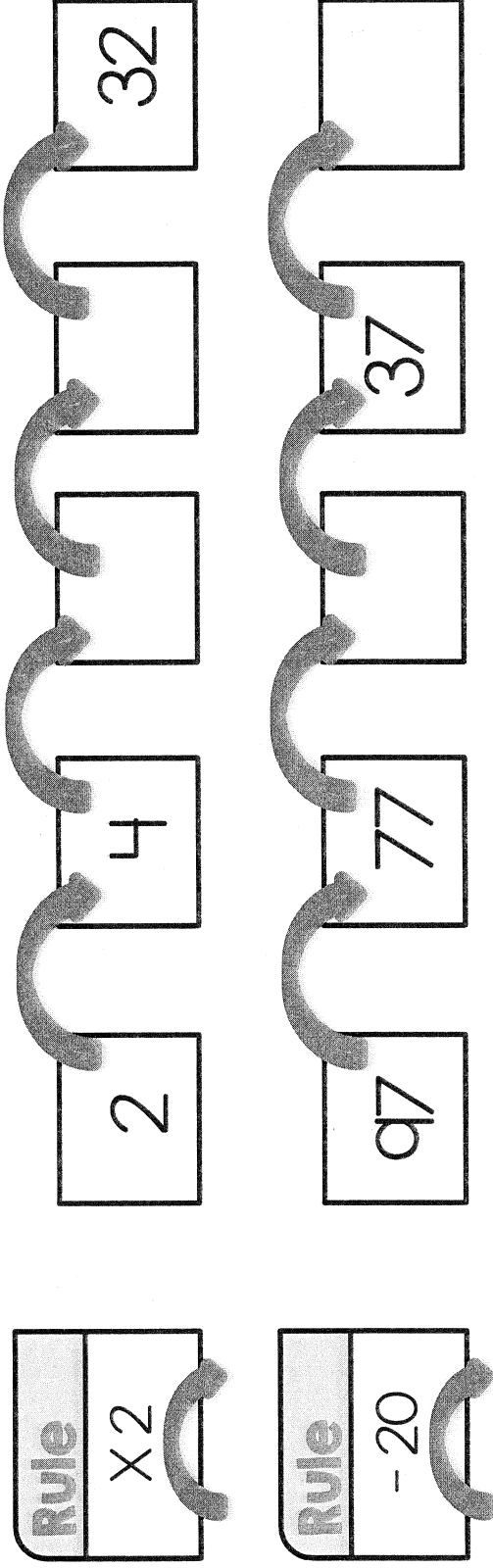
How do you identify patterns in numbers?

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? _____

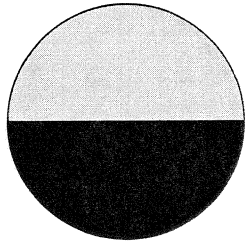
Lesson 2.11:

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

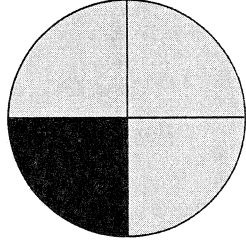


Lesson 2.12:

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



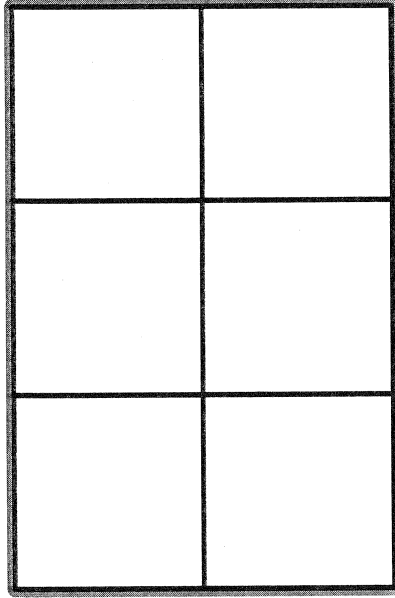
What fraction of the circle is the dark part?



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 _____.

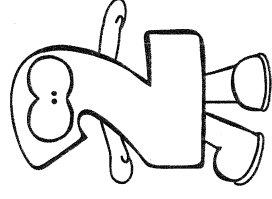
ANSWER KEY



Name: Answer Key

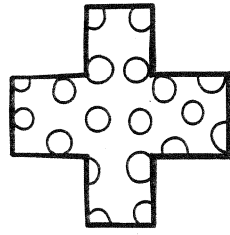
Test Date: ____ - ____ - ____

Grade 3

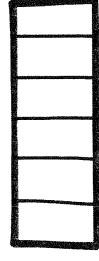


Everyday Math: **Unit**

Number Stories and Arrays

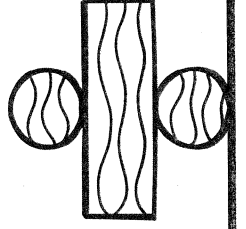
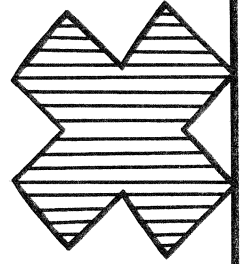


Study Guide



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?

$$4 + \underline{9} = 13 \qquad 16 - 7 = \underline{9}$$

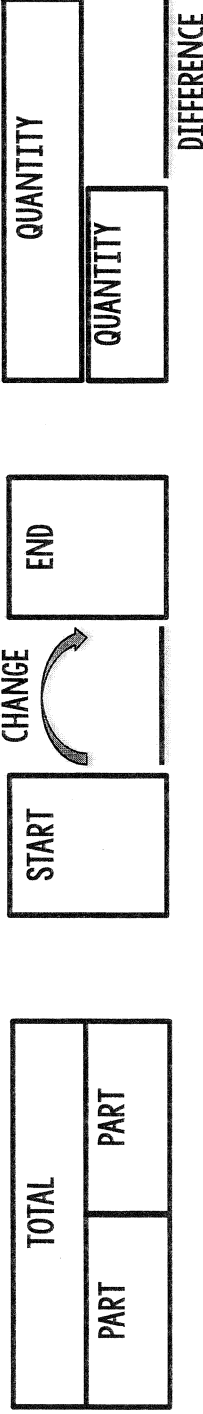
$$40 + \underline{90} = 130 \qquad 26 - 7 = \underline{19}$$

$$400 + \underline{900} = 1,300 \qquad 56 - 7 = \underline{49}$$

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:

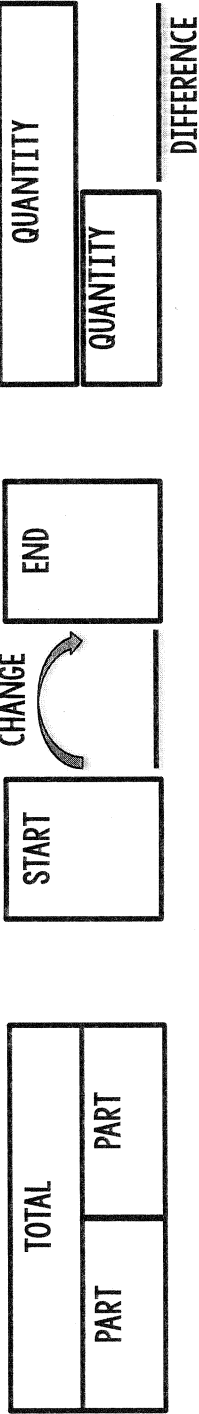
How do you know your answer makes sense? The unknown has to be smaller

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

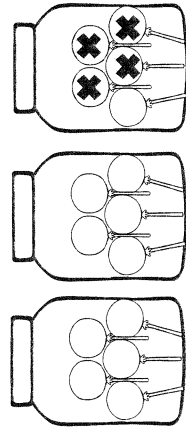
Answer: 23 ¢

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:

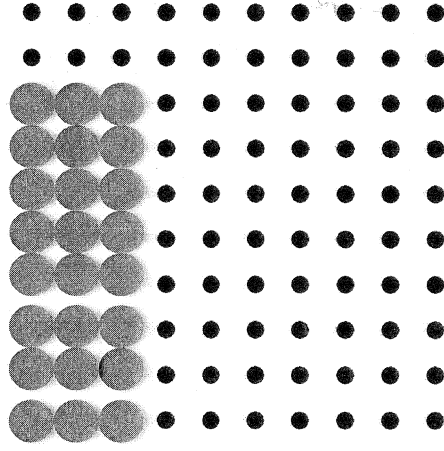
How do you solve array problems?

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. \longrightarrow
b. Circle the number model that fits the story.

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

There are 24 PUMPKINS **in all.**
(unit)

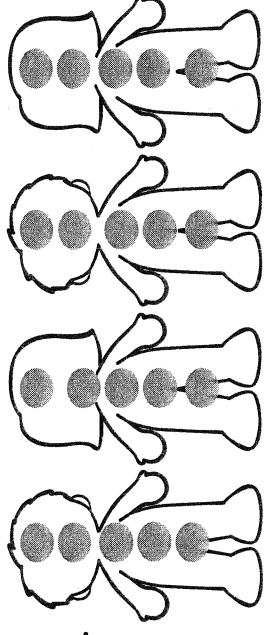


Lesson 2.8:

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)

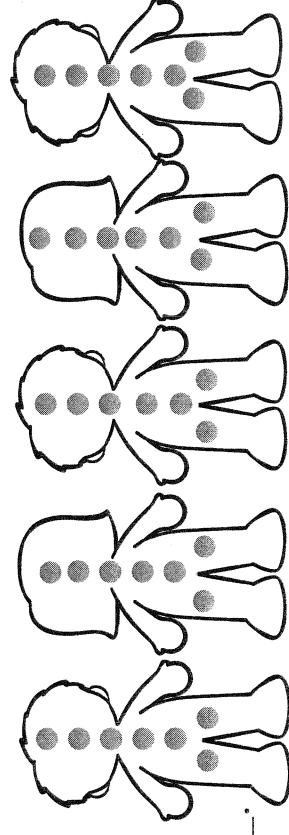
There are 0 GUMBALLS left over. (unit)

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 7 COOKIES (unit)

There are 2 COOKIES left over. (unit)

Lesson 2.10:

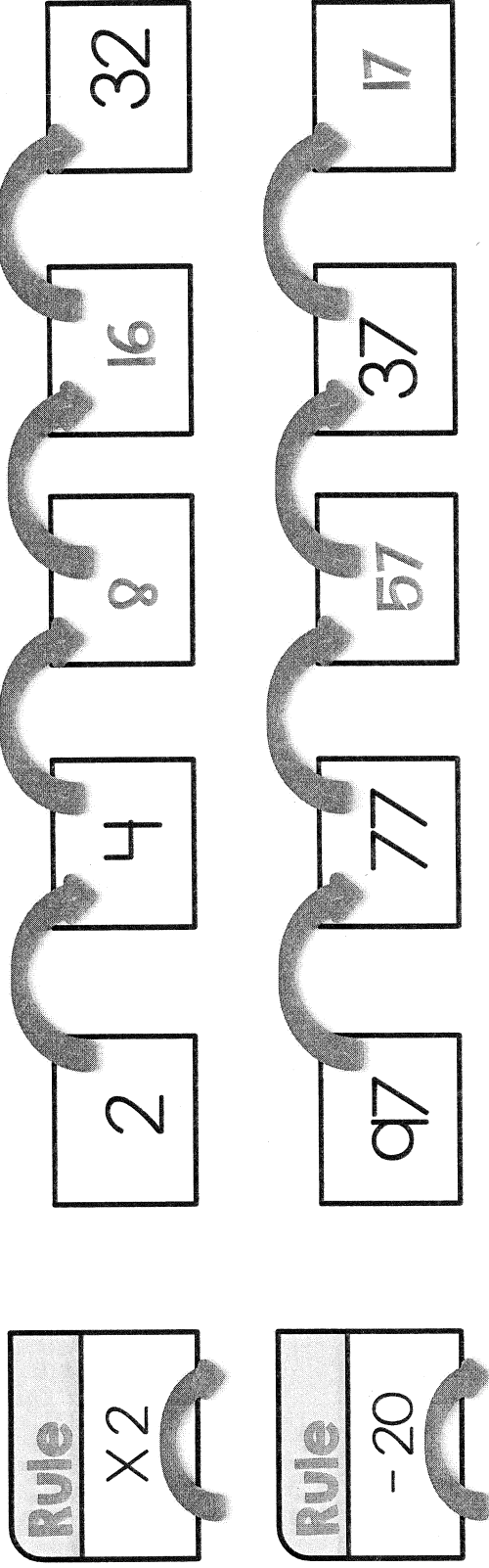
How do you identify patterns in numbers?

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

- Can Joey make an array with 2 equal rows if he has 7 counters? NO
- Can Cassidy make an array with 2 equal rows if she has 12 counters? YES
- Can Raul make an array of 2 equal rows if he has 15 counters? NO

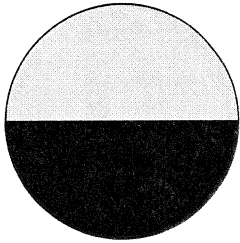
Lesson 2.11:

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



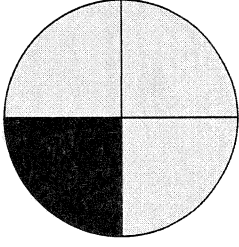
Lesson 2.12:

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



What fraction of the circle is the dark part?

One-half

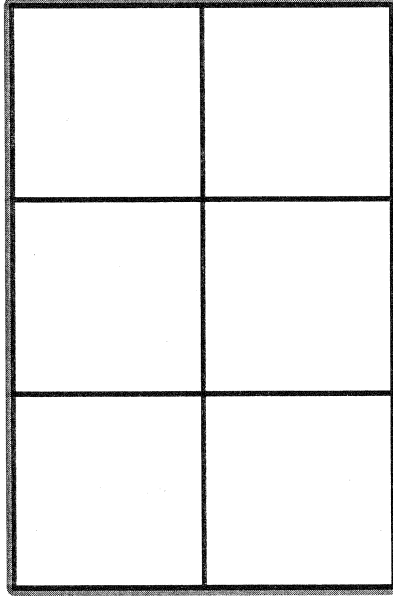


What fraction of the circle is the dark part?

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.