

 Amplify Desmos Math CALIFORNIA

Grade 1

Volume 2: Units 5–7

Student Edition

About Amplify

Amplify is dedicated to collaborating with educators to create learning experiences that are rigorous and riveting for all students. Amplify creates K–12 core and supplemental curriculum, assessment, and intervention programs for today’s students.

A pioneer in K–12 education since 2000, Amplify is leading the way in next-generation curriculum and assessment. All of our programs provide teachers with powerful tools that help them understand and respond to the needs of every student.

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Amplify gratefully acknowledges the work of distinguished program advisors from English Learners Success Forum (ELSF), who have been integral in the development of Amplify Desmos Math. ELSF is a 501(c)(3) nonprofit organization whose mission is to expand educational equity for multilingual learners by increasing the supply of high-quality instructional materials that center their cultural and linguistic assets.

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Hello Curious Mind,

Welcome to Grade 1!

You are growing and getting bigger every day!

This year in math, you'll keep growing as a mathematician too as you tackle new types of problems and work with bigger numbers.

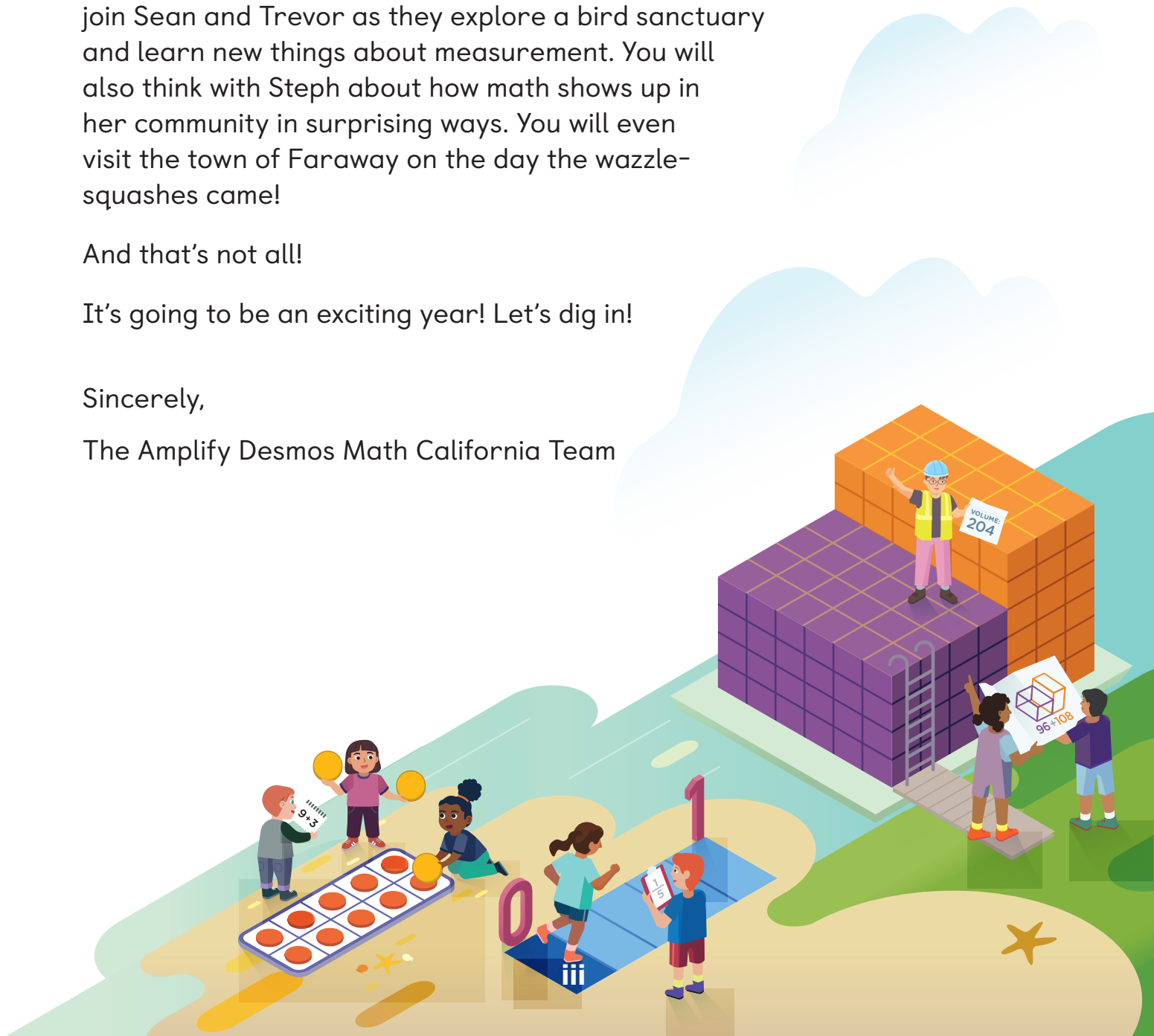
You'll also meet some kids just like you who are curious about the world around them, like Kenny who explores addition and subtraction as he learns how to play the harmonica. You'll join Sean and Trevor as they explore a bird sanctuary and learn new things about measurement. You will also think with Steph about how math shows up in her community in surprising ways. You will even visit the town of Faraway on the day the wazzle-squashes came!

And that's not all!

It's going to be an exciting year! Let's dig in!

Sincerely,

The Amplify Desmos Math California Team



Unit 1 Adding, Subtracting, and Working With Data

Let's add and subtract within 10. Let's collect and represent data.

Unit Story: Ying's New Town In this story, Ying calls her best friend to tell her about the new town she lives in.



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Sub-Unit 3 What Does the Data Tell Us? 67

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Unit 2 Addition and Subtraction Story Problems

Let's solve different types of story problems using addition and subtraction.

Unit Story: Let's Grow In this story, a group of first graders work together to grow a classroom garden.



Paul Maguire/Shutterstock.com



Joanne Dale/Shutterstock.com

Sub-Unit 1 Story Problems in Maui 87

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Pedal to the Stock/Shutterstock.com

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Kraisorn Lek/Shutterstock.com

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Paul Maguire/Shutterstock.com

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Unit 3 Adding and Subtracting Within 20

Let's add and subtract within 20 and make sense of equations.



TanitaKo/Shutterstock.com

Unit Story: Impossible In this story, Kenny reflects on his journey as a musician who is learning to play the harmonica.



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Alis Leonte/Shutterstock.com

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- 3.20 Harmonica Songs 345

Unit 4 Numbers to 99

Let's show and compare numbers to 99.

Unit Story: The Collectors In this story, Steph visits a flea market in search of Curioso cards to add to her collection and meets other collectors.



Sherri R. Camp/Shutterstock.com



hobitnjak/Shutterstock.com

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Unit 5 Adding Within 100

Let's use what we know about addition to find sums of two-digit numbers.

Unit Story: The Day of the Wazzle-Squash In this story, when wazzle-squashes fall from the sky, Carmina turns a problem into something wonderful.



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Unit 6 Measuring Lengths of Up to 120 Length Units

Let's compare, measure, and describe the lengths of objects.




Susy Baels/Shutterstock.com

Unit Story: Side by Side In this story, brothers Sean and Trevor enjoy competing with each other during a family trip to a bird sanctuary.



MT.PHOTOSTOCK/Shutterstock.com

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Unit 7 Geometry and Time

Let's describe and build shapes. Let's work with time to the hour and half hour.

Unit Story: A Potluck for Pia In this story, Pia and her family are welcomed to their new neighborhood with a potluck.



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Unit 5

Adding Within 100

Big Ideas in This Unit

CC1 Make Sense of Data CC2 Reasoning About Equality

Equal Expressions CC3 Tens and Ones

Questions for Investigation

- How can we add a one-digit number and a two-digit number?
- How can we add 2 two-digit numbers?
- When adding 2 numbers, what happens when the total number of ones is 10 or more?



Explore: Squashes at the Playground

How many wazzle-squashes are piled up at the playground?



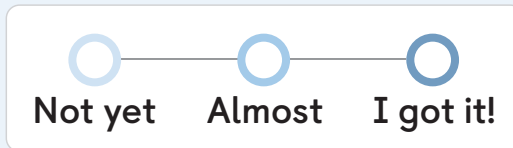
Unit Story: The Day of the Wazzle-Squash

In this story, when wazzle-squashes fall from the sky, Carmina turns a problem into something wonderful.



Watch Your Knowledge Grow

This is the math you'll explore in this unit. Rate your understanding to see how your knowledge grows!



I can . . .	Before	After
Add a number of tens or ones to a two-digit number.		
Add two-digit numbers without needing to make a new ten.		
Add 2 two-digit numbers and make a new ten where needed.		
Use models or drawings, place value strategies, and properties of operations to explain my thinking.		
Make connections between addition and subtraction to help me solve problems.		
Break apart addends in different ways to find sums.		
Add and subtract within 20, using strategies like making ten.		

Adding Without Making a Ten

✦ Unit Story: The Day of the Wazzle-Squash



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Wazzle-squashes were piled up all over the town.

How could the townsfolk find the total amount of wazzle-squashes that fell from the sky?

Name _____

Equal Expressions

Reasoning About Equality

Tens and Ones

 Building Toward 1.NBT.4,

SMP.1, SMP.2, SMP.7

Explore: Squashes at the Playground

How many wazzle-squashes are piled up at the playground?



Warm-Up



eyes on teacher



We are a math community.

Have you ever worked together with people in your communities to help fix a problem?

Discuss



What do you notice? What do you wonder?

The Day of the Wazzle-Squash

Unit Story





Name _____

Use the mayor's information to find how many wazzle-squashes could be left at the playground.

Ways to be a mathematician

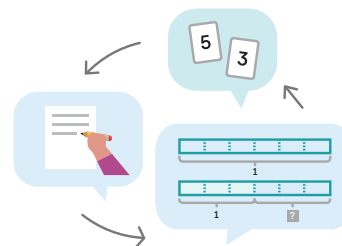
- 1 I can take my time to think about a challenging problem before trying to solve it.

○ — ○ — ○
Not yet Almost I got it!



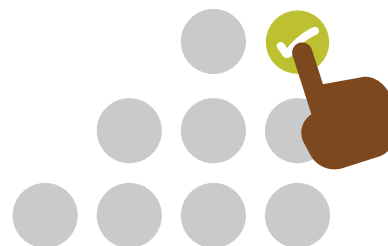
- 2 I can use numbers, words, and diagrams to make sense of math ideas and situations.

○ — ○ — ○
Not yet Almost I got it!



- 3 I can see how ideas are connected and use patterns to help solve problems.

○ — ○ — ○
Not yet Almost I got it!



Name _____

Equal Expressions Reasoning About Equality Tens and Ones 1.NBT.4, 1.OA.8, SMP.2,

SMP.7, SMP.8

From Park to Table

Let's add a number of tens or ones.



Warm-Up

1

eyes on teacher

We are a math community.

In the Unit Story, everyone helped. How are you helpful in the math classroom community?

Activity

1

Loading the Truck

Find a number of tens or a number of ones that makes each equation true. Fill in the number and circle *tens* or *ones*.

2 $25 + \underline{\hspace{2cm}} = 65$

 tens ones



3 $31 + \underline{\hspace{2cm}} = 38$

 tens ones



Loading the Truck (continued)

4 $54 + \underline{\hspace{2cm}} = 84$

_____ tens ones



5 Discuss 

How did you know if you needed to add tens or ones?

$54 + \underline{\hspace{2cm}} = 84$

I knew I needed to add _____ because I noticed _____.

Unloading the Truck

Find the number that makes each equation true.



Show your thinking.

6 $45 + 3 = \underline{\hspace{2cm}}$

7 $45 + 30 = \underline{\hspace{2cm}}$

Unloading the Truck (continued)



Show your thinking.

8

$60 + 23 = \underline{\hspace{2cm}}$

9

$6 + 23 = \underline{\hspace{2cm}}$

10Discuss 

What is different about adding ones and adding tens to a two-digit number?


- When you add ones, _____.
- When you add tens, _____.

Summary 5.02

When adding to a two-digit number, it is helpful to think about if an addend is a number of tens or a number of ones.

$$57 + 2 = \underline{\quad}$$

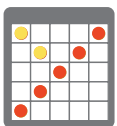
~~$$57 + 2 = 17$$~~

$$57 + 2 = \underline{59}$$
 

2 ones are being added to 57, so only the ones should change.

Practice 5.02

You'll play this Center.



Cover Up Stage 8

Let's add within 100 without composing.

Practice 5.02

Name _____

For Problems 1–4, circle the number of tens or the number of ones that makes the equation true.

1 $25 + \underline{\hspace{2cm}} = 29$

4 tens 4 ones

2 $36 + \underline{\hspace{2cm}} = 56$

2 tens 2 ones

3 $54 + \underline{\hspace{2cm}} = 84$

3 tens 3 ones

4 $42 + \underline{\hspace{2cm}} = 47$

5 tens 5 ones

For Problems 5–8, find the number that makes the equation true.

 Show your thinking.

5 $25 + 2 = \underline{\hspace{2cm}}$

6 $25 + 20 = \underline{\hspace{2cm}}$

7 $33 + 5 = \underline{\hspace{2cm}}$

8 $52 + 40 = \underline{\hspace{2cm}}$

Spiral Review

- 9 There were 5 baseballs in the basket.
Diego found 6 more baseballs on the floor.
How many baseballs are there in total?

 Show your thinking.

answer: _____ equation: _____

- 10 Circle the equation that could help you find the missing number in the equation $9 - 6 = \underline{\quad}$.

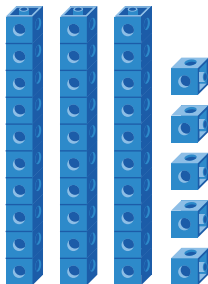
$6 + 1 = 7$

$6 + 2 = 3$

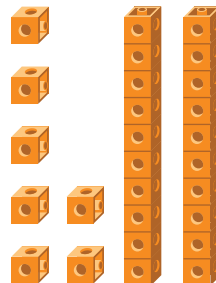
$6 + 3 = 9$

For Problems 11–14, write the number that matches the representation.

11



12



13

5 tens 4 ones _____

14

4 tens 2 ones _____

Name _____

Equal Expressions

Reasoning About Equality

Tens and Ones

1.NBT.4, 1.NBT.1, SMP.2,

SMP.6, SMP.7

Town Helpers

Let's add to find the total number of helpers.



Warm-Up



eyes on teacher



We are a math community.

What can you say to encourage someone who is working on a challenging math problem?

Activity

1

Helpers Are Everywhere

Hands-On 

- 1 Solve the problem and write an equation to show how you solved it.

Use an underline to show the answer in the equation.

Helpers Are Everywhere (continued)

On Tuesday, 63 people offered to help.

On Wednesday, 25 people offered to help.

How many people offered to help?



Show your thinking.

answer: _____

equation: _____

Gallery Tour: Finding Sums

2

Discuss 

What do you notice about how this pair solved?

I notice _____.

3

Discuss 

Ask your partner a question about how this pair solved.

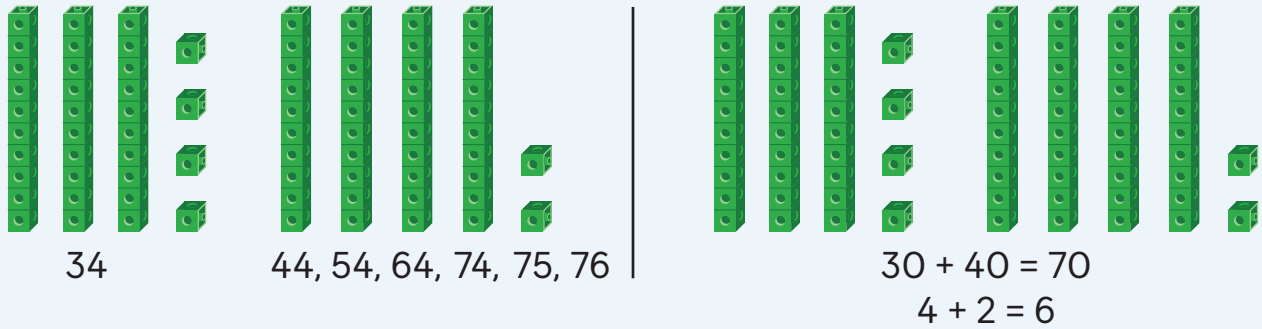
- Why do you think they _____?
- What do you think _____ means?
- Where did they get the number _____ from?



Summary 5.03

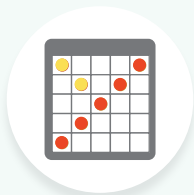
You can count on by 10 and by 1 to find the sum of 2 two-digit numbers. You can also find the total number of tens and the total number of ones in the numbers.

$$34 + 42 = \underline{76}$$



Practice 5.03

Choose from these Centers.



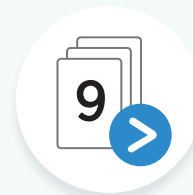
Cover Up

Stage 8



Get Your Numbers
in Order

Stage 1



Greatest of
Them All

Stage 1

Practice 5.03

Name _____

- 1 A donation center received 32 shirts on Monday. It received 24 more shirts on Tuesday. How many shirts did it receive on Monday and Tuesday?

 Show your thinking.

answer: _____ equation: _____

- 2 Find the number that makes the equation true.

$$21 + 25 = \underline{\hspace{2cm}}$$

 Show your thinking.

answer: _____

Spiral Review

- 3 There were 17 cactus plants at a plant nursery.
5 of them were sold.
How many cactus plants are left?

 Show your thinking.

answer: _____ equation: _____

- 4 Circle the equation that could help you find the missing number in the equation $10 - 8 = \underline{\hspace{2cm}}$.

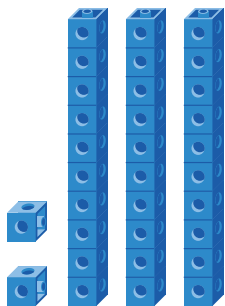
$8 + 1 = 9$

$8 + 2 = 10$

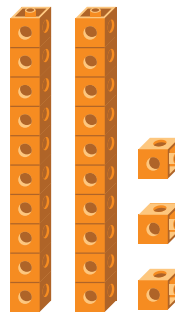
$8 + 3 = 11$

For Problems 5–8, write the number that matches the representation.

5



6



7

7 ones 4 tens _____

8

7 tens 4 ones _____

Name _____

Equal Expressions

Reasoning About Equality

Tens and Ones

1.NBT.4, SMP.4, SMP.6,

SMP.7, SMP.8

Making Squash Butter

Let's add to find the total number of pots and jars.



Warm-Up



eyes on teacher



We are a math community.

How do you share math tools when working with a partner?

Activity

1

How Many Pots?

Hands-On 

- 1 Solve the problem and write an equation to show how you solved it.

Use an underline to show the answer in the equation.

How Many Pots? (continued)

The town bakery has 34 pots.

The town restaurant has 61 pots.

How many pots do they have altogether?



Show your thinking. _____

answer: _____

equation: _____

1

Discuss 

Explain how you and your partner solved Problem 1.

- First, we _____ because _____.
- Next, we _____ because _____.

How Many Jars?

Hands-On

- 2 Solve the problem and write an equation to show how you solved it.

Use an underline to show the answer in the equation.

One family gathered 43 jars.

Another family gathered 41 jars.

How many jars did the families gather in all?

 Show your thinking.

answer: _____

equation: _____

How Many Jars? (continued)

3 Discuss

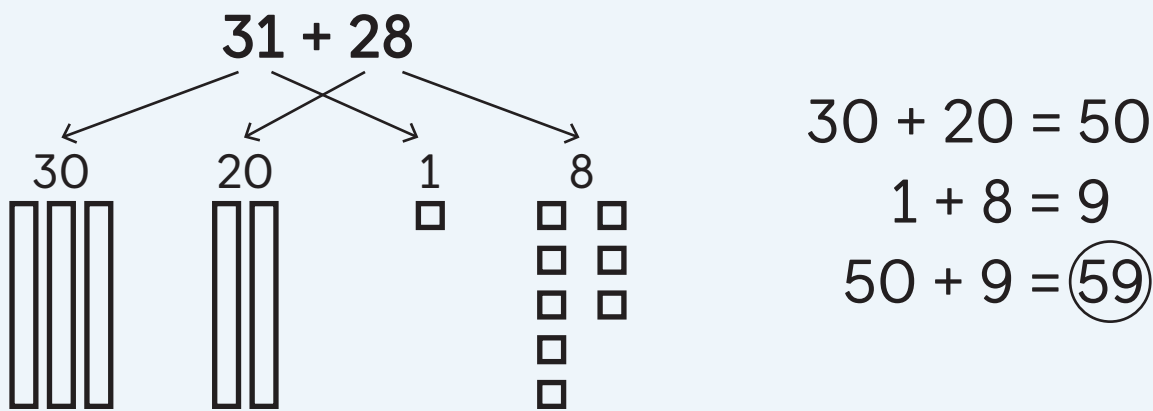
Look at another pair's representation from Problem 3 and explain how you think they solved it.

- First, I think you _____ because _____.
- Next, I think you _____ because _____.



Summary 5.04

When creating a representation to help others understand how you solved a problem, it can be helpful to include labels and more than 1 equation.



Practice 5.04

Choose from these Centers.



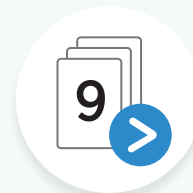
Cover Up

Stage 8



Get Your Numbers
in Order

Stage 1



Greatest of
Them All

Stage 1

Practice 5.04

Name _____

- 1** Clare has 54 collectable cards.
Diego has 25 collectable cards.
How many cards do they have altogether?

 Show your thinking.

answer: _____ equation: _____

For Problems 2–5, find the number that makes the equation true.

 Show your thinking.

2 $26 + 23 =$ _____

3 $43 + 21 =$ _____

4 $54 + 32 =$ _____

5 $28 + 71 =$ _____

Spiral Review

- 6 9 penguins are playing in the water.
7 penguins are playing on the iceberg.
How many penguins are there altogether?

 Show your thinking.

answer: _____ equation: _____

- 7 Circle the equation that could help you find the missing number in the equation $12 - 5 = \underline{\hspace{2cm}}$.

$5 + 5 = 10$

$5 + 6 = 11$

$5 + 7 = 12$

For Problems 8–11, write the number that matches the representation.

8 4 tens 6 ones _____

9 4 ones 6 tens _____

10 5 tens 3 ones _____

11 5 ones 3 tens _____



Notes:

Making a Ten: Adding One- and Two-Digit Numbers

✦ Unit Story: The Day of the Wazzle-Squash



Suparak FOTO/Shutterstock.com

The townsfolk of Faraway worked together to clean up the piles of wazzle-squashes.

How could they keep track of how many wazzle-squashes they have cleaned up?

Appreciating the Helpers

Let's add to help Carmina plan a treat for the town helpers.



Warm-Up



eyes on teacher



We are a math community.

In what ways do you help others know they are an important part of our math community?

Activity

1

How Many Wazzle-Squashes?

Hands-On

- 1 Solve the problem and write an equation to show how you solved it.

Use an underline to show the answer in the equation.

How Many Wazzle-Squashes? (continued)

Aunt Marta had a bucket of 67 wazzle-squashes.
She put in 8 more wazzle-squashes.
How many wazzle-squashes are in the bucket now?

 Show your thinking. _____

answer: _____

equation: _____

A New Ten?

Find the number that makes each equation true.

 Show your thinking.

2 $38 + 37 = \underline{\hspace{2cm}}$

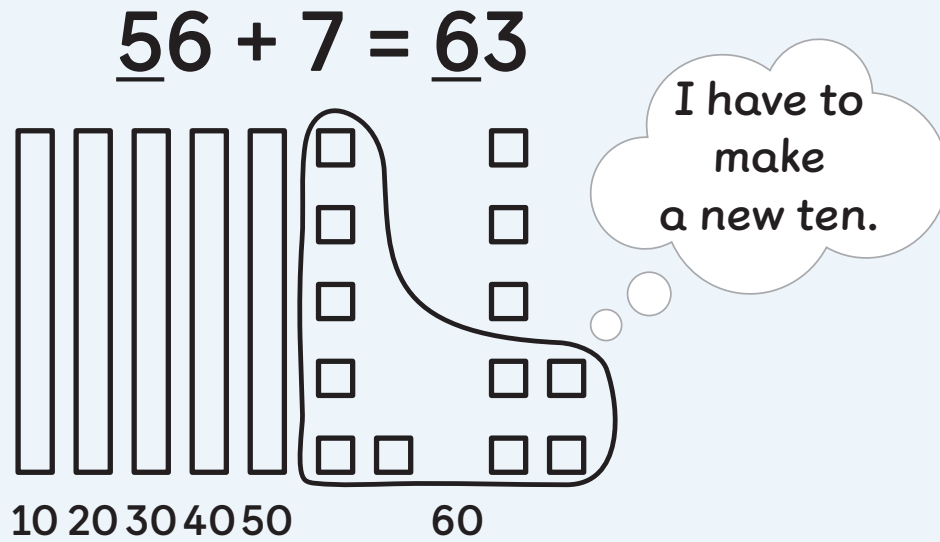
3 $43 + 6 = \underline{\hspace{2cm}}$

4 **Discuss** 

Look at Problems 2 and 3. In which problem did you make a new ten? How do you know?

Summary 5.05

When adding two-digit numbers and one-digit numbers, sometimes you have to make a new ten.



Practice 5.05

You'll play this Center.



Target Numbers Stage 1

Let's add one-digit numbers to two-digit numbers.

- 1 At first, 35 helpers came to clean up the town.
Then 4 more helpers came.
How many helpers were there altogether?

 Show your thinking.

answer: _____ equation: _____

- 2 Find the number that makes the equation true.

$$35 + 8 = \underline{\hspace{2cm}}$$

 Show your thinking.

answer: _____

Spiral Review

- 3 Jada has 15 seashells in her bucket. She has 6 white shells and some pink shells. How many pink shells does she have?

 Show your thinking.

answer: _____ equation: _____

- 4 Circle the equation that could help you find the missing number in the equation $13 - 9 = \underline{\hspace{2cm}}$.

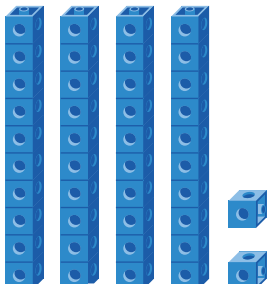
$9 + 1 = 10$

$9 + 3 = 12$

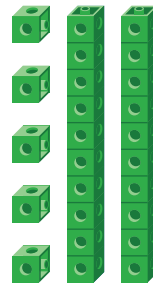
$9 + 4 = 13$

For Problems 5–8, write the number that matches the representation.

5



6



7

7 tens 6 ones _____

8

 $40 + 8$ _____

Exploring a New Math Tool

Let's try out a tool for making a ten when adding.



Warm-Up



eyes on teacher



We are a math community.

Carmina talked to her aunt when she wanted to treat the helpers. Who can you talk to about your ideas?

Activity

1

Cubes on the Mat

Hands-On

- 1 Use the Tens and Ones Mat and cubes to find the sum. Record the sum.

$$48 + 6 \underline{\hspace{2cm}}$$

- 2 **Discuss** 







Compare how you used the Tens and Ones mat to find the sum.

- I used the Tens and Ones mat by _____.
- Our strategies were similar because _____.
- Our strategies were different because _____.

Can You Make a New Ten?

Hands-On

- 3 Use the Tens and Ones Mat to find each sum.
Circle if you can make a new ten.

Addition expression	Can you make a new ten?	Sum
25 + 7	 	
5 + 61	 	
38 + 5	 	

Summary 5.06

When adding two-digit numbers and one-digit numbers, grouping the ones in an organized way can help you see if there are enough ones to make a new ten.

$$59 + 2 = \underline{61}$$



Practice 5.06

Choose from these Centers.



Cover Up

Stage 8



Get Your Numbers
in Order

Stage 1



Target Numbers

Stage 1

Name _____

For Problems 1 and 2, find the number that makes the equation true.

 Show your thinking.

1 $34 + 8 = \underline{\hspace{2cm}}$

2 $8 + 56 = \underline{\hspace{2cm}}$

- 3 Circle 2 numbers that could make a new ten when added to 45.

$$45 + \underline{\hspace{2cm}}$$

1

2

3

6

8

 Show your thinking.

Spiral Review

- 4 Shawn's mom made 13 granola bars. Shawn ate some of them and 8 bars were left. How many granola bars did Shawn eat?



Show your thinking.

answer: _____ equation: _____

For Problems 5 and 6, find the numbers that make the equations true.

5 $8 - 5 = \underline{\hspace{2cm}}$

$5 + \underline{\hspace{2cm}} = 8$

6 $8 - 4 = \underline{\hspace{2cm}}$

$4 + \underline{\hspace{2cm}} = 8$

For Problems 7–10, write the number that matches the representation.

7 5 tens and 2 tens _____

8 $50 + 2 = \underline{\hspace{2cm}}$

9 7 tens 3 ones _____

10 $7 + 30 = \underline{\hspace{2cm}}$

Name _____

Reasoning About Equality Equal Expressions Tens and Ones 1.NBT.4, 1.NBT.2.a, 1.OA.6, SMP.5,
SMP.7, SMP.8

Using What You Know

Let's use sums of 10 to add two-digit numbers and one-digit numbers.



Warm-Up



eyes on teacher

**We are a math community.**

How can you show someone you value their ideas even when their ideas are different from yours?

Activity

1

The Next Ten

Hands-On

1

Discuss

Flip a card and look at the number.

What is the next ten?

How many ones do you need to add to get to the next ten?

Explain how you know.

- The next ten is _____.
- We need to add _____ ones to get to the next ten because _____.

To the Next Ten and Beyond

Find each sum.



Show your thinking.

2

$24 + 6$ _____

3

$24 + 8$ _____

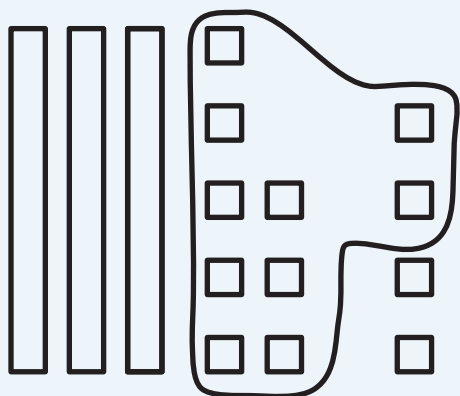
4

$47 + 6$ _____

Summary 5.07

When adding two-digit numbers and one-digit numbers, you can break apart the one-digit addend to get to the next ten and then add the remaining ones.

$$38 + 4$$



$$38 + 4$$

$$38 + 2 + 2$$

$$40 + 2 = \underline{42}$$

Practice 5.07

Choose from these Centers.



Cover Up

Stage 8



Get Your Numbers
in Order

Stage 1



Target Numbers

Stage 1

For Problems 1 and 2, find the numbers that make the equations true.

1 $26 + 4 =$ _____

$26 + 4 + 3 =$ _____

2 $43 + 7 =$ _____

$43 + 7 + 2 =$ _____

For Problems 3 and 4, find the sum. You can break apart the one-digit addend to make the next ten if it is helpful.

 Show your thinking. _____

3 $46 + 7 =$ _____

4 $6 + 68 =$ _____

Spiral Review

- 5 Priya had 6 crayons in her crayon box.
She got some more crayons from her friend.
She has 18 crayons now.
How many crayons did Priya get from her friend?



Show your thinking.

answer: _____ equation: _____

For Problems 6 and 7, find the numbers that make the equations true.

6 $10 - 6 = \underline{\hspace{2cm}}$

$6 + \underline{\hspace{2cm}} = 10$

7 $9 - 5 = \underline{\hspace{2cm}}$

$5 + \underline{\hspace{2cm}} = 9$

For Problems 8–11, write the number that matches the representation.

8 5 ones 6 tens _____

9 $9 + 20 = \underline{\hspace{2cm}}$

10 4 tens and 3 tens _____

11 $50 + 30 = \underline{\hspace{2cm}}$

Special Deliveries

Let's think about how to know if you will make a new ten before finding a sum.



We are a math community.
The community of Faraway worked together to handle a bad situation. What was the result?

Warm-Up



eyes on teacher

Activity

1

Planning a Delivery Route

- Help Carmina and Aunt Marta plan a delivery route. Shade the spaces that show expressions in which it is necessary to make a new ten to find the sum.

$45 + 5$	$8 + 71$	$22 + 6$
$9 + 63$	$57 + 8$	$4 + 33$
$90 + 7$	$6 + 14$	$88 + 4$

Planning a Delivery Route (continued)

2

Discuss 

Explain how you and your partner decided which spaces to shade in Problem 1.

- We thought about _____.
- We looked at _____.



What Could the Number Be?

Hands-On

Help Carmina and Aunt Marta find the smudged one-digit number.

 Show your thinking. _____

- 3 The sum has a new ten.
What could the number be?

$$34 + \text{smudge}$$

answer: _____

What Could the Number Be? (continued)

 Show your thinking.

- 4 The sum does *not* have a new ten.
What could the number be?

$$\text{[blob]} + 16$$

answer: _____

- 5 The sum does *not* have a new ten.
What could the number be?

$$53 + \text{[blob]}$$

answer: _____

- 6 The sum has a new ten.
What could the number be?

$$\text{[blob]} + 28$$

answer: _____

Summary 5.08

If the total number of ones in an addition expression is 10 or more, you will make a new ten when finding the sum. If the total number of ones is less than 10, you will not make a new ten when finding the sum.

$$5 + 67$$

$5 + 7 = 12$. 12 ones is enough to make a new ten.

$$5 + 63$$

$5 + 3 = 8$. 8 ones is not enough to make a new ten.

Practice 5.08

You'll play this Center.



Target Numbers Stage 2

Let's add tens or ones to two-digit numbers.

Name _____

- 1 Circle 3 numbers that would make a sum with a new ten.

$53 + \underline{\hspace{2cm}}$

1 2 3 4 5 6 7 8 9

- 2 Circle 4 numbers that would make a sum with a new ten.

$4 + \underline{\hspace{2cm}}$

50 51 52 53 54 55 56 57 58 59

For Problems 3 and 4, find the number that makes the equation true.

 Show your thinking.

3 $5 + 63 = \underline{\hspace{2cm}}$

4 $49 + 7 = \underline{\hspace{2cm}}$

Spiral Review

- 5 Han baked 9 muffins on Saturday.
He baked more muffins on Sunday.
In total, he baked 18 muffins.
How many muffins did Han bake on Sunday?



Show your thinking.

answer: _____ equation: _____

For Problems 6 and 7, find the numbers that make the equations true.

6 $13 - 7 = \underline{\hspace{2cm}}$

$6 + \underline{\hspace{2cm}} = 13$

7 $15 - 8 = \underline{\hspace{2cm}}$

$8 + \underline{\hspace{2cm}} = 15$

For Problems 8–13, write the number that matches the representation.

8 3 tens and 2 tens _____

9 $9 + 20$ _____

10 2 tens 14 ones _____

11 $50 + 30$ _____

12 $30 + 10$ _____

13 $10 + 40$ _____

Making a Ten: Adding Within 100

✦ Unit Story: The Day of the Wazzle-Squash



smileyunita/Shutterstock.com

The Wazzle-Squash Festival was a success!

What are some different ways you could help the mayor find how many adults and children attended the festival altogether?

Name _____

Reasoning About Equality

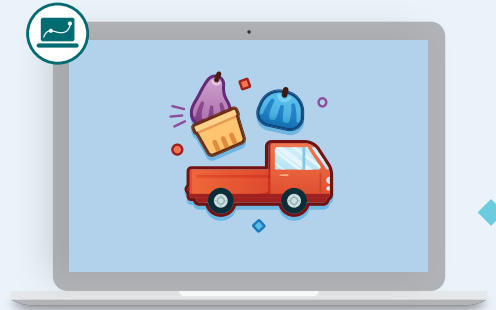
Equal Expressions

Tens and Ones

1.NBT.4, SMP.6, SMP.7

Wazzle-Squash Crisps

Let's find the total number of wazzle-squash crisps.



We are a math community.
We use math in many ways in our classroom. How do you use math outside of the classroom?

Warm-Up

1

eyes on teacher

Activity

1

Adding Up Crisps

Find each sum.

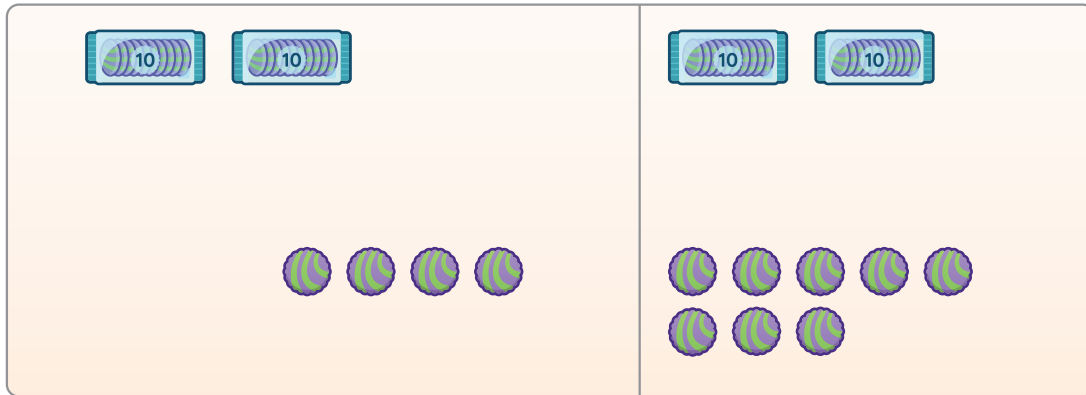
i Show your thinking.

2 $34 + 52 =$ _____

Adding Up Crisps (continued)

 Show your thinking. _____

3 $24 + 28 =$ _____



4 Discuss 

How is finding each sum alike?

How is finding each sum different?

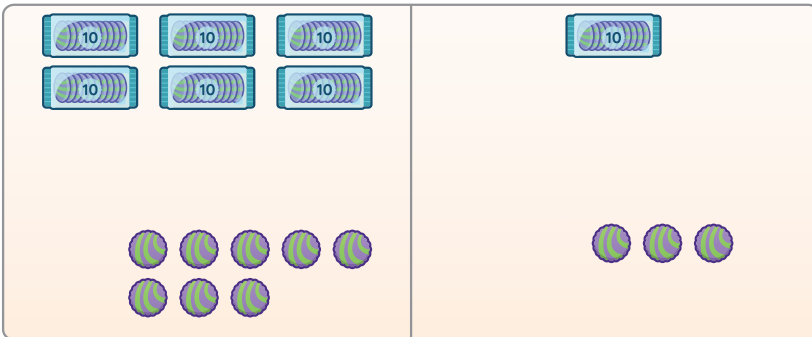
- One thing that was alike was _____.
- One thing that was different was _____.

Packing It Up

5 Find the sum.

i Show your thinking.

$$68 + 13 = \underline{\hspace{2cm}}$$



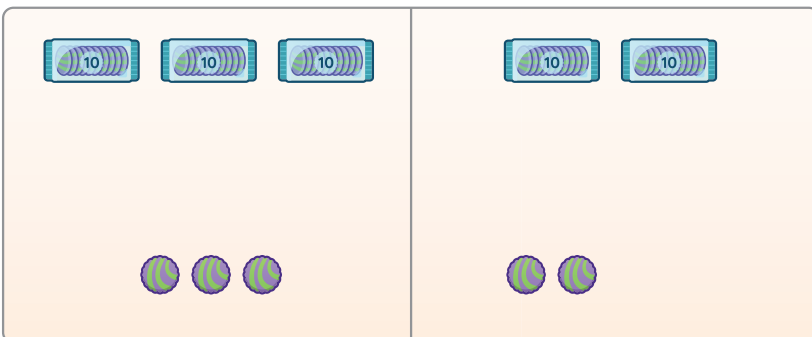
6 Discuss

Did you make a new ten? Why or why not?

7 Find each sum.

i Show your thinking.

$$33 + 22 = \underline{\hspace{2cm}}$$

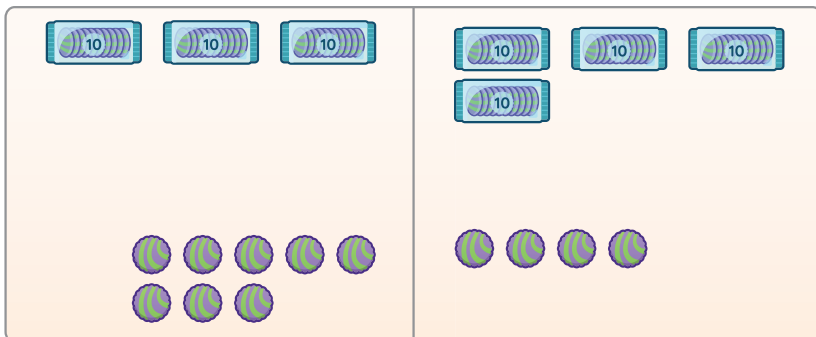


Packing It Up (continued)

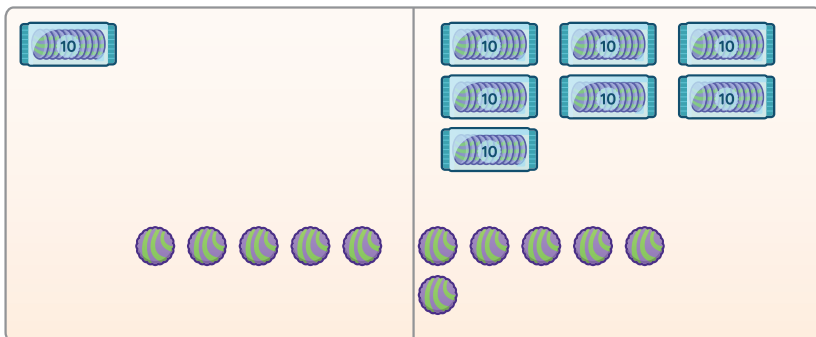
7 Find each sum.

 Show your thinking.

$$38 + 44 = \underline{\hspace{2cm}}$$



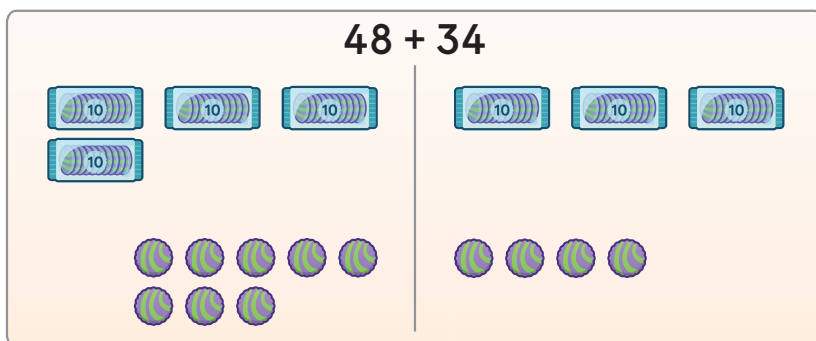
$$15 + 76 = \underline{\hspace{2cm}}$$



8

Discuss 

What strategy would you use to find the sum?



Summary 5.09

When adding 2 two-digit numbers, sometimes you need to make a new ten. There are many strategies you can use to find the sums of 2 two-digit numbers.

$$27 + 34$$

Break apart 1 addend and count on by tens and ones.

27, 37, 47, 57, 58, 59, 60, 61

Find the total amount of tens and the total amount of ones.

$$\begin{aligned} 20 + 30 &= 50 \\ 7 + 4 &= 11 \\ 50 + 11 &= 61 \end{aligned}$$

Practice 5.09

Choose from these Centers.



Cover Up

Stage 8



Target Numbers

Stage 1



Target Numbers

Stage 2

Practice 5.09

Name _____

- 1 Clare made 24 bags of sweet potato crisps.
She also made 13 bags of taro crisps.
How many bags of crisps did Clare make altogether?

 Show your thinking.

answer: _____ equation: _____

- 2 Find the number that makes the equation true.

$$26 + 27 = \underline{\hspace{2cm}}$$

 Show your thinking.

Spiral Review

- 3 There are 16 yellow tulips and 5 white tulips in the garden.
How many more yellow tulips are there than white tulips?

 Show your thinking.

answer: _____ equation: _____

For Problems 4 and 5, find the numbers that make the equations true.

4 $14 - 8 = \underline{\hspace{2cm}}$

$8 + \underline{\hspace{2cm}} = 14$

5 $12 - 6 = \underline{\hspace{2cm}}$

$6 + \underline{\hspace{2cm}} = 12$

For Problems 6–11, write the number that matches the representation.

6 5 tens 24 ones _____

7 56 ones _____

8 32 ones 2 tens _____

9 3 tens 9 ones _____

10 $73 + 10$ _____

11 $10 + 65$ _____

Sending Invitations

Let's think about the total number of tens when adding 2 two-digit numbers.



Warm-Up



eyes on teacher



I can be all of me in math class.

When have you been a creative thinker in math class?

Activity

1

Stacks of Invitations

Find each sum.



Show your thinking.

Stack 1

1 $34 + 23$ _____

Stacks of Invitations (continued)

 Show your thinking.

Stack 2

 $14 + 76$ _____

Stack 3

 $25 + 67$ _____

 Discuss 

Explain to your partner how you found the sum for Problem 3.

Thinking About Tens

Hands-On 

Find each sum.



Show your thinking.

5

$24 + 41$ _____

Thinking About Tens (continued)

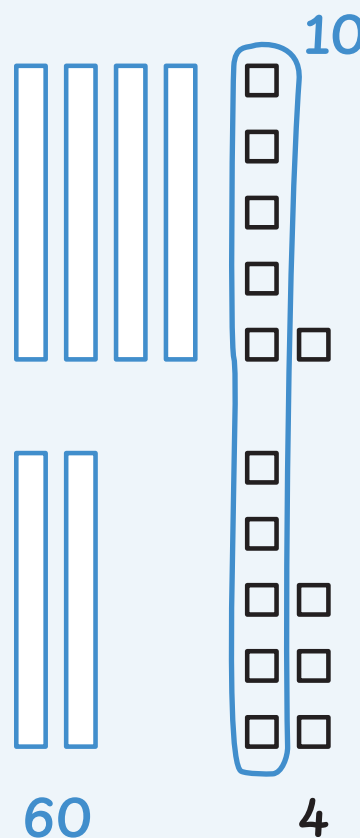
6 $35 + 29$ _____

- 7 Explain how you found the number of tens in the sum for Problem 6.

Summary 5.10

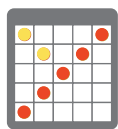
The number of tens in a sum is made up of the total number of tens in each addend and, sometimes, a ten made from the ones in both addends.

$$46 + 28 = 74$$



Practice 5.10

You'll play this Center.



Cover Up Stage 9

Let's add within 100.

For Problems 1–3, find the number that makes the equation true.

 Show your thinking.

1 $35 + 13 =$ _____

2 $35 + 15 =$ _____

3 $35 + 17 =$ _____

- 4 Circle 5 numbers that could make a new ten when added to 35.

$35 +$ _____

11 12 13 14 15 16 17 18 19

Spiral Review

- 5 There were 13 volunteers at the police station on Monday and 8 volunteers on Tuesday. How many *fewer* volunteers were there on Tuesday than Monday?

 Show your thinking.

answer: _____ equation: _____

For Problems 6 and 7, find the numbers that make the equations true.

6 $13 - 8 =$ _____

$8 +$ _____ $= 13$

7 $14 - 9 =$ _____

$9 +$ _____ $= 14$

For Problems 8–13, write the number that matches the representation.

8 53 ones 1 ten _____

9 15 ones 1 ten _____

10 4 tens 42 ones _____

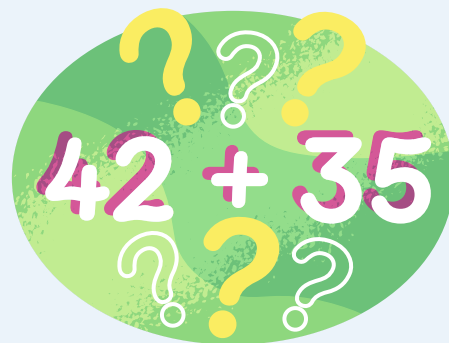
11 $8 + 60$ _____

12 $48 + 10$ _____

13 $10 + 83$ _____

Thinking About the Sum

Let's use what we know about tens to think about sums.



Warm-Up



eyes on teacher



We are a math community.

What should partner work look like and sound like in our math community?

Activity

1

How Many Tens?

Tell how many tens will be in the sum. Explain your thinking to your partner.

1 $38 + 25$

Discuss

There will be _____ tens in the sum because _____.

How Many Tens? (continued)

2 $33 + 24$

Discuss 

There will be _____ tens in the sum because _____.



What I Know About the Sum

3 Discuss

Think about the addends in the expression $24 + 47$.
How many tens will be in the sum? How do you know?

There will be _____ tens in the sum because _____.

4 Find the sum.

$$24 + 47 \text{ _____}$$

 Show your thinking. _____

What I Know About the Sum (continued)

- 5 Circle to show if the sum you found in Problem 4 has the number of tens you thought it would have in Problem 3.



- 6 Discuss 

Did Problem 3 help you with Problem 4?
Why or why not?

- Yes, Problem 3 helped me with Problem 4 because _____.
- No, Problem 3 did not help me with Problem 4 because _____.

Summary 5.11

When adding 2 two-digit numbers, it can be helpful to think about the total number of tens in the sum to know if an answer makes sense.

$$52 + 29$$

I know the sum should have 8 tens.

I will try
adding again.

First try: My answer is 71.

My answer
makes sense.

Second try: My answer is 81.

Practice 5.11

Choose from these Centers.



Cover Up

Stage 9



Target Numbers

Stage 1



Target Numbers

Stage 2

Practice 5.11

Name _____

For Problems 1–4, circle to make the statement true.

1 The sum of $33 + 32$ will be _____ 60.
greater than less than equal to

2 The sum of $35 + 31$ will be _____ 70.
greater than less than equal to

3 The sum of $38 + 36$ will be _____ 70.
greater than less than equal to

4 The sum of $36 + 34$ will be _____ 70.
greater than less than equal to

For Problems 5 and 6, find the number that makes the equation true.

 Show your thinking.

5 $41 + 35 =$ _____

6 $27 + 36 =$ _____

Spiral Review

- 7 Clare picked 15 roses and 9 tulips from the garden. How many more roses did she pick than tulips?

 Show your thinking.

answer: _____ equation: _____

- 8 Find the number that makes the equation true.

$$7 - 4 = \underline{\hspace{2cm}}$$

 Show your thinking.

answer: _____

For Problems 9–12, write the number that matches the representation.

9 28 ones 3 tens _____ 10 4 tens 6 ones _____

11 6 tens 24 ones _____ 12 $8 + 60$ _____

Name _____

Reasoning About Equality

Equal Expressions

Tens and Ones

1.NBT.4, 1.NBT.1, SMP.6, SMP.7

How Many Bags?

Let's help Carmina find how many bags of wazzle-squash crisps she made.



Warm-Up



eyes on teacher



We are a math community.

What can mathematicians do when they have different ideas?

Activity

1

Wazzle-Squash Crisps

Carmina began to solve $25 + 48$. Use Carmina's work to answer the problems.

Carmina's work

$$\begin{array}{r}
 25 + 48 \\
 \swarrow \quad \searrow \\
 20 \quad 5 \\
 20 + 48 = 68
 \end{array}$$

1 Discuss

Explain how Carmina started to solve the problem.

- First, Carmina _____.
- Next, she _____.

Wazzle-Squash Crisps (continued)

2

Hands-On Complete Carmina's work to find the sum $25 + 48$.

$25 + 48$ _____

**Show your thinking.** _____

$$\begin{array}{r} 25 + 48 \\ \swarrow \quad \searrow \\ 20 \quad 5 \end{array}$$

$$20 + 48 = 68$$

Choosing Strategies

Hands-On 

Find the sum using any strategy. Break apart an addend to make a new ten if it is helpful.



Show your thinking.

3

$57 + 38$ _____

4

$19 + 66$ _____

Choosing Strategies (continued)



Show your thinking.

5

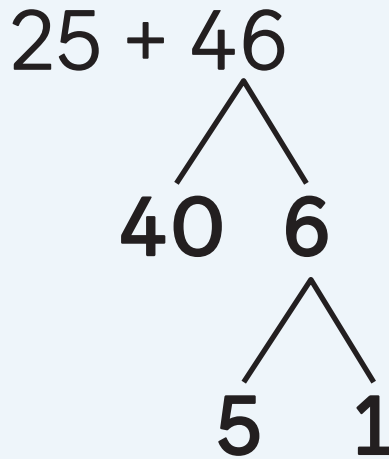
$46 + 43$ _____

6

Did you use the same strategy to solve Problems 4 and 5? Why or why not?

Summary 5.12

Breaking apart an addend to make a new ten is one strategy for finding a sum.

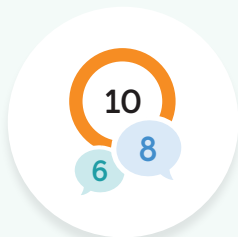


Add 5 to
make a ten

$$\begin{array}{l} 25 + 40 = 65 \\ \longrightarrow 65 + 5 = 70 \\ 70 + 1 = \underline{71} \end{array}$$

Practice 5.12

You'll play this Center.



How Close? Stage 3

Let's add numbers within 100.

Practice 5.12

Name _____

- 1 At a plant nursery, there are 39 flower plants and 24 citrus plants.
How many plants are there in the nursery?

 Show your thinking.

answer: _____ equation: _____

- 2 Find the number that makes the equation true.

$$49 + 13 = \underline{\hspace{2cm}}$$

 Show your thinking.

answer: _____

Spiral Review

- 3 Han had 15 pumpkin seeds.
He gave some to his friend.
Now he has 8 seeds left.
How many seeds did he give to his friend?

 Show your thinking.

answer: _____ equation: _____

- 4 Find the number that makes the equation true.

$$10 - 7 = \underline{\hspace{2cm}}$$

 Show your thinking.

answer: _____

For Problems 5–8, write the number that matches the representation.

5 5 tens 31 ones _____ 6 30 ones 2 tens _____

7 4 tens 32 ones _____ 8 $50 + 26$ _____

Name _____

Reasoning About Equality

Equal Expressions

Tens and Ones

1.NBT.4, 1.OA.3, SMP.6,

SMP.7, SMP.8

Wazzle-Squash Festival

Let's find sums by changing the addends.



Warm-Up



eyes on teacher



I can be all of me in math class.
How are you and a character from the Unit Story alike?

Activity

1

Wazzle Toss

- 1 Solve the problem and write an equation to show how you solved it.

Use an underline to show the answer in the equation.

Carmina caught the ball 37 times.

Aunt Marta caught the ball 38 times.

How many times did they catch the ball in all?



Show your thinking.

answer: _____

equation: _____

Wazzle Toss (continued)

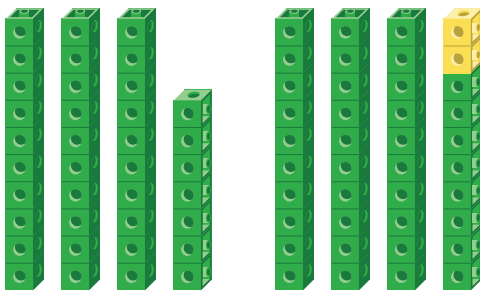
2

Discuss 

Look at the strategy Carmina used to solve Problem 1.
What do you notice? What do you wonder?

I notice _____. I wonder _____.

Carmina's work



$$37 + 38 = \underline{\quad}$$

$$37 + 40 = 77$$

$$77 - 2 = 75$$

answer: 75 catches

equation: $37 + 38 = 75$

Changing an Addend Tour

You will be taking a tour of posters showing addition. Circle to show if you *agree* or *disagree* with the steps for solving on each poster.

3

Poster A



4

Poster B



5

Poster C



6

Poster D



7

Poster E



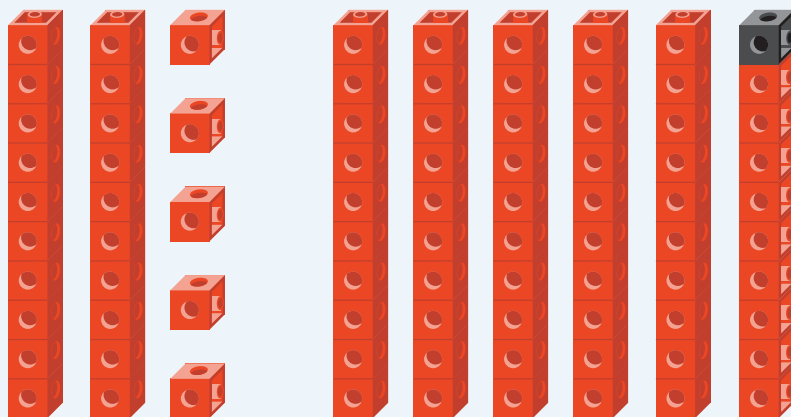
8

Poster F



Summary 5.13

Just like with smaller numbers, sometimes it can be helpful to change 1 or both addends to a new number to help you find the sum.



$$25 + 59$$

$$25 + 60 = 85$$

$$85 - 1 = 84$$

Practice 5.13

Choose from these Centers.



Cover Up

Stage 9



How Close?

Stage 3



Target Numbers

Stage 3

Practice 5.13

Name _____

- 1 For a cup stacking game, Diego uses 49 red cups and 32 green cups.
How many cups does Diego use altogether?

 Show your thinking.

answer: _____ equation: _____

For Problems 2–5, find the number that makes the equation true.

 Show your thinking.

2 $59 + 27 =$ _____

3 $34 + 28 =$ _____

4 $49 + 39 =$ _____

5 $47 + 37 =$ _____

Spiral Review

- 6 There were 16 goldfish in a tank.
Some of them were sold.
Now there are 9 goldfish in the tank.
How many goldfish were sold?

 Show your thinking.

answer: _____ equation: _____

- 7 Find the number that makes the equation true.

$$13 - 6 = \underline{\hspace{2cm}}$$

 Show your thinking.

answer: _____

For Problems 8–11, write the number that matches the representation.

8 4 tens 24 ones _____ 9 41 ones 2 tens _____

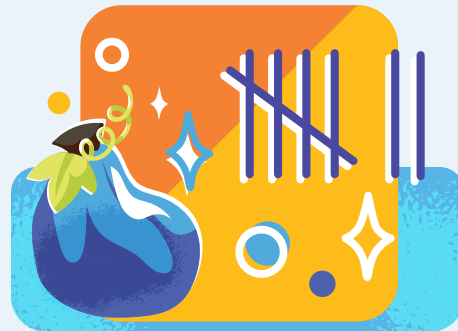
10 3 tens 42 ones _____ 11 $63 + 20$ _____

Name _____

Make Sense of Data Reasoning About Equality Tens and Ones 1.MD.4, 1.NBT.4, SMP.2, SMP.3, SMP.6

Wazzle-Squash Data

Let's ask and answer questions about wazzle-squash data.



I can be all of me in math class.
The storm created a challenging problem. When have you felt challenged in math class?

Warm-Up



eyes on teacher

Activity

1

Questions About Donations

Look at the table of data.

Containers of Wazzle-Squash Food

Wazzle-squash food	Number of containers
butter	22
crisps	29
seeds	31

1

Data Talk!



What questions could you ask that can be answered by finding the sum of 2 categories of data?

Questions About Donations (continued)

2 Write a question you want to answer.

3 Find the answer to the question you wrote in Problem 2. Write an equation to show how you solved the problem and use an underline to show the answer in the equation.



Show your thinking.

answer: _____

equation: _____

Questions About Seeds

Hands-On

Look at the table of data. Answer each question and write an equation to show how you found the answer. Use an underline to show the answer in the equation.

Saved Wazzle-Squash Seeds

Color	Number of seeds
purple	29
blue	37
green	8



Show your thinking.

4

How many purple and green seeds were saved?

answer: _____

equation: _____

Questions About Seeds (continued)



Show your thinking.

5

How many blue and green seeds were saved?

answer: _____ equation: _____

6

How many purple and blue seeds were saved?

answer: _____ equation: _____

Summary 5.14

Various strategies can be used to show addition when answering questions about data.

Saved Wazzle-Squash Seeds

Color	Number of seeds
purple	29
blue	37
green	8

How many **purple** and **green** wazzle-squash seeds were saved?

one strategy

$$8 + 29 = ?$$

$$10 + 29 = 39$$

$$39 - 2 = \boxed{37}$$

another strategy

$$8 + 29 = ?$$



$$1 + 29 = 30$$

$$7 + 30 = \boxed{37}$$

Practice 5.14

Choose from these Centers.



Cover Up

Stage 9



How Close?

Stage 3



Target Numbers

Stage 3

Practice 5.14

Name _____

For Problems 1 and 2, use the data to answer the questions.

flower plants	vegetable plants	citrus plants
19	23	17

- 1** How many flower plants and vegetable plants are there?

 **Show your thinking.** _____

answer: _____

- 2** How many vegetable plants and citrus plants are there?

 **Show your thinking.** _____

answer: _____

Spiral Review

- 3 There were 12 paper clips in a box.
Some of them were lost.
Now there are 7 paper clips left.
How many paper clips were lost?



Show your thinking.

answer: _____ equation: _____

- 4 Find the number that makes the equation true.

$$15 - 7 = \underline{\hspace{2cm}}$$



Show your thinking.

answer: _____

For Problems 5–8, write the number that matches the representation.

- 5 25 ones 5 tens _____ 6 3 tens 33 ones _____
7 6 tens and 2 tens _____ 8 8 tens 17 ones _____



Notes:

Math at Work

What festivals does your town celebrate?
What do you think is needed to plan a festival?

Event planners figure out the details for large events, such as festivals. They might add within 100 to know how many tables to set up.



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Math at Home

 Draw

Math Mindset

 Draw

Directions:

Math at Home: Find 2 two-digit numbers in your home. Show an adult how you can add those 2 numbers.

Math Mindset: How can you think about tens and ones to add $47 + 38$?



Unit **6**

Measuring Lengths of Up to 120 Length Units



Big Ideas in This Unit

CC1 Measuring With Objects Making Sense of Data

CC2 Equal Expressions Reasoning About Equality **CC3** Tens and Ones

Questions for Investigation

- How can we compare the lengths of objects?
- How can we measure and describe the lengths of objects?
- How can representing the relationship between the amounts in a story problem help us solve?



Unit Story: Side By Side

In this story, brothers Sean and Trevor enjoy competing with each other during a family trip to a bird sanctuary.



Explore: Build a Birdhouse

How can measurement help to build a birdhouse?



Watch Your Knowledge Grow

This is the math you'll explore in this unit. Rate your understanding to see how your knowledge grows!



I can . . .	Before	After
Order 3 objects by length.		
Compare the lengths of objects by using a third object.		
Measure an object using different length units, making sure there are no gaps or overlaps.		
Organize data into categories and answer questions about the groups.		
Count to 120, write numerals, represent objects, and make sense of lengths up to 120.		
Solve addition and subtraction story problems within 20 using drawings, objects, and equations.		

From Comparing to Measuring Length

✦ Unit Story: Side by Side




MT.PHOTOSTOCK/Shutterstock.com

Trevor and Sean often compete to see who can find the longer object.

How could they compare the lengths of 2 objects in the illustration?

Name _____

Measuring With Objects  Building Toward 1.MD.1, SMP.1, SMP.3, SMP.6


Explore: Build a Birdhouse

How can measurement help to build a birdhouse?



Warm-Up



 eyes on teacher

Discuss  What do you notice? What do you wonder?

Side by Side



Unit Story



Name _____

How Can Measurement Help to Build a Birdhouse?

- Use the information to build a birdhouse for the bird sanctuary.
- Explain how you know your birdhouse might look like the one needed by the bird sanctuary.

Ways to be a mathematician

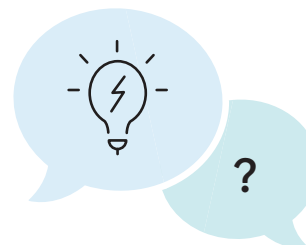
- 1 I can take my time to think about a challenging problem before trying to solve it.

Not yet Almost I got it!



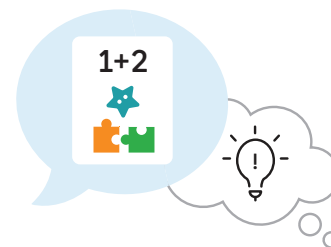
- 2 I can explain why my thinking makes sense and ask questions to understand the thinking of others.

Not yet Almost I got it!



- 3 I can work carefully and try to be clear when I share my ideas.

Not yet Almost I got it!

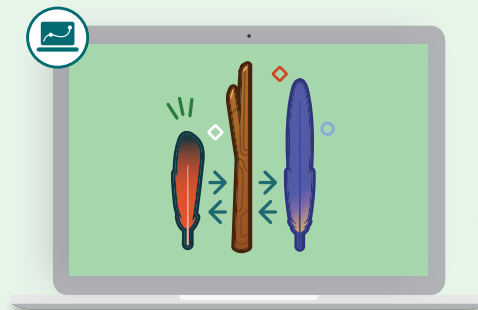


Name _____

Measuring with Objects 1.MD.1, SMP.5, SMP.6, SMP.7

Birds of a Feather

Let's explore ways to compare the lengths and heights of objects.



Warm-Up

1-3

eyes on teacher

I am a doer of math.
What are some characteristics of a strong mathematician?

Activity

1

Getting Things in Order

4 List the clover, mushroom, and pine cone in order from *tallest* to *shortest*.

_____ tallest _____ shortest

5 For each problem, choose **3** cards. Use the labels to put the objects in order.

Workmat A

_____ tallest _____ shortest

Getting Things in Order (continued)

- 5** For each problem, choose **3** cards. Use the labels to put the objects in order.

Workmat A

_____ tallest

_____ shortest

Workmat B

_____ shortest

_____ longest

Workmat B

_____ shortest

_____ longest

- 6** **Discuss** 

How would you order the objects on the screen from *tallest* to *shortest*? Explain your thinking.

First, I _____. Then I _____.

Longer or Shorter?

7Discuss 

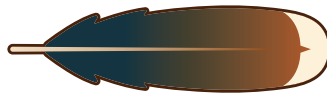
What do you notice?

8Circle the feather that is *longer*.

A



B

**9**Circle the feather that is *shorter*.

C



D



E

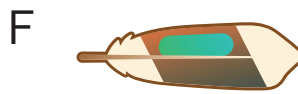
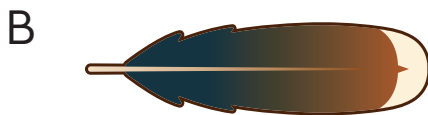
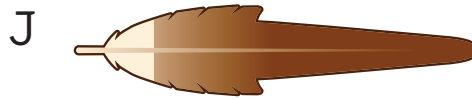
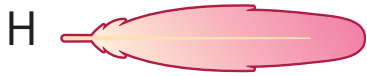


G



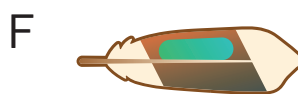
Longer or Shorter? (continued)

9 Circle the feather that is *longer*.



10 Discuss 

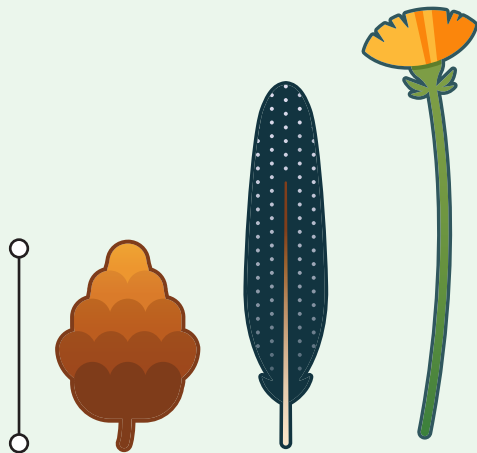
How could you use the crayon to help you figure out which feather is *longer*?



Summary 6.02

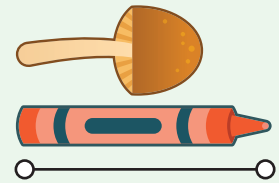
You can compare the **length** or **height** of objects when they are lined up at their endpoints. You can also compare 2 objects to the length or height of a third object.

The pine cone is *shortest* and the dandelion is *tallest*.



height

The worm is *longer* than the mushroom.



length

length The measure of how long an object is from endpoint to endpoint.

Practice 6.02

Choose from these Centers.



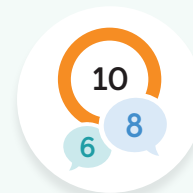
Counting Collections

Stage 3



Cover Up

Stage 9



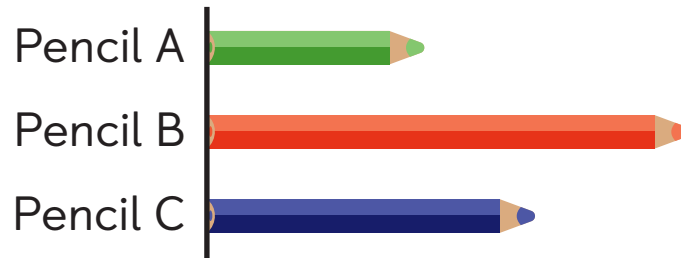
How Close?

Stage 3

Practice 6.02

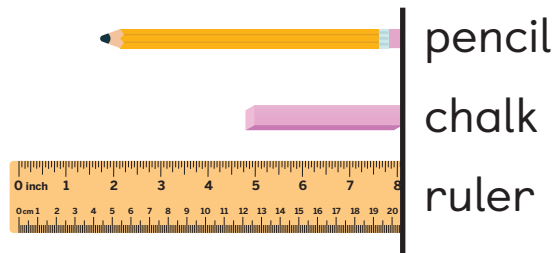
Name _____

1 List the objects in order from *shortest* to *longest*.



_____ , _____ , _____
shortest , longest

2 List the objects in order from *longest* to *shortest*.



_____ , _____ , _____
longest , shortest

For Problems 3 and 4, look at the objects. Circle the word that makes the statement true.



3 The pencil is _____ than the crayon. shorter longer

4 The glue stick is _____ than the pencil. shorter longer

Spiral Review

For Problems 5–14, find the sum or difference.

5 $5 + 1$ _____

6 $4 - 1$ _____

7 $8 + 1$ _____

8 $7 - 1$ _____

9 $7 + 1$ _____

10 $9 - 1$ _____

11 $6 + 1$ _____

12 $10 - 1$ _____

13 $9 + 1$ _____

14 $8 - 1$ _____

For Problems 15–18, find the sum.

 Show your thinking.

15 $10 + 4$ _____

16 $2 + 10$ _____

17 $7 + 10$ _____

18 $10 + 5$ _____

Name _____

Measuring with Objects 1.MD.1, 1.NBT.4, SMP.1, SMP.3, SMP.5, SMP.7, SMP.8

A Very Muddy Competition

Let's compare the lengths of objects that cannot be lined up by their endpoints.



Warm-Up



eyes on teacher



I am a doer of math.

What does it mean to be a problem solver in math class?

Activity

1

Shoe Prints in the Mud

1

Discuss

Explain how Sean and Trevor could find which shoe print is longer.

To find which shoe print is longer, Sean and Trevor could _____.

Which Shoe Print Is Longer?

Hands-On

- 2 Work with your partner to find the longer shoe print.
- 3 Write a note to Trevor and Sean telling them which shoe print is longer and how you know.

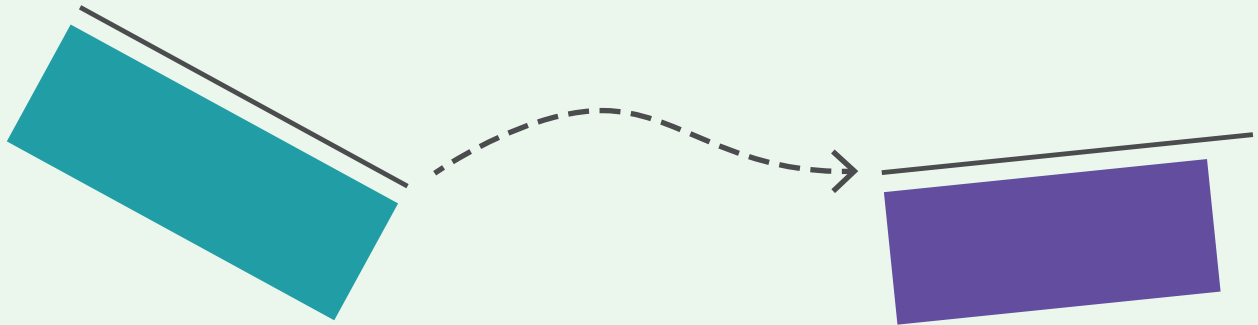
Dear Trevor and Sean,

Sincerely,



Summary 6.03

A third object, such as a piece of string, can be used as a tool to compare the lengths of 2 objects that cannot be lined up by their endpoints.



The purple rectangle is shorter than the green rectangle.

Practice 6.03

Choose from these Centers.



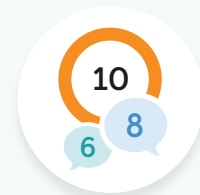
Counting Collections

Stage 3



Cover Up

Stage 9



How Close?

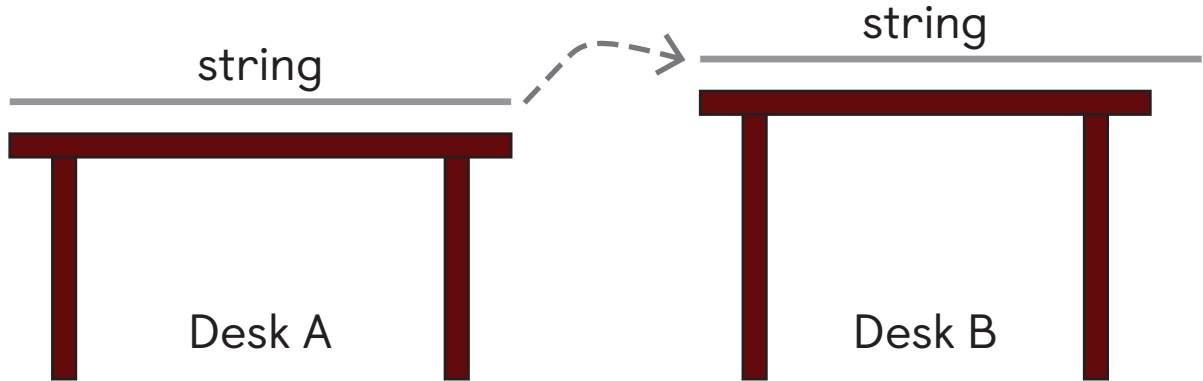
Stage 3

Practice 6.03

Name _____

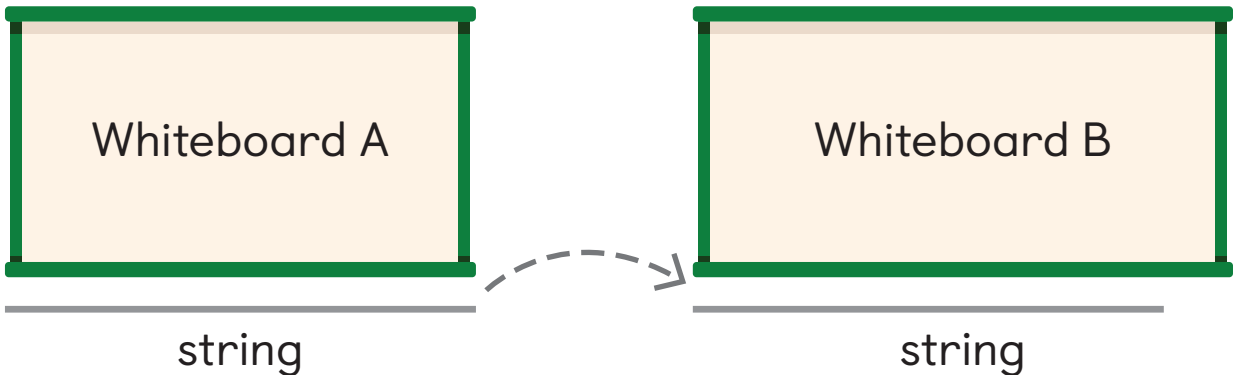
For Problems 1–3, fill in the blank with the word *shorter* or *longer* to make the statement true.

1



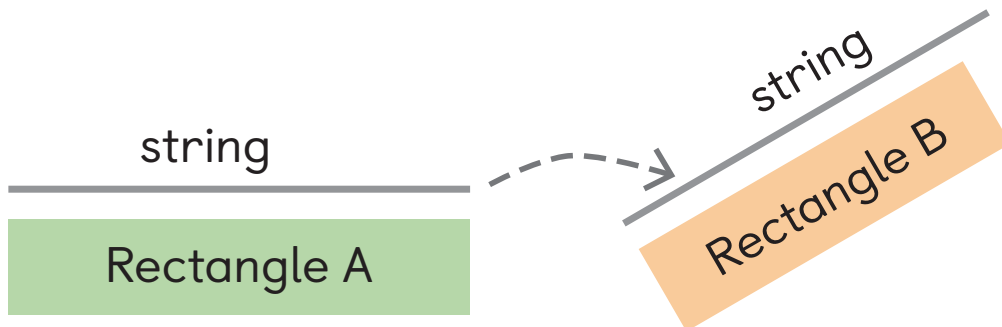
Desk A is _____ than Desk B.

2



Whiteboard A is _____ than Whiteboard B.

3



Rectangle B is _____ than Rectangle A.

Spiral Review

For Problems 4–15, find the sum or difference.

4 $2 + 2$ _____

5 $4 - 2$ _____

6 $3 + 2$ _____

7 $6 - 2$ _____

8 $5 + 2$ _____

9 $7 - 2$ _____

10 $6 + 2$ _____

11 $10 - 2$ _____

12 $7 + 2$ _____

13 $5 - 2$ _____

14 $4 + 2$ _____

15 $8 - 2$ _____

- 16 Clare picked some roses from the garden. She picked 8 red roses, 2 pink roses, and 5 yellow roses. How many roses did Clare pick altogether?

 Show your thinking. _____

answer: _____

equation: _____

Name _____

Measuring with Objects 1.MD.2, SMP.6

Library Books

Let's use connecting cubes to measure the lengths of objects.



Warm-Up



eyes on teacher



We are a math community.

When you disagree with another mathematician, what can you do to try to come to an agreement?

Activity

1

Vehicle Book

Hands-On 

Use connecting cubes to build towers that are the same length as each vehicle. Fill in the blanks to make each statement *true*.

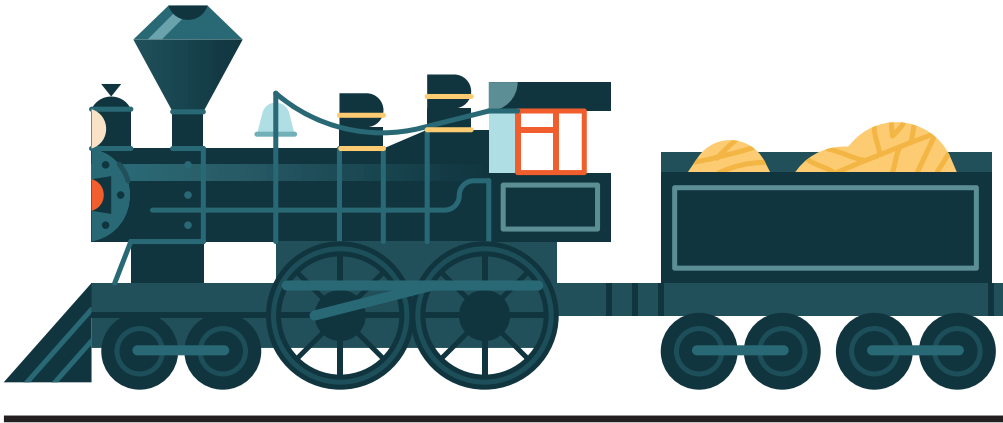
1



The fire truck is the same length as a tower of _____ connecting cubes.

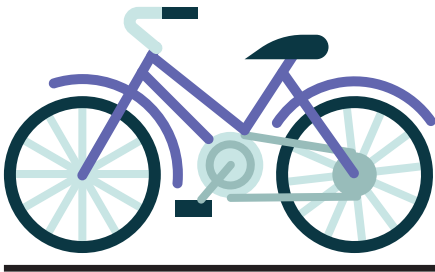
Vehicle Book (continued)

2



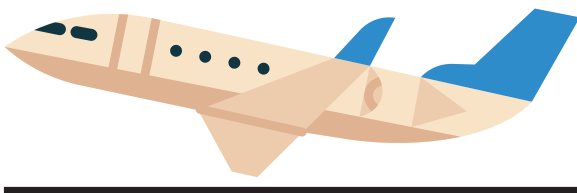
The train is the same length as a tower of _____ connecting cubes.

3



The bike is the same length as a tower of _____ connecting cubes.

4



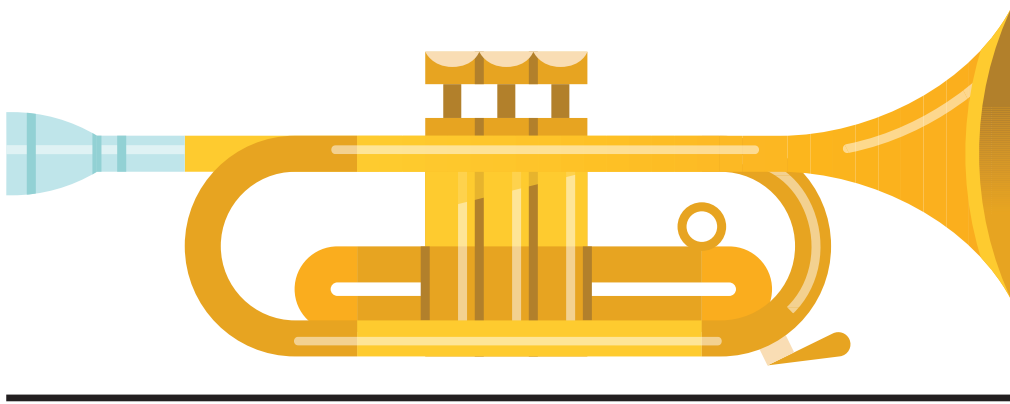
The plane is the same length as a tower of _____ connecting cubes.

Musical Instrument Book

Hands-On

Use connecting cubes to measure the length of each instrument. Fill in the blanks to make each statement *true*.

5

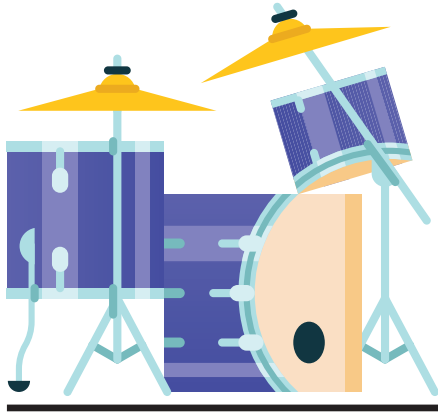


The length of the trumpet is _____ connecting cubes.



Musical Instrument Book (continued)

6



The length of the drums is _____ connecting cubes.

7



The length of the keyboard is _____ connecting cubes.

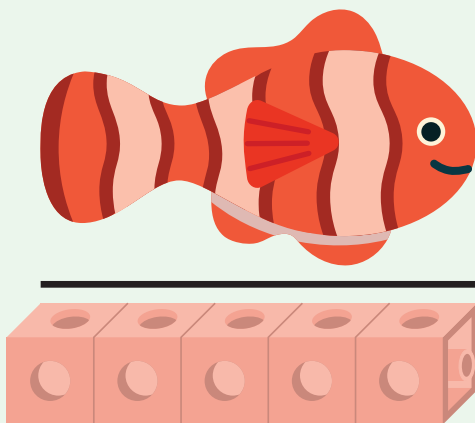
8



The length of the guitar is _____ connecting cubes.

Summary 6.04

The **length** of an object can be described as a number of length units from endpoint to endpoint.



The length of the fish is 5 connecting cubes.

Practice 6.04

You'll play this Center.



Estimate and Measure Stage 2

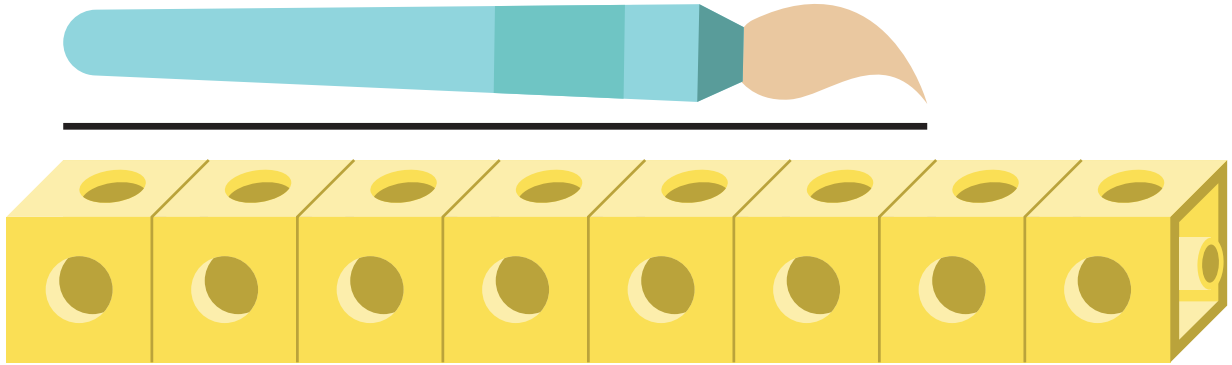
Let's estimate and compare the lengths of different objects.

Practice 6.04

Name _____

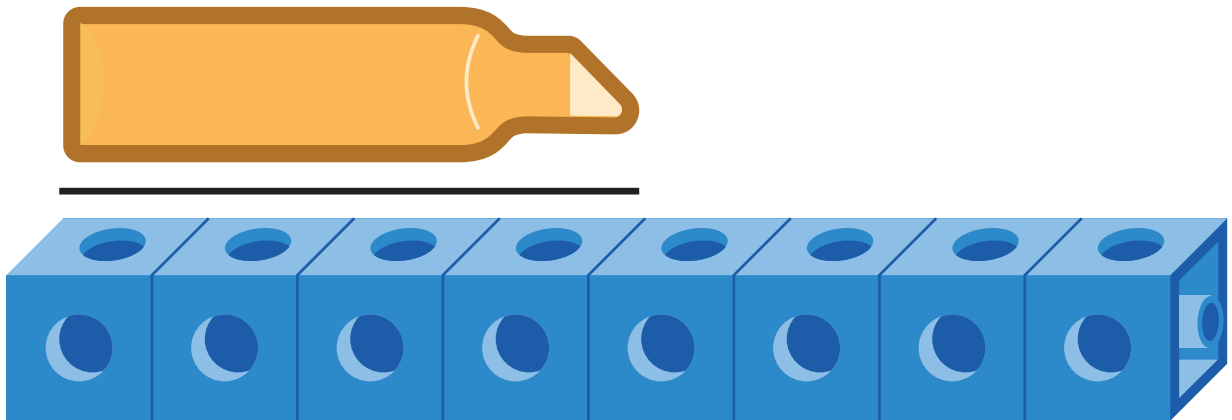
For Problems 1–3, fill in the blank to make the statement *true*.

1



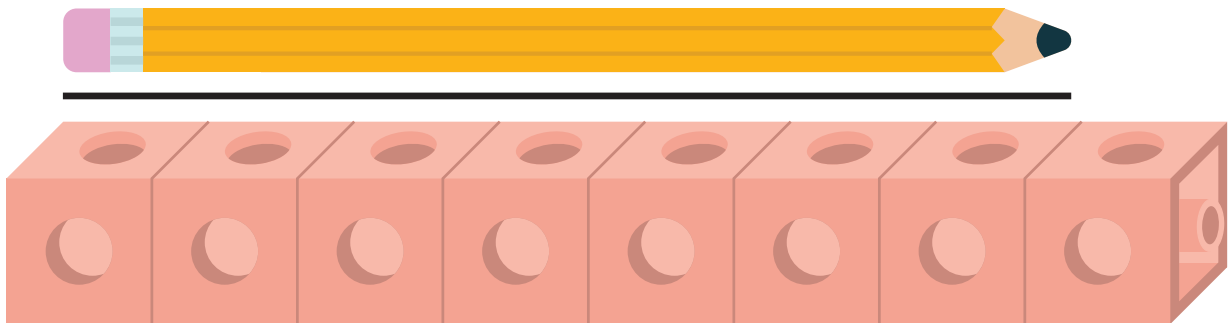
The paintbrush is _____ connecting cubes long.

2



The highlighter is _____ connecting cubes long.

3



The pencil is _____ connecting cubes long.

Spiral Review

For Problems 4–13, find the sum or difference.

4 $2 + 3$ _____

5 $8 - 3$ _____

6 $5 + 3$ _____

7 $7 - 3$ _____

8 $4 + 3$ _____

9 $9 - 3$ _____

10 $7 + 3$ _____

11 $5 - 3$ _____

12 $3 + 3$ _____

13 $10 - 3$ _____

For Problems 14–17, find the sum.

 Show your thinking.

14 $14 + 2$ _____

15 $3 + 16$ _____

16 $5 + 13$ _____

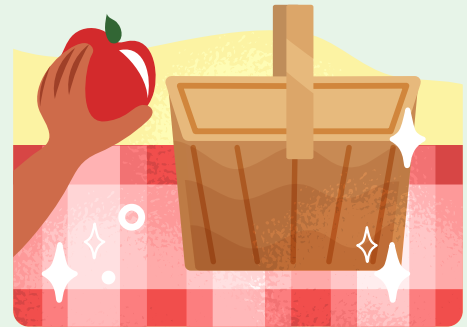
17 $17 + 2$ _____

Name _____

Measuring with Objects 1.MD.2, SMP.2, SMP.3, SMP.6


Packing a Picnic

Let's use paper clips to measure the lengths of objects.



Warm-Up



 eyes on teacher

I can be all of me in math class.
Trevor and Sean enjoy competing.
When do you like and dislike competitions?

Activity

1

Picnic Baskets

Look at Baskets A–C on the Activity 1 PDF and decide which measurements are correct.



Picnic Baskets (continued)

1

Which of the measurements do you think is *correct*? Why?





2

Which of the measurements do you think is *incorrect*? Why?

Picnic Items

Hands-On

3 Measure and record the length of each picnic item.

Picnic item	Length
sandwich 	_____ paper clips
banana 	_____ paper clips
mango 	_____ paper clips
pretzel 	_____ paper clips

Picnic Items (continued)

4

Discuss 

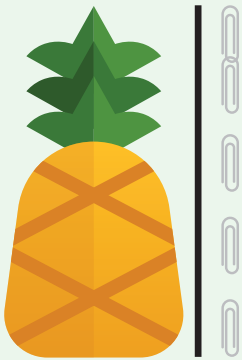
Explain how you know your measurement of the sandwich is correct.

I know my measurement is correct because _____.

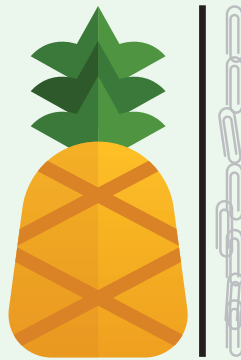


Summary 6.05

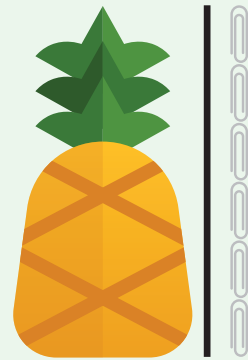
To measure the length or height of an object, measure the object from end to end with same-length units and without gaps or overlaps.



gaps



overlaps



The pineapple is
6 paper clips tall.

Practice 6.05

Choose from these Centers.



Counting
Collections

Stage 3



Cover Up

Stage 9



Estimate and
Measure

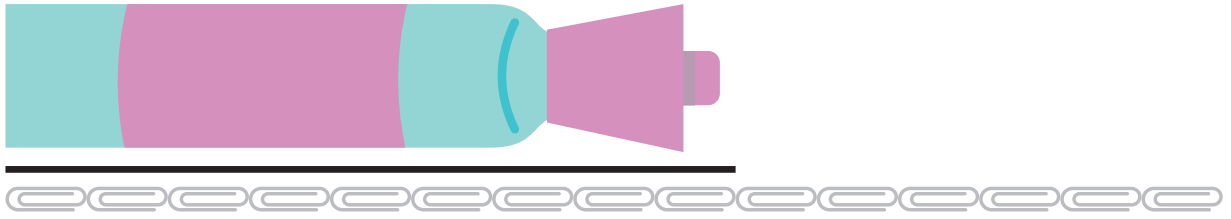
Stage 2

Practice 6.05

Name _____

For Problems 1–3, fill in the blank to make the statement true.

1



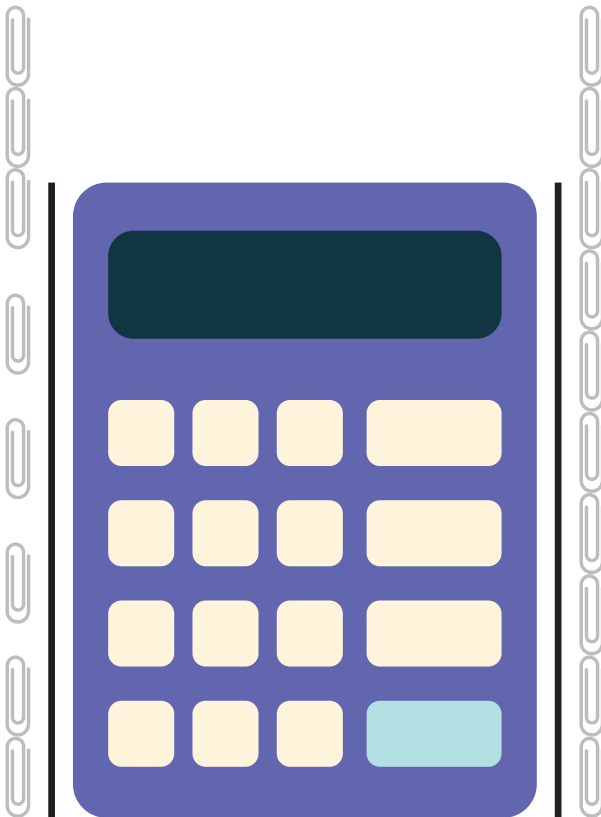
The marker is _____ paper clips long.

2



The crayon is _____ paper clips long.

3



The calculator is _____ paper clips long.

Spiral Review

For Problems 4–15, find the sum or difference.

4 $2 + 4$ _____

5 $10 - 4$ _____

6 $4 + 4$ _____

7 $5 - 4$ _____

8 $6 + 4$ _____

9 $8 - 4$ _____

10 $1 + 4$ _____

11 $9 - 4$ _____

12 $3 + 4$ _____

13 $7 - 4$ _____

14 $5 + 4$ _____

15 $6 - 4$ _____

- 16 Diego planted some bean seeds.
On Monday, 6 seeds had sprouted.
On Tuesday, 4 new seeds had sprouted.
On Wednesday, 7 new seeds had sprouted.
How many bean seeds had sprouted altogether?

 Show your thinking.

answer: _____

equation: _____

Name _____

Measuring with Objects 1.MD.2, SMP.6, SMP.7

Off to the Bird Sanctuary!

Let's measure the same object more than once using different length units.



Warm-Up



eyes on teacher

We are a math community.

When do you feel included in math class? What might make you feel more included?

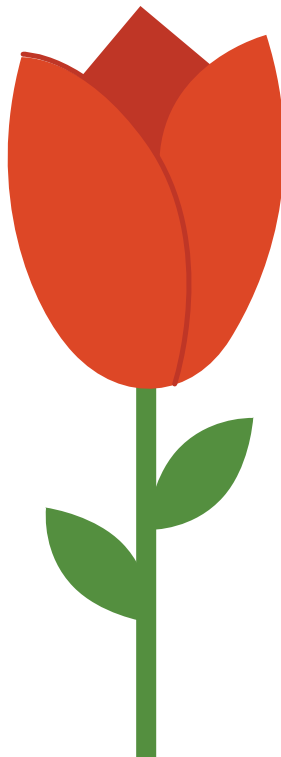
Activity

1

I Spy

Hands-On 

This is the tulip that Trevor spied.



I Spy (continued)

Measure and record the height of the tulip.

1 Measure with unit cubes.

height: _____ unit cubes

2 Measure with paper clips.

height: _____ paper clips

3 **Discuss** 

Did you get the same measurement each time you measured the tulip? Why do you think that happened?

- Yes, we got the same measurement each time because _____.
- No, we got different measurements each time because _____.

Wristbands

Hands-On

Measure and record the length of each wristband.

- 4 Measure and record the length of the child wristband in unit cubes.

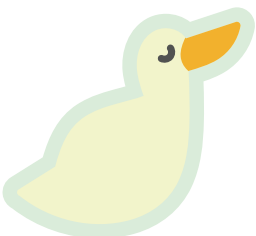
length: _____

- 5 Measure and record the length of the child wristband in paper clips.

length: _____

- 6 Measure and record the length of the adult wristband in unit cubes.

length: _____



Wristbands (continued)

- 7 Measure and record the length of the adult wristband in connecting cubes.

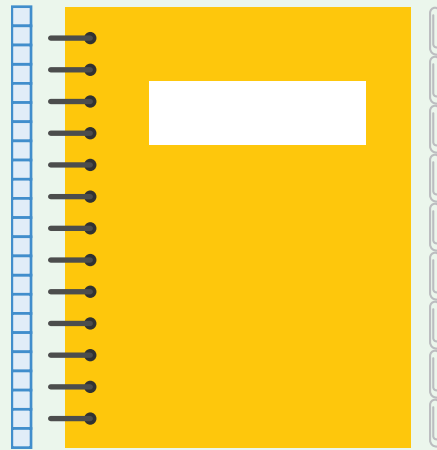
length: _____

- 8 Trevor measured the child wristband and said it is 18 long. Do you *agree* or *disagree* with Trevor's measurement? Why?

Summary 6.06

The length of an object can be measured more than once using different length units. Measurements should include a number and the length unit so others can understand the measurement.

The notebook is 23 unit cubes long.



The notebook is 9 paper clips long.

Practice 6.06

Choose from these Centers.



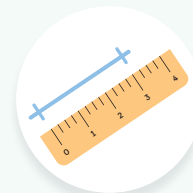
Counting
Collections

Stage 3



Cover Up

Stage 9



Estimate and
Measure

Stage 2

Practice 6.06

Name _____

1



Tape A



Record the length of Tape A in paper clips.

length: _____

Record the length of Tape A in unit cubes.

length: _____

2



Tape B



Record the length of Tape B in paper clips.

length: _____

Record the length of Tape B in unit cubes.

length: _____

Spiral Review

For Problems 3 and 4, find the sum or difference.

3 $5 + 5$ _____

4 $8 - 5$ _____

Practice 6.06

Name _____

For Problems 5–12, find the sum or difference.

5 $3 + 5$ _____

6 $7 - 5$ _____

7 $1 + 5$ _____

8 $6 - 5$ _____

9 $4 + 5$ _____

10 $9 - 5$ _____

11 $2 + 5$ _____

12 $10 - 5$ _____

For Problems 13–18, find the sum.

 **Show your thinking.**

13 $6 + 6$ _____

14 $7 + 7$ _____

15 $8 + 8$ _____

16 $6 + 7$ _____

17 $7 + 8$ _____

18 $8 + 9$ _____

Measuring Lengths Up to 120 Length Units

✦ Unit Story: Side by Side



LitterART . LeStyrien/Shutterstock.com

Trevor and Sean visited the Education Center at the bird sanctuary.

What are some objects in the illustration that might be more than 100 connecting cubes long?

Name _____

Measuring With Objects Tens and Ones 1.MD.2, 1.NBT.1, SMP.6, SMP.7

From Wing Tip to Wing Tip

Let's measure lengths that are much longer than our length units.



Warm-Up

A target icon with an arrow in the center.

eyes on teacher

I am a doer of math.

What can you think about to help you when math feels challenging?

Activity

1

Long Length, Short Units

Hands-On A green hand icon.

The tape represents the length of a Black Skimmer's wingspan.

- 1 Measure the length of a Black Skimmer's wingspan with each length unit. Record each length.

Length unit	Wingspan length
connecting cubes	
unit cubes	

Long Length, Short Units (continued)

2

Discuss 

How is measuring a length that is much longer than the length unit you are using the same as measuring a shorter length? How is it different?

- Measuring a longer length and measuring a shorter length are the *same* because _____.
- Measuring a longer length and measuring a shorter length are *different* because _____.



Measuring a Wingspan

Hands-On

The tape represents the length of a Prairie Falcon's wingspan.

- 3 Measure the length of a Prairie Falcon's wingspan with unit cubes. Record the length.

length: _____

4 Discuss

How did you count to find the length of the Prairie Falcon's wingspan?

First, we _____. Then we _____.



Summary 6.07

When measuring a length that is much longer than the length unit, it is helpful to make groups of ten and count by 10 and 1 to find the length.



10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 101, 102, 103, 104, 105, 106, 107, 108
Bald eagle's wingspan length: 108 connecting cubes

Practice 6.07

Choose from these Centers.



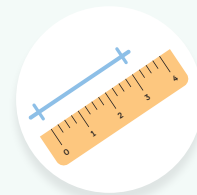
Counting
Collections

Stage 4



Cover Up

Stage 9



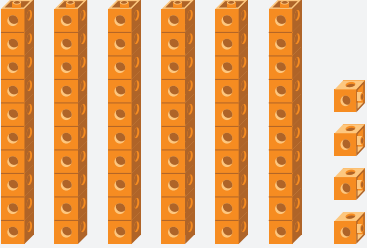
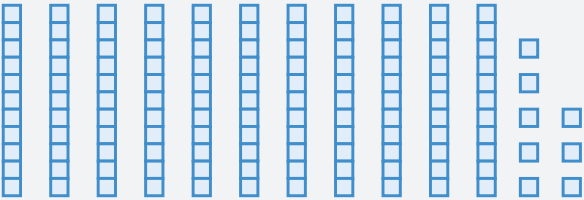
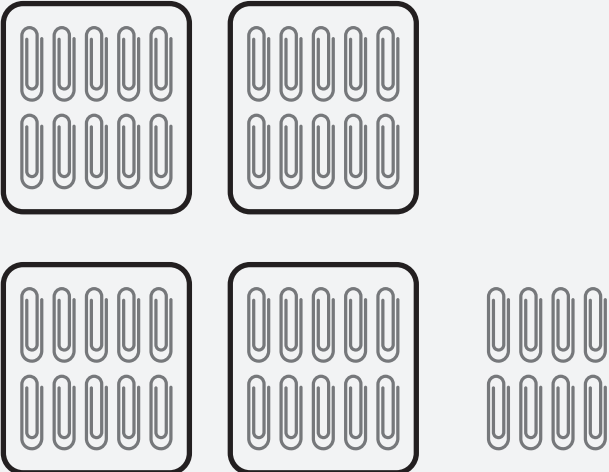
Estimate and
Measure

Stage 2

Practice 6.07

Name _____

- 1 Shawn and Han measured the length of a toy snake with different length units. Record each length.

Length unit	Length
<p>connecting cubes</p> 	
<p>unit cubes</p> 	
<p>paper clips</p> 	

Spiral Review

For Problems 2–7, find the sum or difference.

2 $2 + 6$ _____

3 $10 - 6$ _____

4 $4 + 6$ _____

5 $8 - 6$ _____

6 $3 + 6$ _____

7 $9 - 6$ _____

For Problems 8 and 9, find the sum.

 Show your thinking.

8 $5 + 7 + 5$ _____

9 $9 + 8 + 1$ _____

- 10 At a turtle museum, Jada saw 7 leatherback turtles, 8 box turtles, and 3 loggerhead turtles. How many turtles did Jada see altogether?

 Show your thinking.

answer: _____

equation: _____

Name _____

Measuring With Objects Tens and Ones

1.MD.2, 1.NBT.1, SMP.5, SMP.6, SMP.7

Measuring More Wingspans

Let's use what we know about tens and ones to measure lengths.



Warm-Up



eyes on teacher



I am a doer of math.

Why is it helpful for mathematicians to try out different tools when doing math?

Activity

1

Using a New Tool

Hands-On

The tape represents the length of a Red-Shouldered Hawk's wingspan.

- 1 How long do you think the tape is in unit cubes? Record your estimate.

estimate: _____

- 2 Measure the length of the tape with tens rods and single unit cubes. Record the length.

length: _____

Measuring With Tens Rods

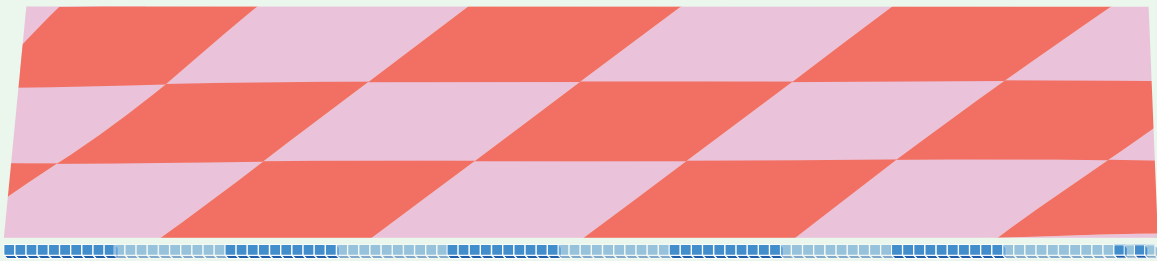
Hands-On

- 3** Write the letter of the tape and measure the wingspan. Tell your partner how you found the total number of unit cubes. Record the measurement.

Tape	Wingspan length (number and length unit)
Tape _____	_____
Tape _____	_____
Tape _____	_____

Summary 6.08

Tens rods are helpful for measuring lengths with unit cubes because you can count by 10 and 1 to find the total amount of length units used to measure.



10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 101, 102, 103, 104
The length of the rug is 104 unit cubes.

Practice 6.08

You'll play this Center.

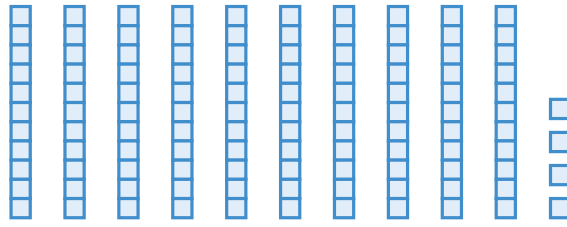


Estimate and Measure Stage 3

Let's estimate and measure the lengths of different objects.

Name _____

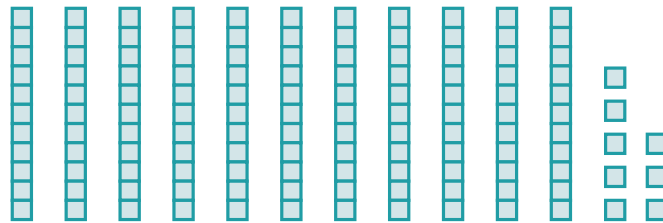
- 1** Priya measured the length of a rug using the unit cubes.



Record the length of the rug in unit cubes.

length: _____

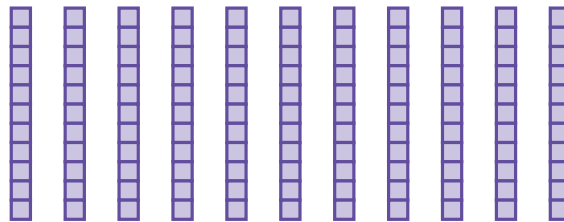
- 2** Shawn measured the length of a bench using the unit cubes.



Record the length of the bench in unit cubes.

length: _____

- 3** Diego measured the height of a window using the unit cubes.



Record the height of the window in unit cubes.

height: _____

Spiral Review

For Problems 4–9, find the sum or difference.

4 $3 + 7$ _____

5 $9 - 7$ _____

6 $1 + 7$ _____

7 $10 - 7$ _____

8 $2 + 7$ _____

9 $8 - 7$ _____

For Problems 10–15, find the sum.

 Show your thinking.

10 $9 + 4$ _____

11 $9 + 6$ _____

12 $8 + 5$ _____

13 $7 + 5$ _____

14 $2 + 9$ _____

15 $3 + 8$ _____

Name _____

Measuring With Objects Tens and Ones 1.NBT.1, 1.MD.2, SMP.6, SMP.7, SMP.8

From Head to Claw

Let's create and interpret representations of lengths up to 120 length units.



Warm-Up



eyes on teacher

I can be all of me in math class.
Sean and Trevor have fun comparing. How do you have fun with others?

Activity

1

Representing a Secret Height

Hands-On 

You will be assigned the height of a bird.

1 Discuss

Read the height from the sticky note.
What do you know about this number?

2

Create a poster with a drawing that shows the number of tens and ones that represent the secret height of the bird.



Finding the Secret Heights

- 3 For each poster, find and record the secret height.

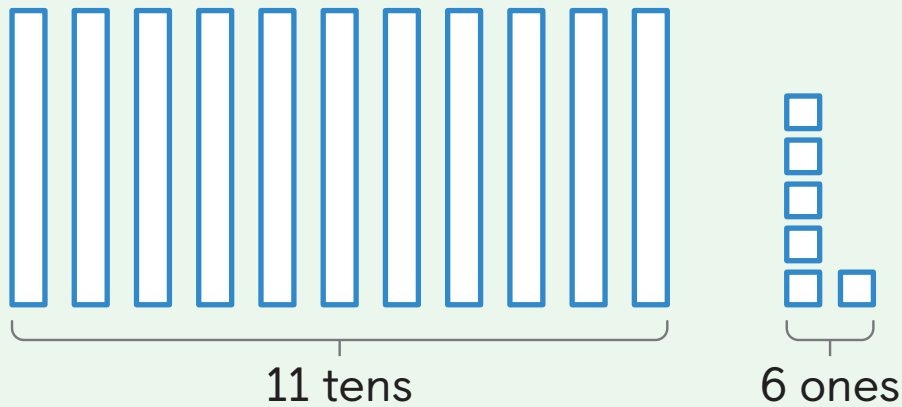
Bird	Height (number and length unit)
Tape A: Black vulture	
Tape B: Giant ibis	
Tape C: Secretary bird	
Tape D: Southern cassowary	
Tape E: Greater flamingo	
Tape F: Shoebill stork	

- 4 **Discuss** 

What do you notice about the numbers you wrote?

Summary 6.09

Numbers up to 120 can be represented with tens and ones. When recording measurements with 100 to 120 length units, the numbers are written with 3 digits.



116 unit cubes

Practice 6.09

Choose from these Centers.



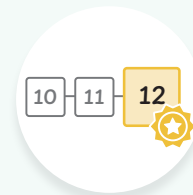
Counting
Collections

Stage 4



Estimate and
Measure

Stage 3



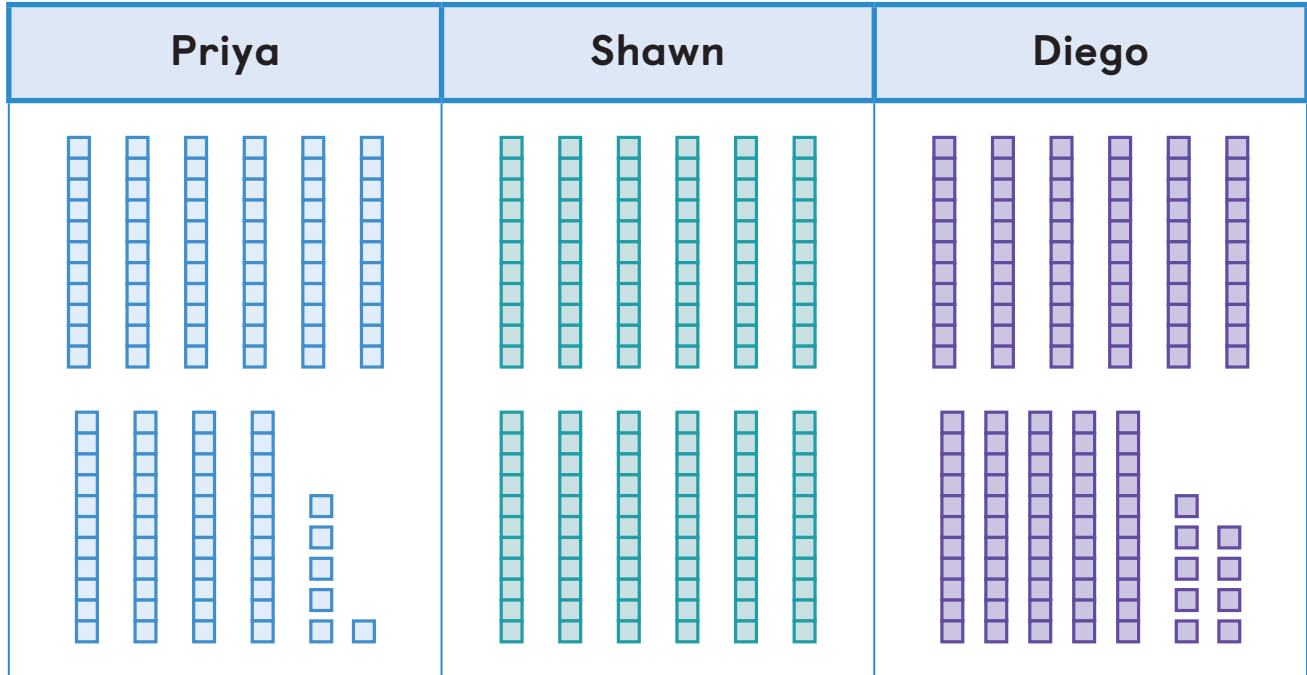
Last Number
Wins

Stage 2

Practice 6.09

Name _____

The table shows the number of unit cubes that represent the height of each student.



For Problems 1–3, record the height of each student in unit cubes.

	Student	Height (number and length unit)
1	Priya	
2	Shawn	
3	Diego	

Spiral Review

For Problems 4–9, find the sum or difference.

4 $2 + 8$ _____

5 $10 - 9$ _____

6 $1 + 8$ _____

7 $9 - 8$ _____

8 $1 + 9$ _____

9 $10 - 8$ _____

For Problems 10 and 11, find the difference.

 Show your thinking.

10 $16 - 4$ _____

11 $19 - 2$ _____

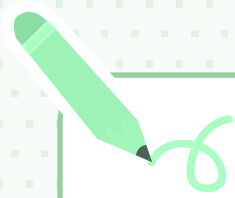
- 12 Clare has 7 red balloons, 9 blue balloons, and 1 yellow balloon.

How many balloons does Clare have in total?

 Show your thinking.

answer: _____

equation: _____



Notes:

All Kinds of Story Problems

✦ Unit Story: Side by Side



Aastels/Shutterstock.com

Tell a story problem about something you see in the illustration.

Name _____

Measuring With Objects Make Sense of Data Equal Expressions

1.OA.2, 1.MD.2, 1.MD.4, 1.OA.4, 1.OA.6, SMP.2, SMP.7

A Bird-Friendly Backyard

Let's solve problems about lengths using addition and subtraction.



We are a math community.
How do you help to make our classroom a friendly space where everyone can do math?

Warm-Up



eyes on teacher

Activity

1

Building Bird Feeders

Hands-On

- 1 Measure the height of each bottle in unit cubes. Record the heights.

Bottle	Height (number and length unit)
Bottle A	_____
Bottle B	_____
Bottle C	_____

Building Bird Feeders (continued)

- 2 Solve the problem and write an equation to show how you solved it.

Use an underline to show the answer in the equation.

Dad helped Sean and Trevor stack the 3 bottles together to build a taller bird feeder.

What is the total height of the bird feeder when the bottles are stacked on top of each other?



Show your thinking. _____

answer: _____

equation: _____



Changing Shadows

Hands-On

Sean and Trevor recorded the changing lengths of the milkweed plant's shadow in the table.

Time of day	Shadow length
breakfast	13 connecting cubes
lunch	8 connecting cubes
dinner	17 connecting cubes

3 Discuss

What questions can you ask that can be answered by comparing the shadows' lengths?

- How much longer is the shadow at _____ than at _____?
- How much shorter is the shadow at _____ than at _____?

Changing Shadows (continued)

- 4 Write a question you want to answer.

- 5 Find the answer to the question you wrote.
Write an equation to show how you solved it.
Use an underline to show the answer in the equation.

 Show your thinking.

answer: _____

equation: _____

Summary 6.10

To find the total length of 2 or more objects, you can add the lengths. To compare lengths and find the difference between the lengths of objects, you can add or subtract.

Mom found lengths of string to hang the bird feeder.

The red string is 6 paper clips long.

The blue string is 9 paper clips long.

How long are the red and blue strings together?

$$6 + 9 = \underline{15}$$

How many paper clips shorter is the red string than the blue string?

$$9 - \underline{3} = 6 \text{ or } 6 + \underline{3} = 9$$

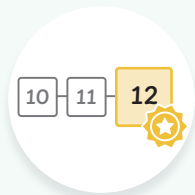
Practice 6.10

Choose from these Centers.



Estimate and Measure

Stage 3



Last Number Wins

Stage 2



Last Number Wins

Stage 3

Practice 6.10

Name _____

- 1 Clare recorded the lengths of her 3 ribbons.

Ribbon	Length
red ribbon	7 connecting cubes
blue ribbon	5 connecting cubes
green ribbon	6 connecting cubes

If Clare lines up the 3 pieces of ribbon, what is the total length of the 3 ribbons?

 Show your thinking.

answer: _____

equation: _____

Spiral Review

For Problems 2–5, find the sum.

2 $2 + 1$ _____

3 $4 + 2$ _____

4 $3 + 2$ _____

5 $5 + 3$ _____

Practice 6.10

Name _____

For Problems 6–13, find the sum.

6 $5 + 4$ _____

7 $4 + 1$ _____

8 $7 + 0$ _____

9 $1 + 6$ _____

10 $2 + 6$ _____

11 $3 + 3$ _____

12 $6 + 4$ _____

13 $3 + 6$ _____

For Problems 14–19, find the difference.

 Show your thinking.

14 $18 - 5$ _____

15 $18 - 15$ _____

16 $19 - 4$ _____

17 $19 - 14$ _____

18 $17 - 3$ _____

19 $17 - 13$ _____

Name _____

Reasoning about Equality

Equal Expressions

1.OA.1, 1.OA.4, 1.OA.6, SMP.2, SMP.7, SMP.8

Fascinated With Footprints

Let's help Sean and Trevor
compare lengths.



Warm-Up



eyes on teacher



I am a doer of math.

Think of a time when you worked hard to solve a challenging problem. How did you feel?

Activity

1

Animal Footprints

Read the story.

A lion's footprint is 8 connecting cubes long.

A kangaroo's footprint is 5 connecting cubes longer than a lion's footprint.

1 Discuss

What questions could you ask about the information in the story?

- How long is the _____?
- How much shorter is the _____ than the _____?

Animal Footprints (continued)

Hands-On

- 2 Solve the problem and write an equation to show how you solved it.

Use an underline to show the answer in the equation.

 **Show your thinking.** _____

answer: _____

equation: _____

Comparing More Footprints

Hands-On

Solve each problem and write an equation to show how you solved it.

Use an underline to show the answer in the equation.



Show your thinking.

3

An emu's footprint is 11 connecting cubes long.
A giraffe's footprint is 5 connecting cubes longer
than an emu's footprint.
How long is a giraffe's footprint?

answer: _____

equation: _____

Comparing More Footprints (continued)



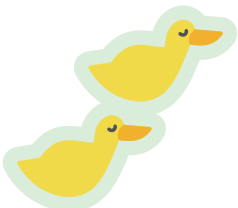
Show your thinking.

4

A hippo's footprint is 14 connecting cubes long.
An alligator's footprint is 6 connecting cubes
shorter than a hippo's footprint.
How long is an alligator's footprint?

answer: _____

equation: _____



Summary 6.11

In a story problem where 2 amounts are being compared, thinking about which amount is unknown can help you represent and solve the problem.

Sean's footprint is 10 connecting cubes long.

A black bear's footprint is 4 cubes shorter than Sean's footprint.

What is the length of a black bear's footprint?

I know the length of Sean's footprint. I need to find the length of the bear's footprint.



black bear ?

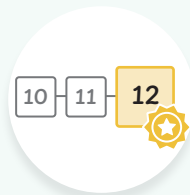
Practice 6.11

Choose from these Centers.



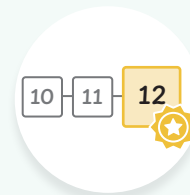
Estimate and Measure

Stage 3



Last Number Wins

Stage 2



Last Number Wins

Stage 3

- 1 A bear's footprint is 16 connecting cubes long.
A wolf's footprint is 9 connecting cubes shorter than
a bear's footprint.
How long is a wolf's footprint?

 Show your thinking.

answer: _____

equation: _____

- 2 A pelican's beak is 18 connecting cubes long.
A toucan's beak is 10 connecting cubes long.
How much longer is a pelican's beak than a
toucan's beak?

 Show your thinking.

answer: _____

equation: _____

Spiral Review

For Problems 3–6, find the sum.

3 $3 + 7$ _____

4 $2 + 6$ _____

5 $2 + 7$ _____

6 $4 + 5$ _____

For Problems 7 and 8, find the sum.

 Show your thinking.

7 $8 + 7 + 5$ _____

8 $5 + 8 + 6$ _____

- 9 Han baked 9 blueberry muffins, 4 banana muffins, and 7 vanilla muffins.
How many muffins did Han bake?

 Show your thinking.

answer: _____

equation: _____

Sharing Is Fun

Let's see how Sean and Trevor share.



Warm-Up



eyes on teacher

I am a doer of math.

What is something you can try when you do not understand a math problem?

Activity

1

Sean's Blocks

Read the story problem and look at the representation.

Sean had some blocks.

He gave 4 blocks to Trevor.

Now Sean has 13 blocks.

How many blocks did Sean have before giving some to Trevor?



1

Discuss



Does the representation show the known and unknown amounts? How do you know?

Building Forts

Hands-On

Solve each problem and write an equation to show how you solved it.

Use an underline to show the answer in the equation.



Show your thinking.

2

Sean had some branches.
He gave 3 branches to Trevor.
Now Sean has 12 branches.
How many branches did Sean have
before giving some to Trevor?

answer: _____

equation: _____

Building Forts (continued)

Solve each problem and write an equation to show how you solved it.

Use an underline to show the answer in the equation.

i Show your thinking.

- 3** Trevor has 11 blankets.
He gives Sean some blankets.
Now Trevor has 8 blankets.
How many blankets did Trevor give Sean?

answer: _____

equation: _____

- 4** Sean has 12 pieces of rope.
He gives Trevor 5 pieces of rope.
How many pieces of rope does Sean have now?

answer: _____

equation: _____

Summary 6.12

In story problems that describe an amount that is taken away, the unknown amount could be the starting amount. To find the starting amount, add the amount that is taken away and the amount that is left over.

Trevor has some blocks.

He gives 6 blocks to Sean.

Now Trevor has 9 blocks.

How many blocks did Trevor have before giving some to Sean?



$$\underline{\quad} - 6 = 9$$

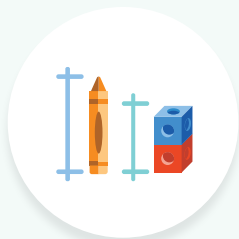
$$6 + 9 = \underline{15}$$

$$\underline{15} - 6 = 9$$

Trevor had 15 blocks before giving some to Sean.

Practice 6.12

You'll play this Center.



Measure and Compare

Stage 1

Let's measure and find the difference in length between 2 objects.

Practice 6.12

Name _____

- 1 Priya and her mom made some granola bars. Priya gave 11 of them to her friend. Now there are 4 bars left. How many granola bars were there to start?

 Show your thinking.

answer: _____

equation: _____

- 2 Han had 13 beads on his bracelet. He took some beads off to give to Clare. Now there are 6 beads on Han's bracelet. How many beads did Han give to Clare?

 Show your thinking.

answer: _____

equation: _____

Spiral Review

For Problems 3–14, find the difference.

3 $5 - 1$ _____

4 $4 - 2$ _____

5 $7 - 2$ _____

6 $9 - 3$ _____

7 $9 - 4$ _____

8 $10 - 4$ _____

9 $8 - 0$ _____

10 $6 - 3$ _____

11 $10 - 3$ _____

12 $6 - 6$ _____

13 $7 - 4$ _____

14 $10 - 8$ _____

For Problems 15–18, find the difference.

 Show your thinking.

15 $13 - 5$ _____

16 $16 - 8$ _____

17 $14 - 9$ _____

18 $15 - 7$ _____

Name _____

Reasoning about Equality

Equal Expressions

1.OA.4, 1.OA.6, 1.OA.7, SMP.2, SMP.3, SMP.4, SMP.7

Addition or Subtraction?

Let's think about different ways story problems can be represented.



Warm-Up



eyes on teacher

I am a mathematician.

When have you tried something in more than 1 way as a mathematician?

Activity

1

Trevor's Story Problems

Discuss

Tell your partner if each story problem can be represented with addition, subtraction, or both. Explain your thinking.

- 1 There were 3 birds in the tree.
Some more birds flew into the tree.
Now there are 11 birds in the tree.
How many birds flew into the tree?

--	--	--	--	--	--	--	--	--	--	--

Trevor's Story Problems (continued)

- 2 There were some squirrels in the tree.
6 squirrels jumped out of the tree.
Now there are 13 squirrels in the tree.
How many squirrels were in the tree at the start?

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Explain how you know if the story problem can be represented with addition, subtraction, or both.

- 3 There are 15 purple flowers and 4 red flowers on a tree.
How many more purple flowers are there than red flowers?

p

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

r

--	--	--	--

Which Equations?

Hands-On

For each problem, circle 2 equations that could be used to find the unknown amount. Create a representation of each problem if it is helpful.

- 4 Sean saw 8 animals by the slide.
He also saw some animals by the park bench.
Altogether Sean saw 11 animals at the park.
How many animals did Sean see by the park bench?

$$8 + 11 = \underline{\quad}$$

$$8 + \underline{\quad} = 11$$

$$11 - 8 = \underline{\quad}$$

Which Equations? (continued)

For each problem, circle 2 equations that could be used to find the unknown amount. Create a representation of each problem if it is helpful.

- 5 Sean has 16 rocks.
Trevor has 10 fewer rocks than Sean.
How many rocks does Trevor have?

$$10 + _ = 16$$

$$10 + 16 = _$$

$$16 - 10 = _$$

- 6 Trevor found some leaves.
Sean gives him 9 more leaves.
Now Trevor has 15 leaves.
How many leaves did Trevor have to start with?

$$_ + 9 = 15$$

$$9 + 15 = _$$

$$9 + _ = 15$$

Summary 6.13

Equations can be used to represent what happens in a story problem. They can also be used to represent different ways to find the unknown amount.

Sean saw 6 kids at the playground.
He also saw some kids on the field.
Altogether he saw 14 kids.
How many kids did Sean see on the field?



$$6 + \underline{\quad} = 14$$

$$14 - 6 = \underline{\quad}$$

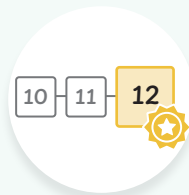
Practice 6.13

Choose from these Centers.



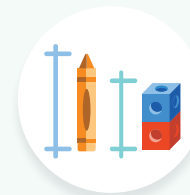
Estimate and Measure

Stage 3



Last Number Wins

Stage 3



Measure and Compare

Stage 1

For Problems 1 and 2, circle 2 equations that could be used to find the unknown amount.



Show your thinking.

1

Diego has 14 marbles.

He gave some of them to Shawn.

Now Diego has 6 marbles.

How many marbles did Diego give to Shawn?

$14 + 6 = \underline{\quad}$

$6 + \underline{\quad} = 14$

$14 - 6 = \underline{\quad}$

2

Han picked some flowers.

Jada gives him 4 more flowers.

Now Han has 12 flowers.

How many flowers did Han have to start?

$\underline{\quad} + 4 = 12$

$4 - 12 = \underline{\quad}$

$4 + \underline{\quad} = 12$

Spiral Review

For Problems 3–8, find the difference.

3 $8 - 3$ _____

4 $6 - 2$ _____

5 $10 - 7$ _____

6 $7 - 3$ _____

7 $9 - 6$ _____

8 $6 - 4$ _____

For Problems 9 and 10, find the difference.

 Show your thinking.

9 $12 - 7$ _____

10 $17 - 9$ _____

- 11 Shawn has been to 4 countries in North America, 7 countries in Asia, and 4 countries in Europe. How many countries has Shawn been to?

 Show your thinking.

answer: _____

equation: _____

Name _____

Reasoning about Equality

Equal Expressions

1.OA.8, 1.OA.1, 1.OA.6, SMP.2, SMP.4, SMP.7, SMP.8

All Types of Problems

Let's see how Trevor and Sean play games.



Warm-Up



eyes on teacher

We are a math community.

Trevor and Sean like to do things together. Who do you like to do math with and why?

Activity

1

Playing a Card Game

Solve each problem and write an equation to show how you solved it.

Use an underline to show the answer in the equation.

i Show your thinking.

- 1 There were some playing cards in the box. Sean took 5 cards out of the box. Now there are 12 cards in the box. How many cards were in the box to start?

answer: _____

equation: _____

1

Playing a Card Game (continued)

Solve each problem and write an equation to show how you solved it.

Use an underline to show the answer in the equation.



Show your thinking.

2

Trevor had 8 points after the first round of the game. In the second round, he earned some more points. Then he had a total of 16 points. How many points did Trevor earn in the second round of the game?

answer: _____

equation: _____

3

Sean had 6 points. Sean's mom had 9 more points than Sean. How many points did Sean's mom have?

answer: _____

equation: _____

Finding Unknown Numbers

Hands-On 

Find the number that makes each equation true.

 Show your thinking.

4 $14 - \underline{\quad} = 6$

5 $\underline{\quad} - 13 = 5$

Finding Unknown Numbers (continued)

Find the number that makes each equation true.

 Show your thinking. _____

6 $20 = 5 + \underline{\hspace{2cm}}$

7 $\underline{\hspace{2cm}} - 15 = 4$

8 Discuss 

How did you find the unknown number for Problem 5?

I found the unknown number by _____.

- 1 Clare has 9 crayons.
Diego has 6 more crayons than Clare.
How many crayons does Diego have?

 Show your thinking.

answer: _____

equation: _____

- 2 Han had 14 stamps in his collection.
He got some more from Shawn.
Now he has a total of 19 stamps.
How many stamps did Han get from Shawn?

 Show your thinking.

answer: _____

equation: _____

Spiral Review

For Problems 3–10, find the sum or difference.

3 $6 + 2$ _____

4 $4 - 2$ _____

5 $7 - 2$ _____

6 $3 + 5$ _____

7 $4 + 6$ _____

8 $8 - 4$ _____

9 $7 + 2$ _____

10 $9 - 3$ _____

For Problems 11–16, find the sum or difference.

 Show your thinking.

11 $16 + 2$ _____

12 $15 + 4$ _____

13 $5 + 9 + 5$ _____

14 $19 - 2$ _____

15 $15 - 8$ _____

16 $17 - 12$ _____

Name _____

Make Sense of Data

Equal Expressions

1.MD.4, 1.OA.6, 1.OA.7, SMP.2, SMP.3, SMP.7

Keeping Score

Let's ask and answer questions about Sean and Trevor's data.



Warm-Up



eyes on teacher

I can be all of me in math class.
What types of math games do you like to play and why?

Activity

1

Questions About Math Centers

Hands-On

Sean and Trevor recorded the number of rounds they played for each Math Center.

Math Center	Number of rounds
Estimate and Measure	8 rounds
Last Number Wins	4 rounds
Measure and Compare	6 rounds

Questions About Math Centers (continued)

1 Discuss 

What questions could you ask about the data?

- How many more rounds of _____ did they play than _____?
- How many fewer rounds of _____ did they play than _____?
- How many total rounds _____?

2 Write a question you want to answer.

3 Find the answer to your question in Problem 2. Write an equation to show how you solved the problem. Use an underline to show the answer.

 Show your thinking. _____

answer: _____

equation: _____

Missing Measurement

Hands-On

Sean and Trevor recorded the lengths of the book and computer screen.

Object	Length
book	15 connecting cubes
pencil	
computer screen	17 connecting cubes



Missing Measurement (continued)

Use the data in the table to help solve the problem.
Write an equation to show how you solved it.
Use an underline to show the answer in the equation.

- 4 The pencil is 9 connecting cubes shorter than the book.
What is the length of the pencil?

 **Show your thinking.** _____

answer: _____

equation: _____

- 5 You found the missing measurement! Record the length of the pencil in the table.

Summary 6.15

You can use addition and subtraction strategies that you know to interpret data.

Heights of Towers	
blue tower	9 unit cubes
red tower	5 unit cubes
yellow tower	2 unit cubes

What is the height of all the towers?



$$9 + 2 + 5 = \underline{\quad}$$
$$\begin{array}{c} 2 \\ / \quad \backslash \\ 1 \quad 1 \end{array}$$

$$9 + 1 = 10$$

$$10 + 5 = 15$$

$$15 + 1 = \underline{16}$$

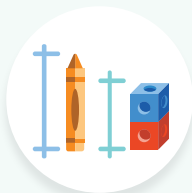
Practice 6.15

Choose from these Centers.



Math Stories

Stage 4



Measure and Compare

Stage 1



What's Behind My Back?

Stage 4

For Problems 1 and 2, use the information in the table. Jada recorded the points she scored for a game.

Round	Points
first round	11 points
second round	7 points
third round	



Show your thinking.

1

Jada scored 5 more points in the third round than the second round.

How many points did she score in the third round?

answer: _____ equation: _____

2

How many fewer points did she score in the second round than the first round?

answer: _____ equation: _____

Spiral Review

For Problems 3–8, find the sum or difference.

3 $3 + 3$ _____

4 $3 + 7$ _____

5 $6 - 2$ _____

6 $9 - 4$ _____

7 $2 + 5$ _____

8 $10 - 6$ _____

For Problems 9 and 10, find the sum or difference.

 Show your thinking.

9 $4 + 16$ _____

10 $14 - 7$ _____

- 11 At a book fair, Diego bought 7 picture books, 8 comic books, and 4 chapter books.
How many books did Diego buy?

 Show your thinking.

answer: _____ equation: _____



Notes:

Math at Work

Sandhill cranes are large birds, with lengths up to 120 centimeters. They can weigh up to 12 pounds. They make different sounds. Some of the noises they make even sound like purring or snoring!

Bird scientists study birds to learn about where they live, what they eat, and more. They might measure the length of a bird's wing or its height.



paulaphoto/Shutterstock.com. Catcher of Light, Inc./Shutterstock.com.

Math in the World

The Harpy eagle weighs up to 20 pounds. About how much more can a Harpy eagle weigh than a Sandhill crane?



Murilo Mazzo/Shutterstock.com.

Math Mindset

Why is it important to use the same size of units when measuring length?

Unit 7

Geometry and Time



Big Ideas in This Unit

cc1 Make Sense of Data cc2 Clocks and Time Reasoning About Equality
cc3 Tens and Ones cc4 Equal Parts Inside Shapes

Questions for Investigation

- How can you describe and build shapes in your environment?
- How can you split shapes into equal parts?
- How can you use the positions of the hour and minute hands to tell time to the hour and half hour?



Explore: Solid Shape Hunt

Which solid shape will you see the most in our school?



Unit Story: A Potluck for Pia

In this story, Pia and her family are welcomed to their new neighborhood with a potluck.



Watch Your Knowledge Grow

This is the math you'll explore in this unit. Rate your understanding to see how your knowledge grows!

— —
 Not yet Almost I got it!

I can . . .	Before	After
Draw and identify triangles and rectangles.	<input type="radio"/> — <input type="radio"/> — <input type="radio"/>	<input type="radio"/> — <input type="radio"/> — <input type="radio"/>
Identify rectangles and squares.	<input type="radio"/> — <input type="radio"/> — <input type="radio"/>	<input type="radio"/> — <input type="radio"/> — <input type="radio"/>
Build larger shapes using smaller shapes.	<input type="radio"/> — <input type="radio"/> — <input type="radio"/>	<input type="radio"/> — <input type="radio"/> — <input type="radio"/>
Splits shapes into halves or fourths.	<input type="radio"/> — <input type="radio"/> — <input type="radio"/>	<input type="radio"/> — <input type="radio"/> — <input type="radio"/>
Identify halves and fourths in a given shape.	<input type="radio"/> — <input type="radio"/> — <input type="radio"/>	<input type="radio"/> — <input type="radio"/> — <input type="radio"/>
Describe equal parts of shapes.	<input type="radio"/> — <input type="radio"/> — <input type="radio"/>	<input type="radio"/> — <input type="radio"/> — <input type="radio"/>
Compare sizes of halves and fourths of the same shape.	<input type="radio"/> — <input type="radio"/> — <input type="radio"/>	<input type="radio"/> — <input type="radio"/> — <input type="radio"/>
Write time in hours and half hours.	<input type="radio"/> — <input type="radio"/> — <input type="radio"/>	<input type="radio"/> — <input type="radio"/> — <input type="radio"/>
Use what I know about clocks to tell time.	<input type="radio"/> — <input type="radio"/> — <input type="radio"/>	<input type="radio"/> — <input type="radio"/> — <input type="radio"/>

Flat and Solid Shapes

✦ Unit Story: A Potluck for Pia



Evgrafova Svetlana/Shutterstock.com

Sometimes, when Pia watches Nonna cook, she uses boxes and cans to build castles.

What shapes do you see in Nonna's kitchen?

Name _____

Equal Parts Inside Shapes

Building Toward 1.G.1, SMP.1, SMP.3, SMP.7

Explore: Solid Shape Hunt

Which solid shape will you see the most in our school?



Warm-Up



eyes on teacher



We are a math community.

Where have you seen shapes in the communities you live in?

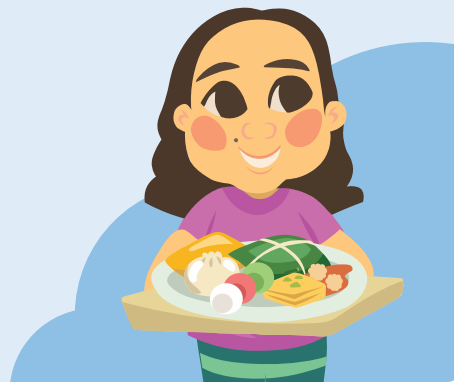
Discuss



What do you notice? What do you wonder?

A Potluck for Pia

Unit Story





Name _____

Which solid shape will you see the most in our school?

- Which shape do you predict you will see the most?
- Work with your partner to record the solid shapes you find to see if your prediction is correct.

Ways to be a mathematician

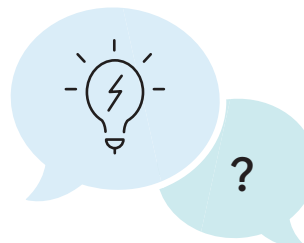
- 1 I can take my time to think about a challenging problem before trying to solve it.

○ ——— ○ ——— ○
Not yet Almost I got it!



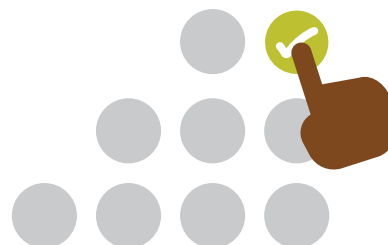
- 2 I can explain why my thinking makes sense and ask questions to understand the thinking of others.

○ ——— ○ ——— ○
Not yet Almost I got it!



- 3 I can see how ideas are connected and use patterns to help solve problems.

○ ——— ○ ——— ○
Not yet Almost I got it!



Building With Nonna and Pia

Let's put solid shapes together to build other solid shapes.



Warm-Up



eyes on teacher



I am a doer of math.

Pia's neighbors shared special foods at the potluck. What do you share in math class?

Activity

1

Building Shape Castles

Hands-On

- 1 Build a castle with solid shapes.
- 2 Name the shapes you used to build your favorite part.

3 Discuss

What is different about the shapes in the castle you built and the shapes in the castle another pair built?

- We used _____ to build _____.
- They used _____ to build _____.

Building Rectangular Prisms

Hands-On

- 4 Build as many different rectangular prisms as you can.
- 5 Describe how other pairs built their rectangular prisms.

Pair 1: _____

Pair 2: _____

Summary 7.02

Solid shapes, such as **rectangular prisms** and **triangular prisms**, can be combined to build larger solid shapes and objects.



Practice 7.02

You'll play this Center.



Solid Shapes

Stage 3

Let's describe solid shapes so your partner can find them.

Practice 7.02

Name _____

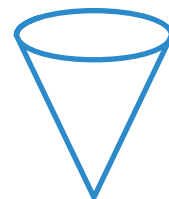
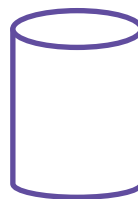
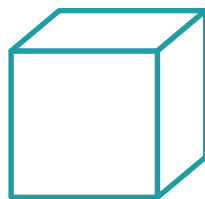
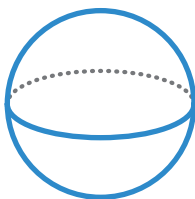
- 1 Look at this Italian castle.
What solid shapes do you see?



- 2 Look at what Clare made.
What solid shapes do you see?



- 3 Clare felt a shape in a bag.
She felt a point and a curve.
Circle the shape that could be in the bag.



top: Alessandro Colle/Shutterstock.com;
middle: Alfa Photostudio/Shutterstock.com

Spiral Review

For Problems 4–13, find the sum or difference.

4 $3 + 1$ _____

5 $5 + 1$ _____

6 $6 - 1$ _____

7 $4 - 1$ _____

8 $4 + 1$ _____

9 $8 + 1$ _____

10 $9 + 1$ _____

11 $9 - 1$ _____

12 $5 - 1$ _____

13 $7 + 1$ _____

For Problems 14–17, find the sum.

 Show your thinking.

14 $10 + 6$ _____

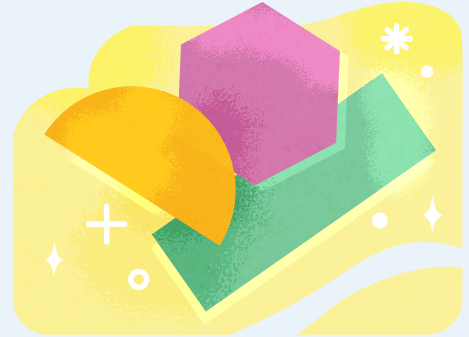
15 $3 + 10$ _____

16 $25 + 3$ _____

17 $25 + 30$ _____

What Shapes Go With the Spotlight Shape?

Let's figure out how different flat shapes are alike.



Warm-Up



eyes on teacher



I can be all of me in math class.
Different shapes can be alike in many ways. How are you and other students alike in math?

Activity

1

In the Spotlight!

Hands-On

- 1 Place a shape on your mat. This is your spotlight shape. Draw your spotlight shape.

Draw

A large, empty rectangular box with rounded corners and a light green border, intended for drawing a spotlight shape.

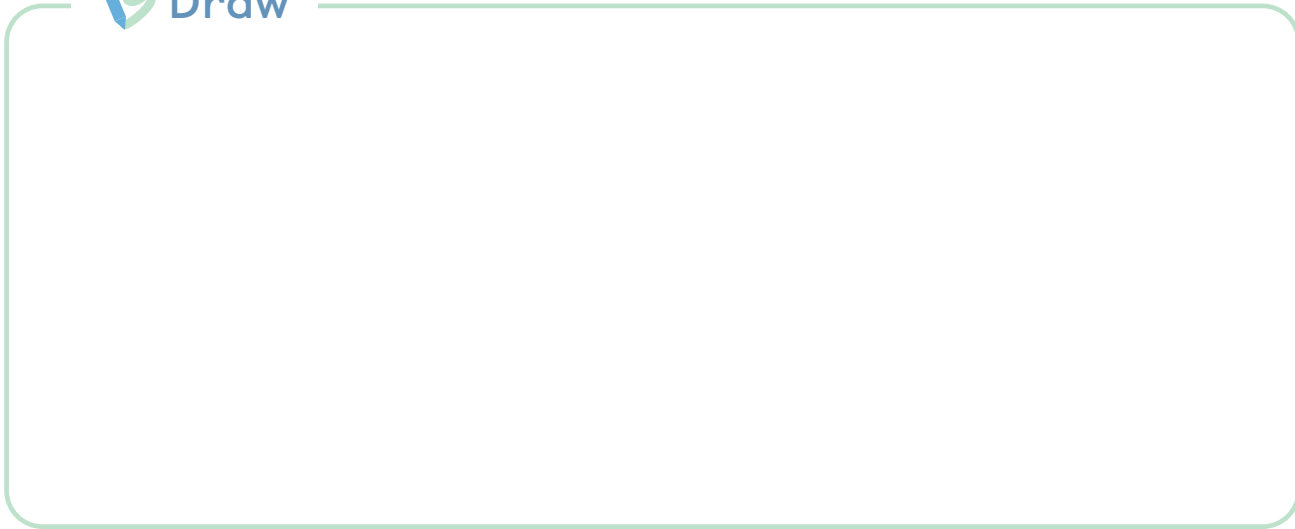
In the Spotlight! (continued)

- 2 Choose **1 attribute** of your spotlight shape. Find other shapes with the same attribute and place them on your mat.
- 3 What attribute do all the shapes on your mat have in common?

What's the Attribute?

4 Draw another pair's spotlight shape.

 Draw

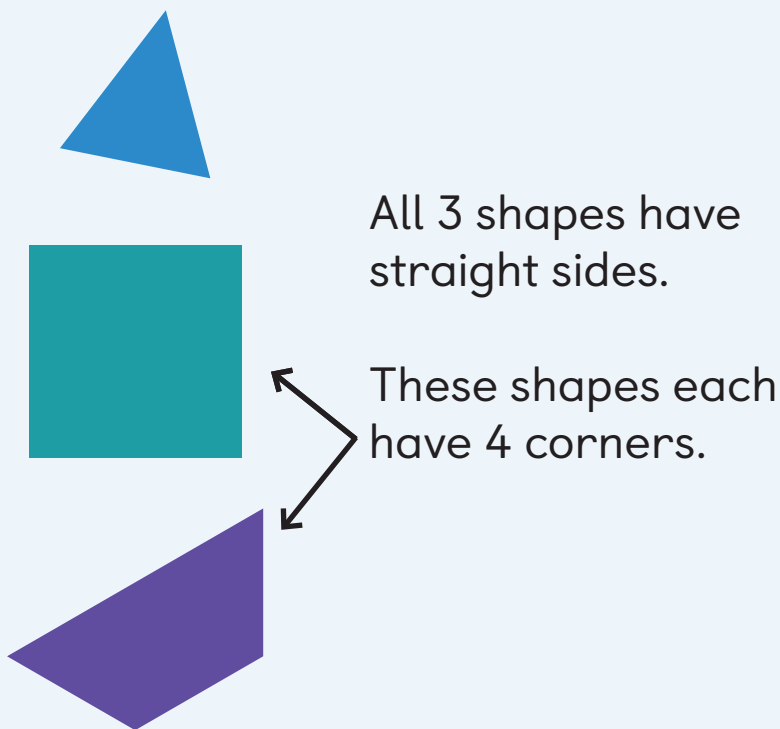


5 What attribute do all the shapes on their mat have in common?



Summary 7.03

Flat shapes can be described, compared, and sorted based on their **attributes**.



Practice 7.03

Choose from these Centers.



Cover Up

Stage 9



Solid Shapes

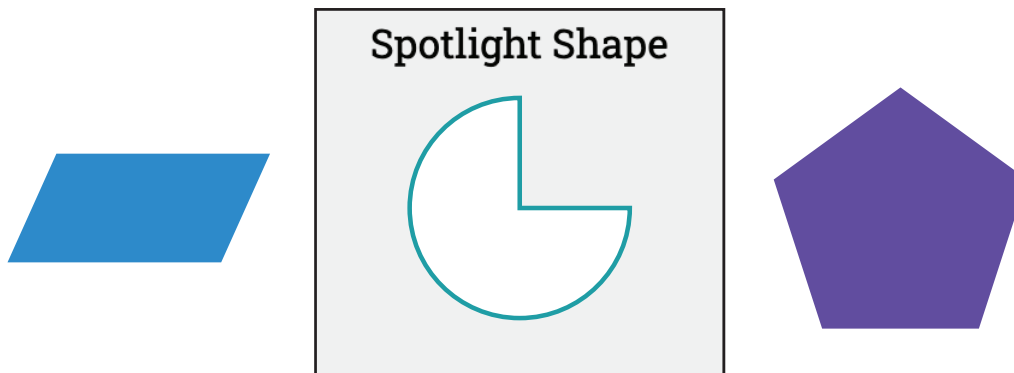
Stage 3



Target Numbers

Stage 3

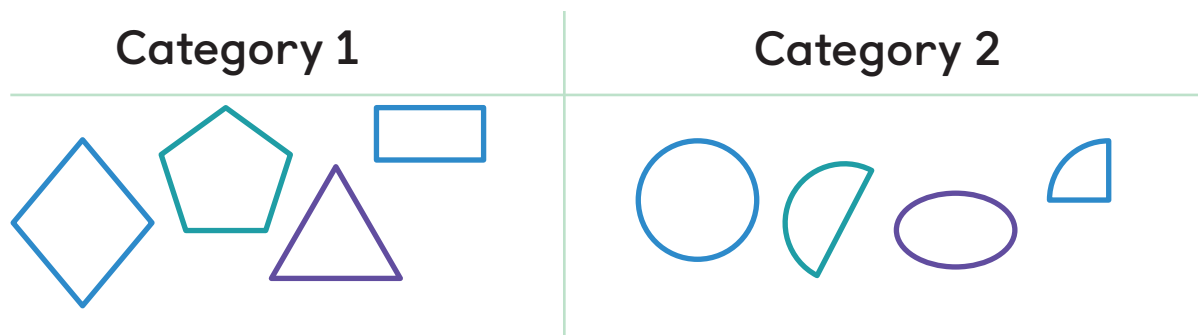
For Problems 1–3, look at the shapes placed around the spotlight shape.



1 What is 1 attribute the shapes have in common?

2 What is 1 attribute that the spotlight shape has that the other shapes do not have?

3 Diego sorted some shapes. Which category does the spotlight shape belong to?



answer: _____

Spiral Review

For Problems 4–13, find the sum or difference.

4 $1 + 2$ _____

5 $6 - 2$ _____

6 $4 + 2$ _____

7 $7 - 2$ _____

8 $5 - 2$ _____

9 $7 + 2$ _____

10 $2 + 2$ _____

11 $9 - 2$ _____

12 $3 + 2$ _____

13 $10 - 2$ _____

For Problems 14–17, find the sum.

 Show your thinking.

14 $60 + 2$ _____

15 $4 + 30$ _____

16 $53 + 4$ _____

17 $53 + 40$ _____

Drawing Flat Shapes

Let's draw and describe triangles and rectangles.



Warm-Up



eyes on teacher



I can be all of me in math class.
You have been describing different shapes. What is a word or phrase that describes you?

Activity

1

All Triangles, All Rectangles

Hands-On

- 1 On your dot paper, draw as many different triangles and rectangles as you can.
- 2 What attributes describe all your triangles?

- 3 What attributes describe all your rectangles?

Always, Sometimes, Never

Hands-On

Circle to show if each statement is *always* true, *sometimes* true, or *never* true.

- 4 Triangles have 1 corner on top and 2 corners on the bottom.

always

sometimes

never

- 5 Triangles have 4 sides and 4 corners.

always

sometimes

never

- 6 Rectangles are green.

always

sometimes

never

- 7 Rectangles have 4 square corners.

always

sometimes

never

Summary 7.04

Some attributes describe some triangles or rectangles.
Other attributes describe all triangles or rectangles.
All rectangles have 4 square corners.



<u>Always true</u>	<u>Sometimes true</u>	<u>Never true</u>
<ul style="list-style-type: none">• Rectangles have 4 square corners.• Triangles have 3 sides.	<ul style="list-style-type: none">• Triangles have a square corner.• Rectangles are green.	<ul style="list-style-type: none">• Rectangles have 5 sides.• Squares have 1 curved side.

Practice 7.04

You'll play this Center.



Can You Draw It? Stage 2

Let's describe and draw shapes.

Practice 7.04

Name _____

- 1 Han said that triangles are sometimes red. Do you agree with him? Why or why not?



- 2 Han drew a shape. What could you look for to see if it was a triangle?

- 3 Complete Han's drawing to show a rectangle and a triangle.

 Draw



Spiral Review

For Problems 4–13, find the sum or difference.

4 $2 + 3$ _____

5 $5 + 3$ _____

6 $5 - 3$ _____

7 $7 - 3$ _____

8 $4 + 3$ _____

9 $6 + 3$ _____

10 $10 - 3$ _____

11 $8 - 3$ _____

12 $3 + 3$ _____

13 $10 - 3$ _____

For Problems 14–17, find the sum.

 Show your thinking.

14 $13 + 4$ _____

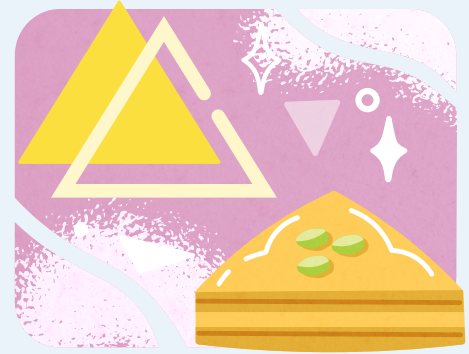
15 $2 + 17$ _____

16 $6 + 32$ _____

17 $60 + 32$ _____

Some Triangles, All Triangles

Let's explore what makes
a shape a triangle.



Warm-Up



eyes on teacher



I am a doer of math.

Think of a time you shared your
idea in math class. How did you
feel before and after sharing?

Activity

1

Mix and Mingle: Triangles

Hands-On A blue hand icon.

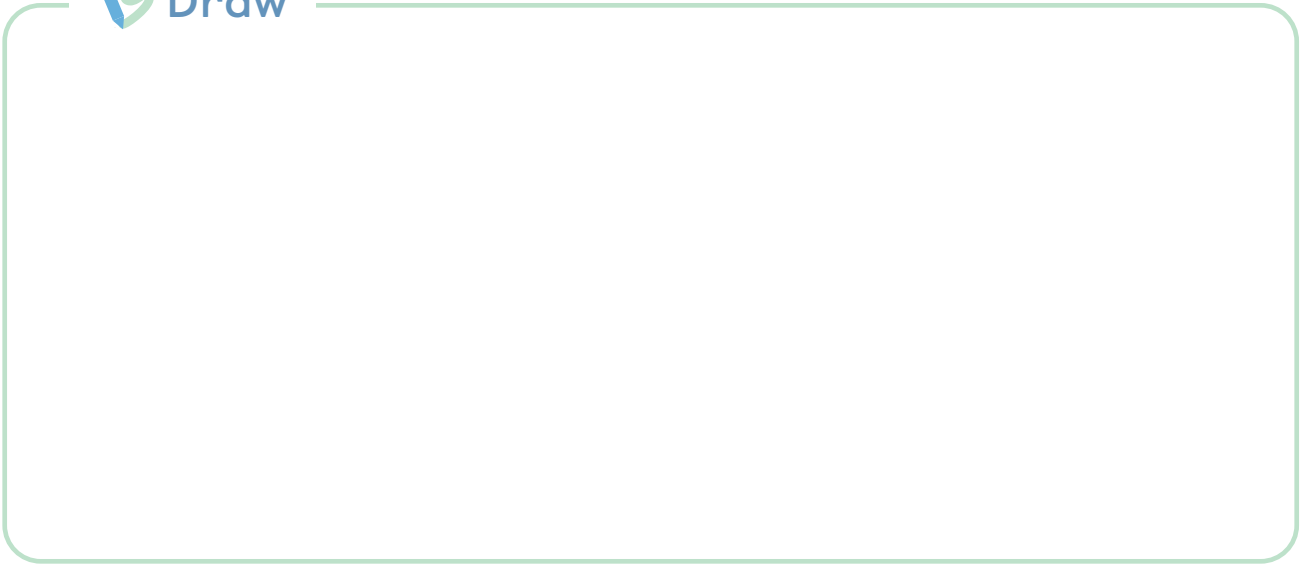
1 Discuss A green speech bubble icon.

Decide if your partner's shape is a triangle and explain
how you know.

Mix and Mingle: Triangles (continued)

2 Draw a shape that is not a triangle.

 Draw

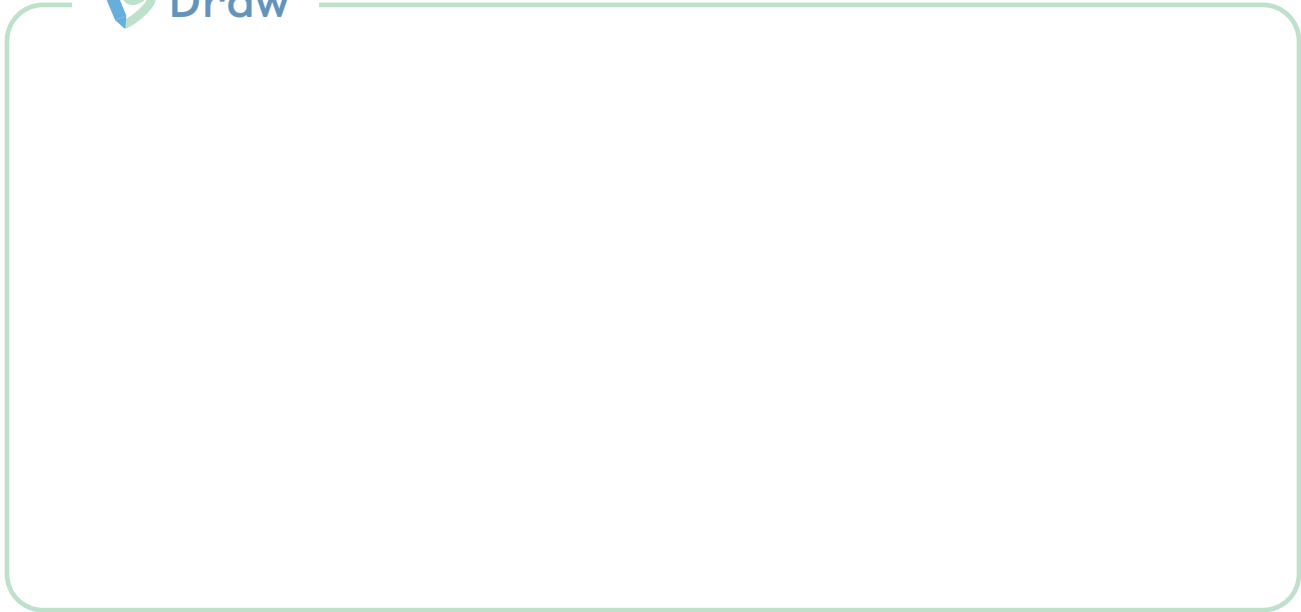


3 Explain how you know your shape is not a triangle.

Drawing Triangles

4 Draw 3 different triangles.

 Draw



5 Discuss 

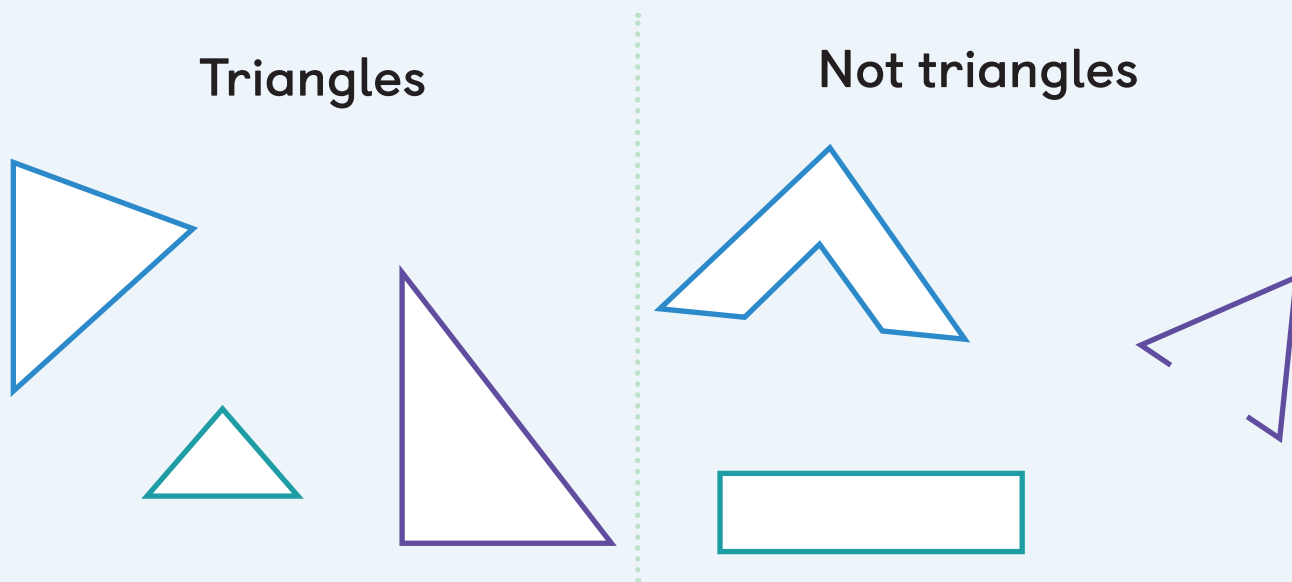
How are the triangles you and your partner drew alike?
How are they different?

- The triangles we drew are alike because _____.
- The triangles we drew are different because _____.



Summary 7.05

Triangles have 3 straight sides. All the sides must touch to make 3 corners.



Practice 7.05

Choose from these Centers.



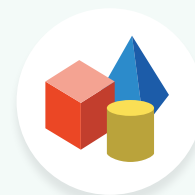
Can You Draw It?

Stage 2



Cover Up

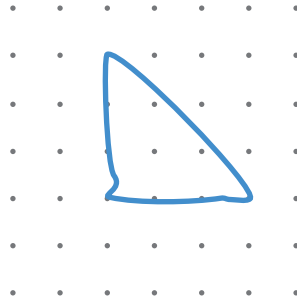
Stage 9



Solid Shapes

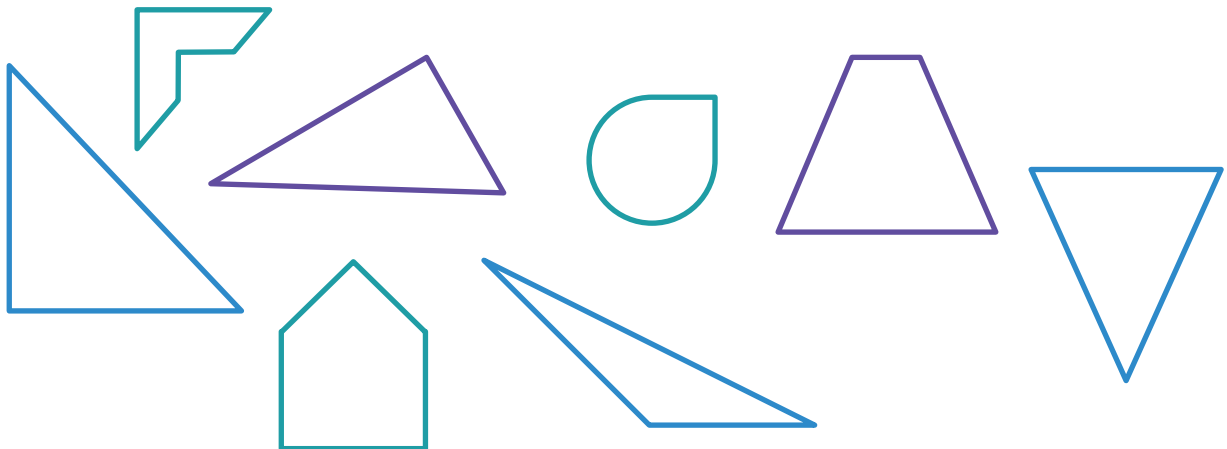
Stage 3

- 1** Jada drew this shape. Priya said it is not a triangle. Do you agree or disagree and why?



- 2** If Jada tries to draw the shape again, what could she do to make it a triangle?

- 3** Cross out **4** shapes that are *not* triangles.



Spiral Review

For Problems 4–13, find the sum or difference.

4 $2 + 4$ _____

5 $10 - 4$ _____

6 $4 + 4$ _____

7 $8 - 4$ _____

8 $6 - 4$ _____

9 $1 + 4$ _____

10 $7 - 4$ _____

11 $3 + 4$ _____

12 $5 + 4$ _____

13 $9 - 4$ _____

For Problems 14–17, find the sum.

 Show your thinking.

14 $2 + 12$ _____

15 $14 + 4$ _____

16 $5 + 21$ _____

17 $50 + 21$ _____

Picky Eaters

Let's explore what shapes different monsters like to eat.



Warm-Up

1

eyes on teacher

I am a doer of math.

In math class, how do you want others to respond when you make a mistake?

Activity

1

What Shapes Will Rex Eat?

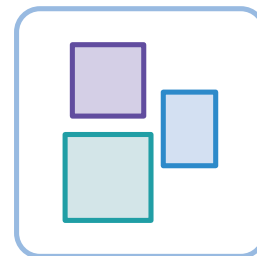
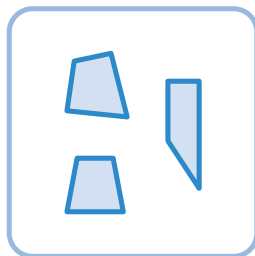
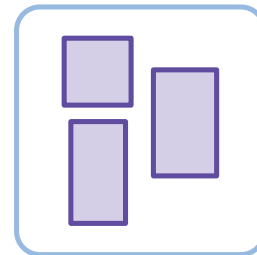
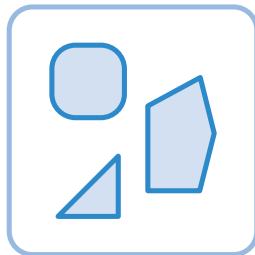
2

Discuss

What do you notice about the shapes *Rex can* eat?

3

For each problem, feed Rex by circling the plates that have only rectangles.



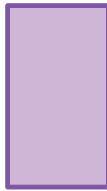
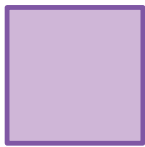
What Shapes Will Rex Eat? (continued)

4

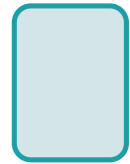
Discuss 

What makes a shape a rectangle?

Rectangles



Not rectangles



A shape is a rectangle if _____

What Shapes Will Squish Eat?

5

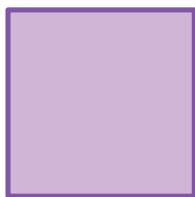
Let's figure out which shapes Squish will eat.

6

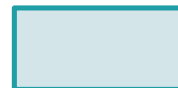
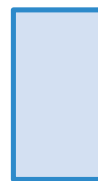
Discuss 

What do you notice about the shapes Squish *can* eat?

Can eat:

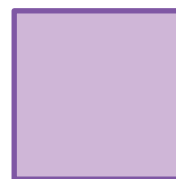
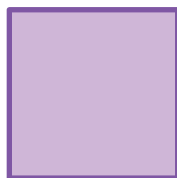


Cannot eat:



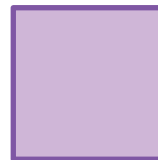
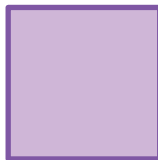
7

For each problem, feed Squish by circling the shape that is a *square*.



What Shapes Will Squish Eat? (continued)

7



8

Discuss 

Rex can eat all of these shapes, but Squish cannot. Why?

Rectangles



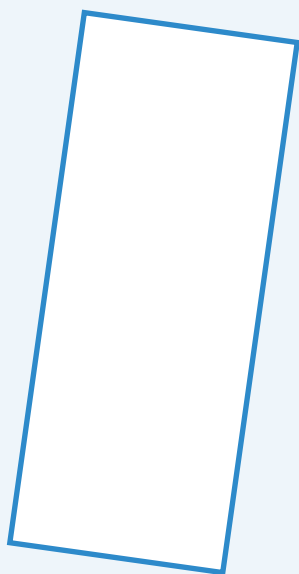
Squares



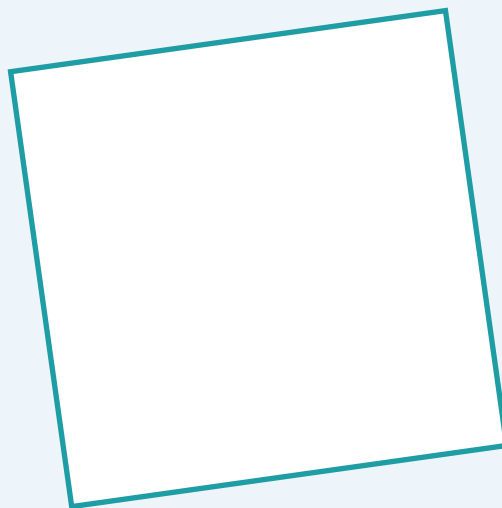
- Rex *can* eat all of these shapes because _____.
- Squish *cannot* eat all of these shapes because _____.

Summary 7.06

Rectangles are shapes with 4 square corners and 4 sides that are touching. Squares are a type of rectangle with 4 sides that are the same length.



- rectangle



- rectangle
- square

Practice 7.06

Choose from these Centers.



Can You Draw It?

Stage 2



Cover Up

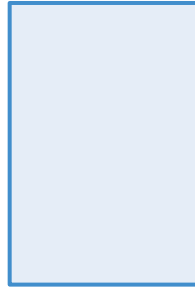
Stage 9



Solid Shapes

Stage 3

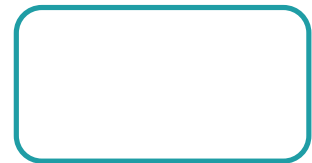
For Problems 1 and 2, use the shape.



1 Is the shape a square? Why or why not?

2 Is the shape a rectangle? Why or why not?

3 Cross out 3 shapes that are *not* rectangles.



Spiral Review

For Problems 4–11, find the sum or difference.

4 $1 + 5$ _____

5 $8 - 5$ _____

6 $10 - 5$ _____

7 $4 + 5$ _____

8 $2 + 5$ _____

9 $7 - 5$ _____

10 $9 - 5$ _____

11 $3 + 5$ _____

For Problems 12–17, find the sum.

 Show your thinking.

12 $6 + 6$ _____

13 $6 + 7$ _____

14 $7 + 7$ _____

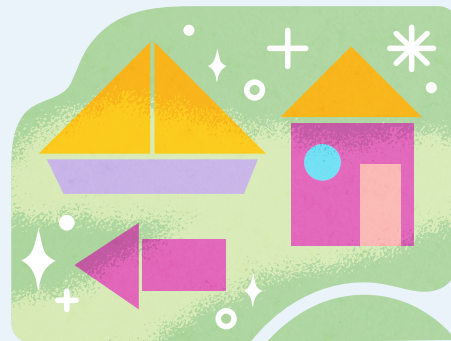
15 $7 + 8$ _____

16 $56 + 12$ _____

17 $32 + 43$ _____

Building Shapes From Flat Shapes

Let's make shapes using smaller shapes.



Warm-Up



eyes on teacher



I am a doer of math.

In math class, how might someone else's mistake help you learn?

Activity

1

Transforming Triangles

Hands-On 

- 1 Draw the new shape you built. Include the outline of each triangle.

 Draw

Transforming Triangles (continued)

2 Use colors to outline different shapes you see inside the shape you made.

3 What shapes do you see in your new shape?

I see _____ made of _____.



Swapping Shapes

Hands-On

- 4 Build the design.
- 5 Replace pattern blocks with smaller pattern blocks that make the same shapes.

6 Discuss

Describe the changes you made to the design.

- We replaced _____ with _____.
- We also replaced _____ with _____.



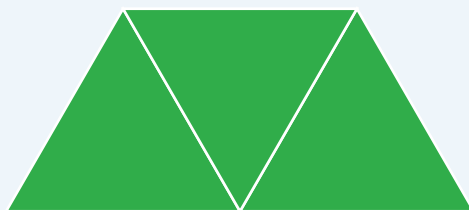
Summary 7.07

You can build the same shape in more than 1 way and name the shapes used to make it.

A trapezoid can be made with:



1 rhombus and 1 triangle



3 triangles

Practice 7.07

You'll play this Center.

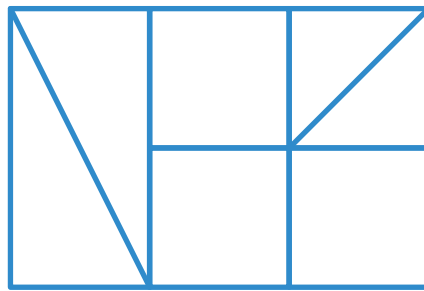


How Are They the Same?

Stage 1

Let's draw shapes that have shared attributes.

For Problems 1–3, use the shape.



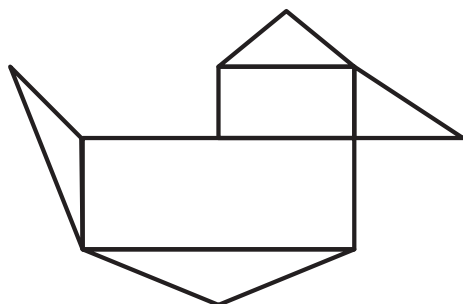
1 How many squares can you count?

answer: _____

2 What did you look for to find the squares?

3 What other shapes do you see?

4 How many of each shape can be found inside the larger shape?



_____ triangles

_____ rectangles

_____ squares

Spiral Review

For Problems 5–10, find the sum or difference.

5 $2 + 6$ _____

6 $10 - 6$ _____

7 $3 + 6$ _____

8 $9 - 6$ _____

9 $8 - 6$ _____

10 $4 + 6$ _____

For Problems 11–16, find the sum.

 Show your thinking.

11 $9 + 4$ _____

12 $9 + 6$ _____

13 $3 + 9$ _____

14 $9 + 8$ _____

15 $23 + 35$ _____

16 $14 + 72$ _____

Halves and Quarters

✦ Unit Story: A Potluck for Pia



Cavan-Images/Shutterstock.com

Magda is cutting dough for pierogis.

If she cuts the dough into 2 pieces, how could she know if they are the same size?

Name _____

Making Sense of Data

Equal Parts Inside Shapes

1.G.1, 1.G.2, 1.G.3, 1.MD.4, SMP.3, SMP.6,

SMP.7

Dinner and Dessert

Let's explore parts of shapes.



Warm-Up



eyes on teacher



I am a doer of math.

Describe a time you learned from a mistake in math class.

Activity

1

Building Circles for Pierogi

Hands-On 

- 1 Build circles using 4 parts for each circle.

4 Equal Parts

Hands-On

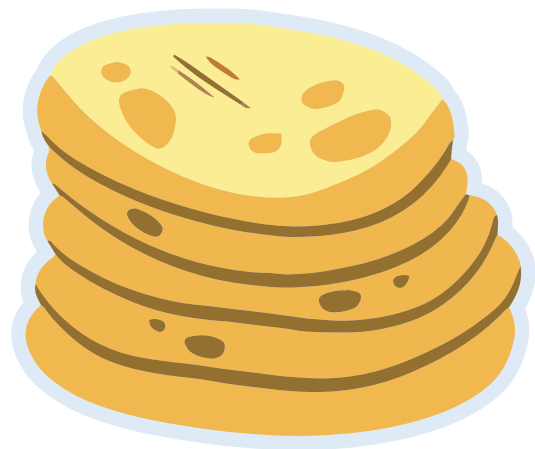
2 Sort the cards into these groups.

4 equal parts	4 unequal parts	more than 4 parts
---------------	-----------------	-------------------

3 Discuss 

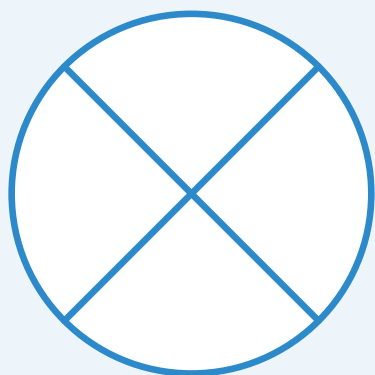
Tell your partner how you know the parts are equal.

I know the parts are equal because _____.



Summary 7.08

When a shape is split into 4 equal parts, those parts are called **fourths**, or **quarters**.



fourths The parts of a shape that are partitioned into 4 equal parts.

Practice 7.08

Choose from these Centers.



Can You Draw It?

Stage 2



Cover Up

Stage 9



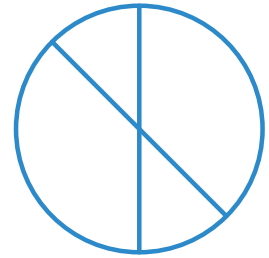
How Are They
the Same?

Stage 1

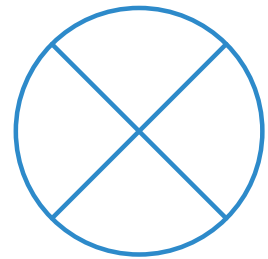
Practice 7.08

Name _____

1 Tell if the circle is split into fourths and explain your thinking.



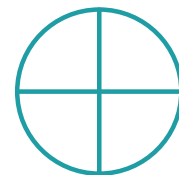
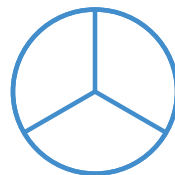
2 Tell if the circle is split into fourths and explain your thinking.



3 Circle 2 rectangles that are split into fourths.



4 Circle 3 shapes that are split into fourths.



Spiral Review

For Problems 5–10, find the sum or difference.

5 $2 + 7$ _____

6 $8 - 7$ _____

7 $1 + 7$ _____

8 $9 - 7$ _____

9 $10 - 7$ _____

10 $3 + 7$ _____

For Problems 11–16, find the sum.

 Show your thinking.

11 $8 + 4$ _____

12 $8 + 6$ _____

13 $5 + 8$ _____

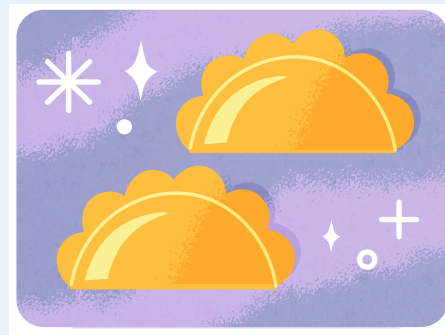
14 $8 + 9 + 2$ _____

15 $48 + 4$ _____

16 $8 + 65$ _____

Preparing Pierogies

Let's explore shapes that are split into 2 parts in different ways.



Warm-Up



eyes on teacher



We are a math community.

Think of a time when you had to share something. How did you share it fairly?

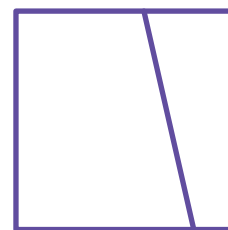
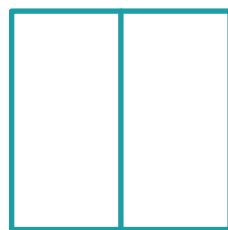
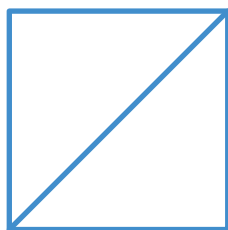
Activity

1

Pierogi Parts

Circle 2 shapes that show 2 equal parts.

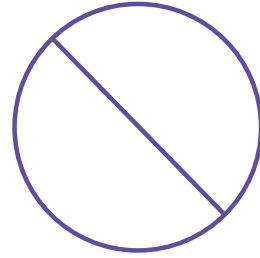
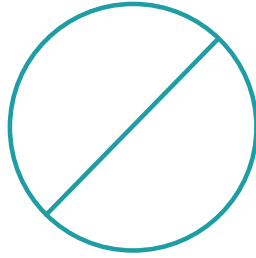
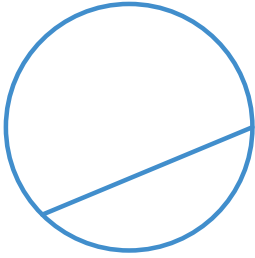
1



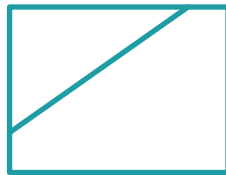
Pierogi Parts (continued)

Circle 2 shapes that show 2 equal parts.

2



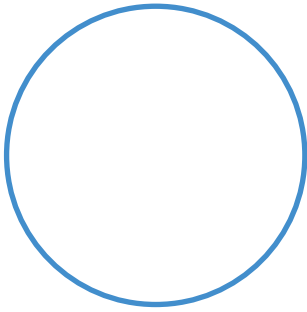
3



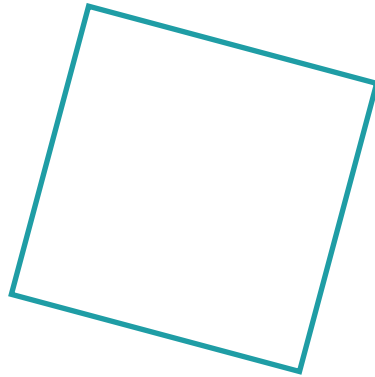
Folding Pierogi Dough

Draw **1** line on each shape to split it into halves.

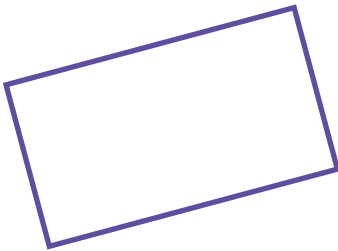
4



5



6



7

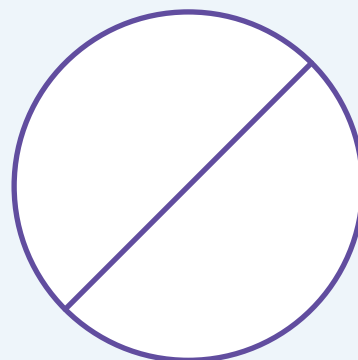
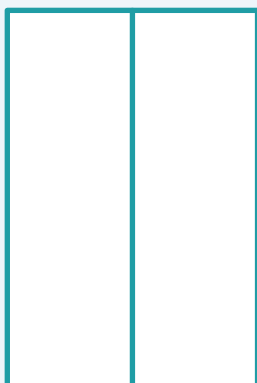
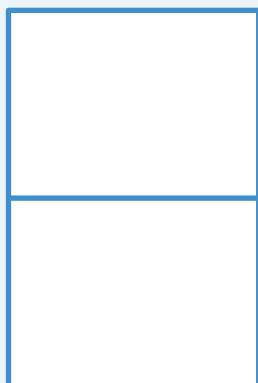
Discuss 

Tell your partner how you know the shapes are split into halves.

I know the parts split into halves because _____.

Summary 7.09

Shapes can be split into equal parts. When there are 2 equal parts, the shape is split into **halves**.



halves The parts of a shape that are partitioned into 2 equal parts.

Practice 7.09

Choose from these Centers.



Can You Draw It?

Stage 2



Cover Up

Stage 9



How Are They
the Same?

Stage 1

Practice 7.09

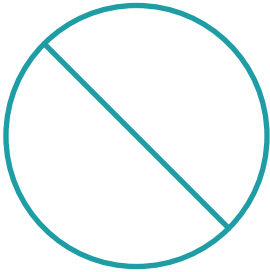
Name _____

For Problems 1–4, circle to show if the shape is split into halves.

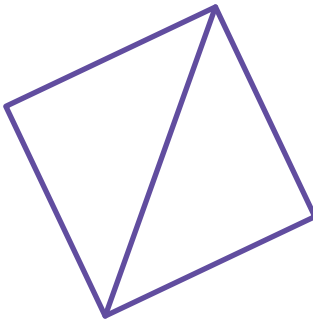
1



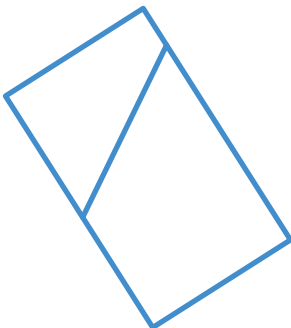
2



3



4



Spiral Review

For Problems 5–10, find the sum or difference.

5 $2 + 8$ _____

6 $9 - 8$ _____

7 $10 - 8$ _____

8 $1 + 9$ _____

9 $1 + 8$ _____

10 $10 - 9$ _____

For Problems 11–16, find the sum.

 Show your thinking.

11 $7 + 4$ _____

12 $7 + 5$ _____

13 $9 + 7$ _____

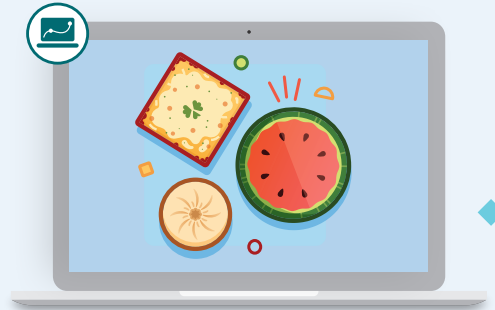
14 $7 + 6$ _____

15 $7 + 56$ _____

16 $69 + 4$ _____

Fair and Square

Let's help Pia split foods at the potluck into equal parts.



Warm-Up

1

eyes on teacher

I am a doer of math.

Manuel and Pia noticed shapes at the potluck. What is a place where you might notice shapes?

Activity

1

Fair Shares

Use the small circles to help you draw lines to split the foods into equal parts.

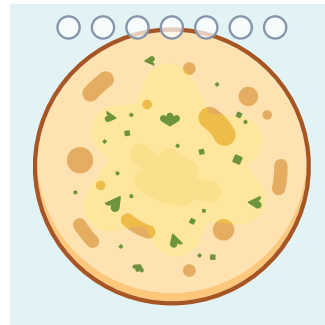
2

Draw a line to split the food into halves.



3

Draw a line to split the food into halves.

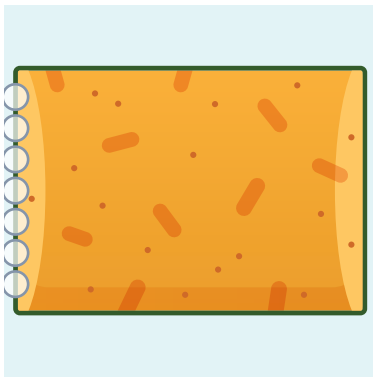


Fair Shares (continued)

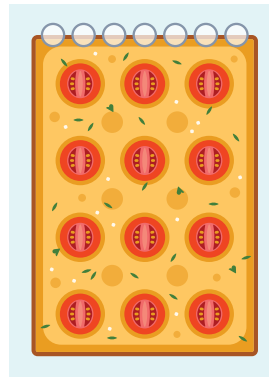
Use the small circles to help you draw lines to split the foods into equal parts.

4

Draw lines to split the food into fourths.

**5**

Draw lines to split the food into quarters.

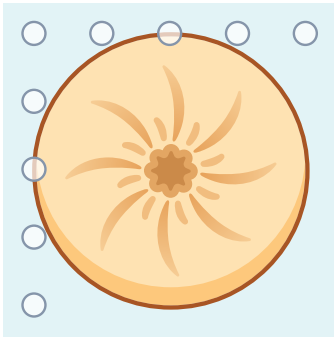
**6**

Discuss 

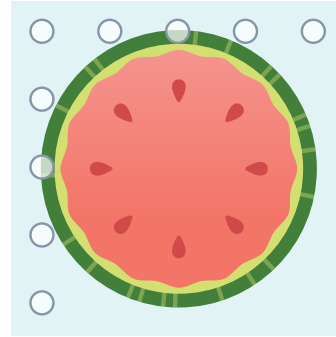
What did you think about to split the food in Problem 5 into quarters?

Fair Shares (continued)

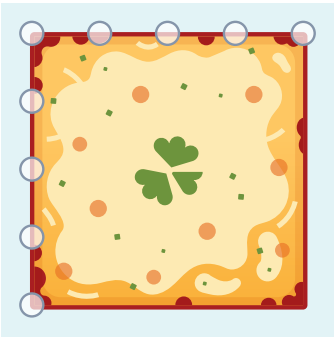
7 Draw **1** line to split the food into halves.



8 Draw **2** lines to split the food into quarters.



9 Draw **2** lines to split the food into fourths.



10 Discuss 

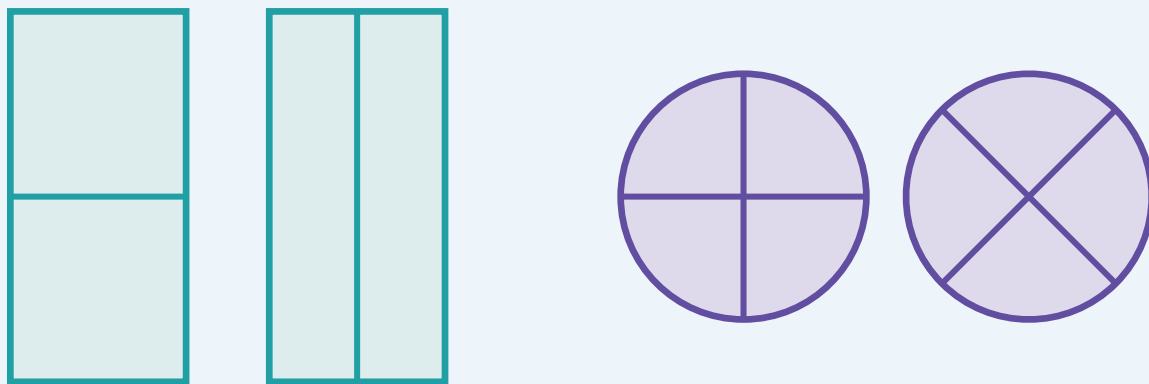
Which foods should Pia serve to 4 people? Why?

Which foods should Pia serve to 2 people? Why?

- Pia should serve _____ to 4 people because _____.
- Pia should serve _____ to 2 people because _____.

Summary 7.10

You can partition shapes into equal parts to show halves and fourths in different ways.



Practice 7.10

Choose from these Centers.



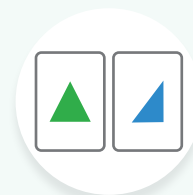
Can You Draw It?

Stage 2



Cover Up

Stage 9



How Are They
the Same?

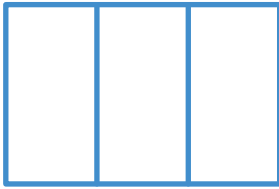
Stage 1

Practice 7.10

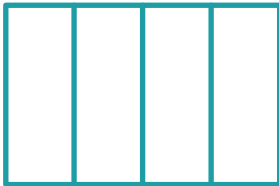
Name _____

For Problems 1–5, write if the rectangle is split into *halves*, *fourths*, or *neither*.

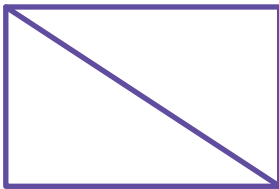
1



2



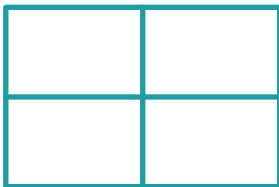
3



4



5



Spiral Review

For Problems 6–9, find the difference.

 Show your thinking.

6 $14 - 6$ _____

7 $12 - 6$ _____

8 $17 - 8$ _____

9 $19 - 5$ _____

- 10 Solve the problem and write an equation to show how you solved it. Use an underline to show the answer in the equation.

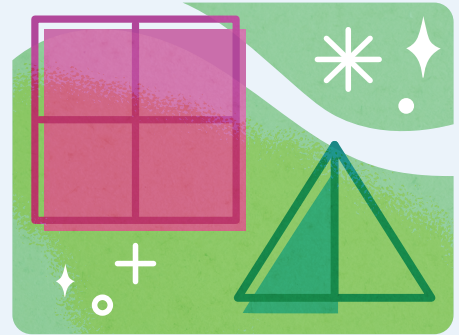
Han had 12 grapes. He ate some. Then he had 7 grapes left. How many grapes did Han eat?

 Show your thinking.

answer: _____ equation: _____

One of the Parts, All of the Parts

Let's describe each equal part of a shape.



Warm-Up



eyes on teacher



I am a doer of math.

Think of a time when math has felt challenging for you. How did you handle the challenge?

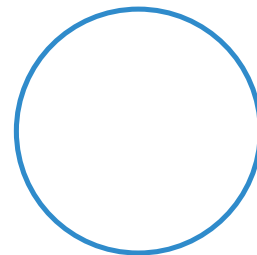
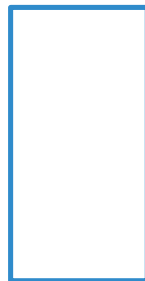
Activity

1

One of the Parts

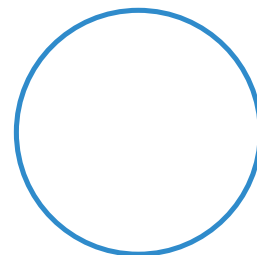
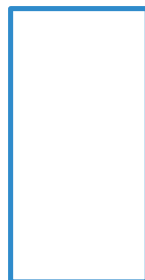
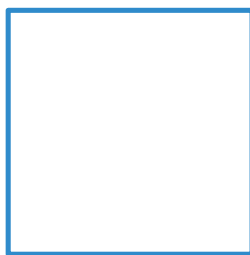
1

Draw lines to split the shapes into quarters.
Shade 1 of the quarters in each shape.



2

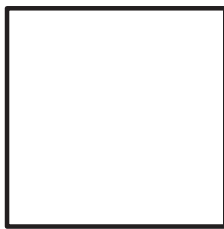
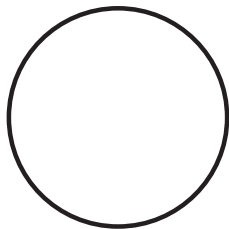
Draw lines to split the shapes into halves.
Shade 1 of the halves in each shape.



Parts of the Puzzle

Hands-On

- 3 Find classmates with parts of shapes equal to yours to complete your shape puzzle.
- 4 Draw the equal parts on the shape that matches yours.



- 5 Circle the words that describe your part of the shape.

a half

a fourth

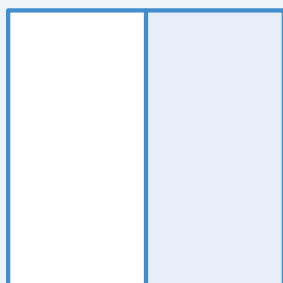
a quarter

- 6 How many equal parts are in your whole shape?

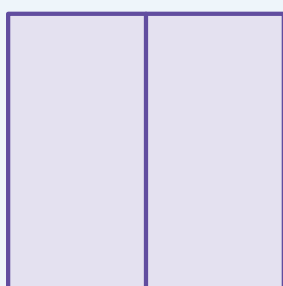
Summary 7.11

You can name each equal part of a shape, and you can describe the whole shape as its number of equal parts.

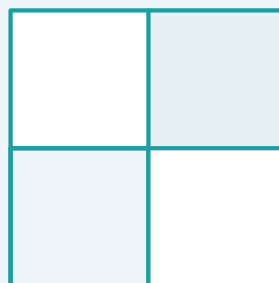
a half



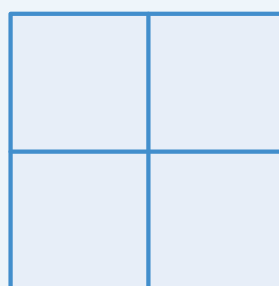
2 of the halves



a fourth



4 of the fourths



a fourth Each part of a shape that is split into 4 equal parts.

a half Each part of a shape that is split into 2 equal parts.

Practice 7.11

You'll play this Center.



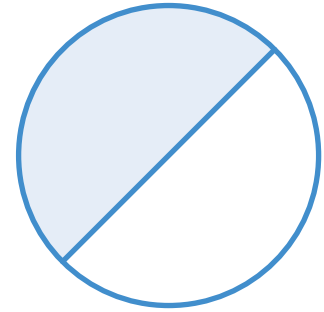
Picture Books Stage 3

Let's find shapes and sort them.

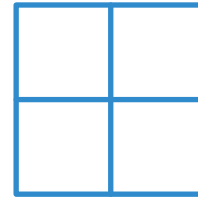
Practice 7.11

Name _____

1 Write how much of the shape is shaded.



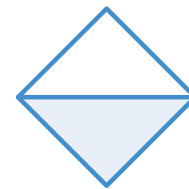
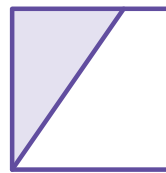
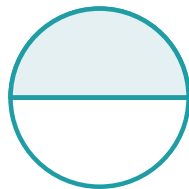
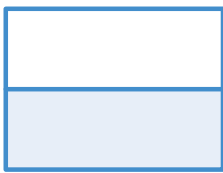
2 Color 4 of the fourths of the square.



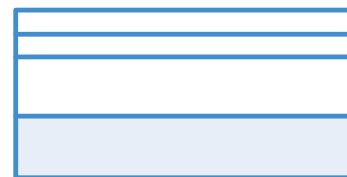
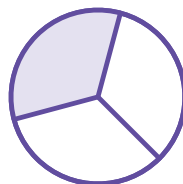
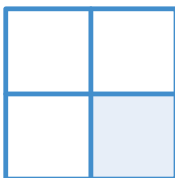
3 Color a fourth of the rectangle.



4 Circle 3 shapes that show a half of the shape is colored.



5 Circle 2 shapes that show a fourth of the shape is colored.



Spiral Review

For Problems 6–13, find the sum or difference.

6 $5 + 2$ _____

7 $10 - 5$ _____

8 $5 + 4$ _____

9 $7 - 5$ _____

10 $5 + 5$ _____

11 $8 - 5$ _____

12 $5 + 3$ _____

13 $9 - 5$ _____

For Problems 14 and 15, find the difference.

 Show your thinking.

14 $11 - 5$ _____

15 $14 - 6$ _____

For Problems 16 and 17, find the sum.

 Show your thinking.

16 $25 + 36$ _____

17 $19 + 57$ _____

A Bigger Part

Let's compare sizes of halves and fourths of the same shape.



We are a math community.
When might it be more fair to split something into unequal parts than into equal parts?

Warm-Up



eyes on teacher

Activity

1

Comparing Halves and Fourths

Hands-On 

1 Fold and cut one of your rectangles into halves. Fold and cut the other rectangle into fourths.

2 Discuss 

How are the halves and fourths different?

The halves and fourths are different because _____.

Ajar's Bazlama

- 3 Ajar's dad asks if he would like *a half* or *a quarter* of the bazlama.

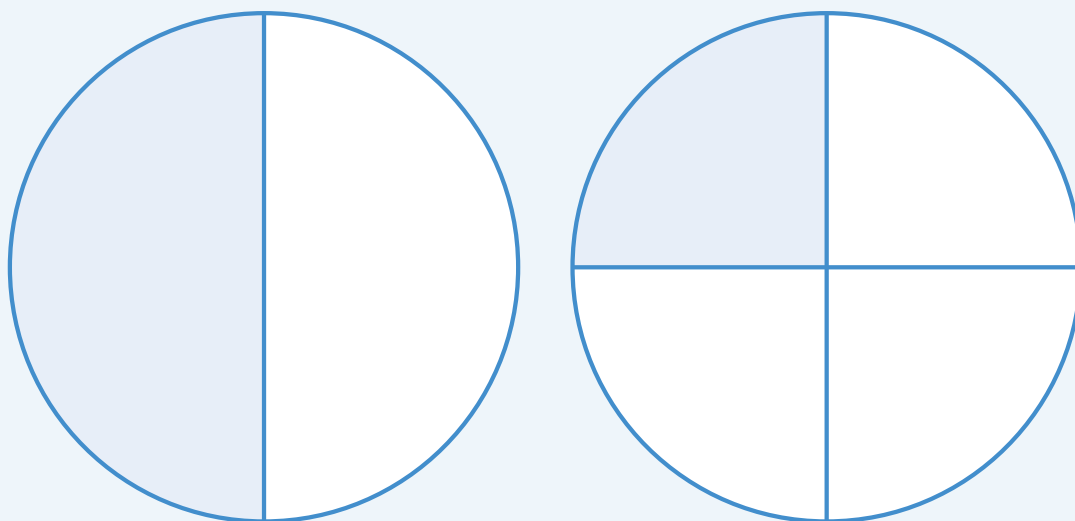
Ajar says, "I want a quarter of the bazlama because a quarter is bigger than a half. I know because 4 is more than 2."

Do you think Ajar made the right choice?
Why or why not?

 Show your thinking.

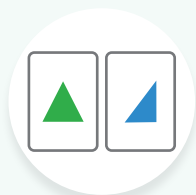
Summary 7.12

Splitting the same shape into more equal parts creates smaller parts.



Practice 7.12

Choose from these Centers.



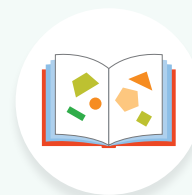
How Are They
the Same?

Stage 1



How Close?

Stage 3



Picture Books

Stage 3

Practice 7.12

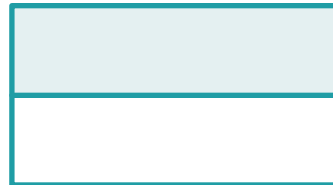
Name _____

For Problems 1 and 2, write how much of the shape is shaded.

1



2



3

Look at Problems 1 and 2. Circle the shape that has the *greater* amount shaded.

4

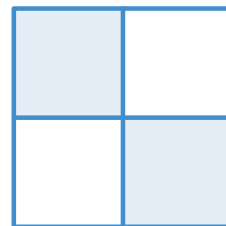
Circle which part of the same square is *greater*.

A half of
the square

A fourth of
the square

5

Shawn said half of the square is shaded.
Do you agree with Shawn?



Show your thinking.

answer: _____

Spiral Review

For Problems 6–13, find the sum or difference.

6 $6 + 2$ _____

7 $10 - 6$ _____

8 $6 + 4$ _____

9 $9 - 6$ _____

10 $6 + 3$ _____

11 $7 - 6$ _____

12 $6 + 1$ _____

13 $8 - 6$ _____

For Problems 14 and 15, find the difference.

 Show your thinking.

14 $13 - 2$ _____

15 $18 - 5$ _____

For Problems 16 and 17, find the sum.

 Show your thinking.

16 $38 + 45$ _____

17 $18 + 76$ _____

Telling Time

✦ Unit Story: A Potluck for Pia



Hrynevich Yury/Shutterstock.com

Mei's family has a clock on the kitchen wall.

How might the clock be helpful to Mei and her family?

It's Time for Clocks

Let's tell and write time
in hours.



Warm-Up



eyes on teacher



We are a math community.

Clocks are similar in many schools. What else do many schools have in common?

Activity

1

Clocks in Order

Hands-On 

1 Discuss

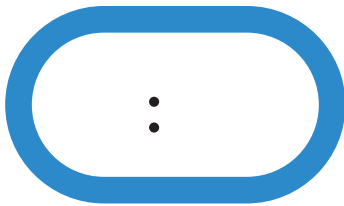
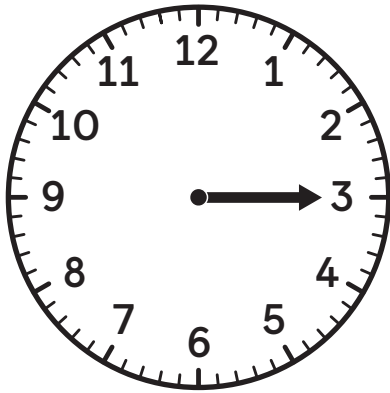
What is alike and different about the clocks?

- 2 Put the clock cards in order in a way that makes sense to you. As you order the cards, explain your thinking to your partner.

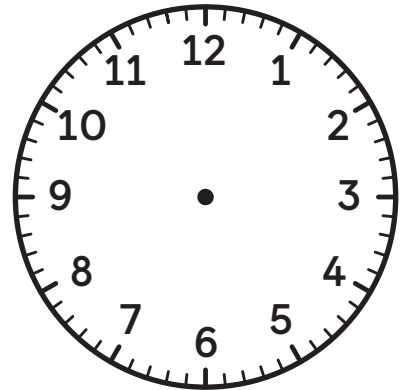
Connecting Clocks to Written Times

Fill in the missing hour hand or written time.

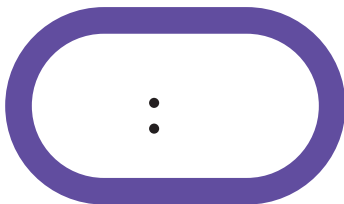
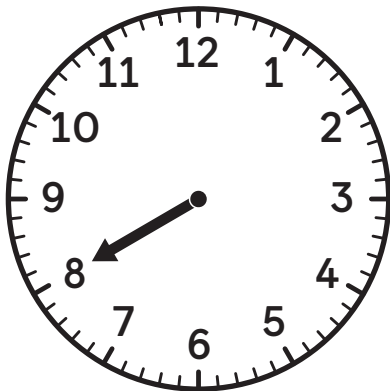
3



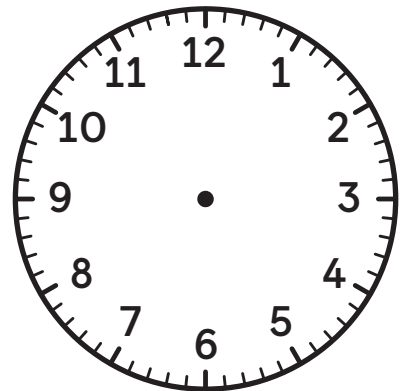
4



5

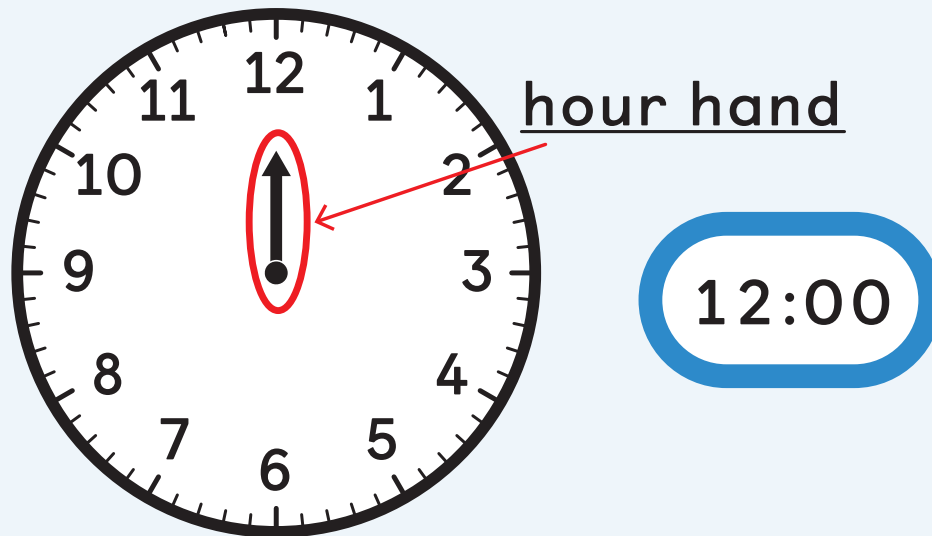


6



Summary 7.13

When the **hour hand** points directly to 12, the time is 12 o'clock.



hour hand The short arrow on a clock that points to the hour and moves from hour to hour.

Practice 7.13

Choose from these Centers.



How Are They
the Same?

Stage 1



How Close?

Stage 3



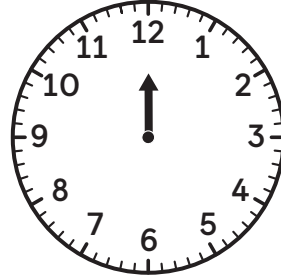
Picture Books

Stage 3

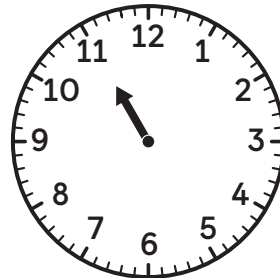
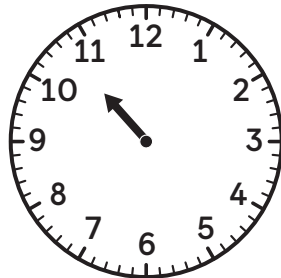
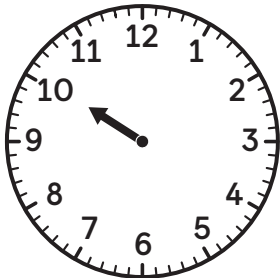
Practice 7.13

Name _____

1 Circle the clock that shows 7 o'clock.



2 Circle the clock that shows 11:00.

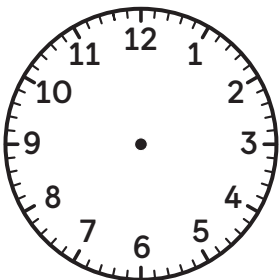


3 Circle the clock that shows 4 o'clock.

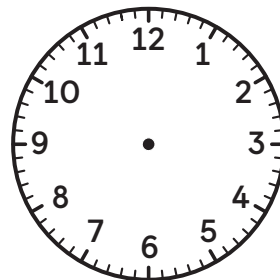


For Problems 4 and 5, draw the hour hand to show the time.

4



5



Spiral Review

For Problems 6–11, find the sum or difference.

6 $7 + 2$ _____

7 $10 - 7$ _____

8 $7 + 3$ _____

9 $8 - 7$ _____

10 $7 + 1$ _____

11 $9 - 7$ _____

For Problems 12 and 13, find the difference.

 Show your thinking.

12 $19 - 1$ _____

13 $16 - 6$ _____

- 14 There were 11 moths in the garden.
8 more moths came into the garden.
How many moths are in the garden now?

 Show your thinking.

answer: _____

equation: _____

Name _____

Make Sense of Data

Reasoning About Equality

Clocks & Time

Tens & Ones

🕒 1.MD.3, 1.MD.4, 1.NBT.4, SMP.3, SMP.7, SMP.8

Half Past

Let's tell time to the half hour.



Warm-Up



eyes on teacher



We are a math community.

In math, why is it important to listen to someone's opinion even when you disagree?

Activity

1

Between the Hours

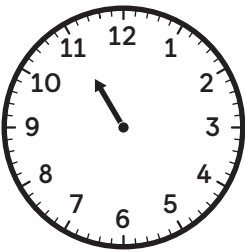
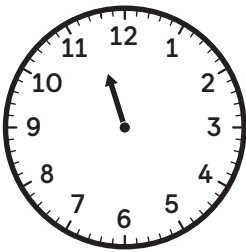
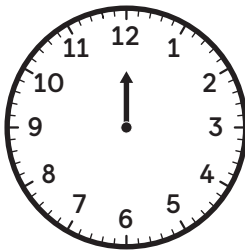
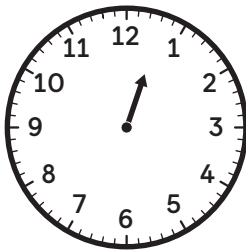

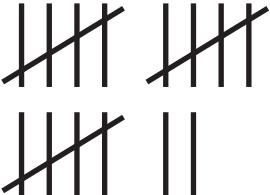


Hands-On

- 1 Order the clock cards in a way that makes sense to you.



Half Past What?

Mr. Parra kept track of what time everyone arrived at the potluck. Use the data to answer Problems 2–4.

Clock A	Clock B	Clock C	Clock D
			
			

2 How many guests arrived at half past 12? _____

3 How many more guests arrived at half past 11 than half past 12? _____

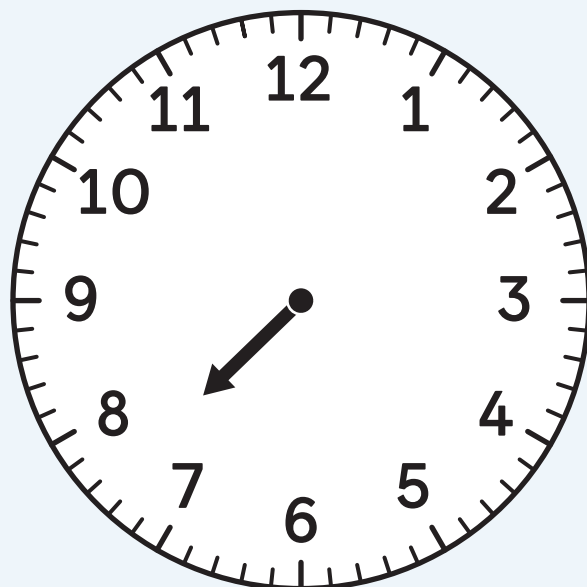
4 How many guests arrived after 11 o'clock? _____

5 **Data Talk** 

Pia says 12 guests arrived after 11. Is she correct? Why or why not?

Summary 7.14

At **half past** the hour, the hour hand is halfway between that hour and the next hour.



half past 7

half past An expression that means it is 30 minutes past the hour.

Practice 7.14

You'll play this Center.

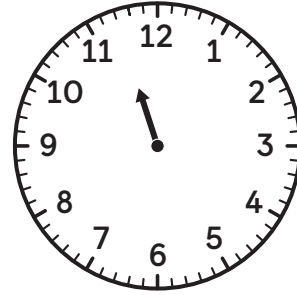


Solid Shapes Stage 4

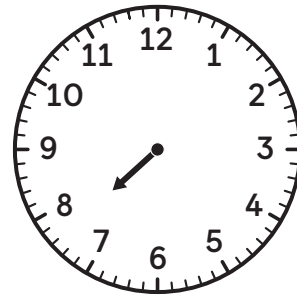
Let's guess the solid shape without looking at it.

For Problems 1-4, fill in the number to complete the time.

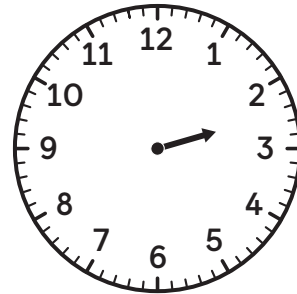
1 half past _____



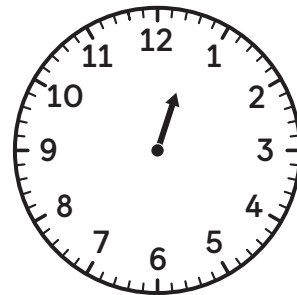
2 half past _____



3 half past _____



4 half past _____



Spiral Review

For Problems 5–10, find the sum or difference.

5 $8 + 2$ _____

6 $9 - 8$ _____

7 $8 + 1$ _____

8 $10 - 8$ _____

9 $9 + 1$ _____

10 $10 - 9$ _____

For Problems 11 and 12, find the difference.

 Show your thinking.

11 $15 - 6$ _____

12 $13 - 9$ _____

- 13 19 people were at a party.
Some of them left the party.
Now there are 7 people at the party.
How many people left the party?

 Show your thinking.

answer: _____

equation: _____

Name _____

Clocks & Time

Equal Parts Inside Shapes

1.MD.3, 1.G.3, SMP.6, SMP.7

The Minute Hand

Let's tell time with the hour hand and minute hand.



Warm-Up



eyes on teacher



I am a doer of math.

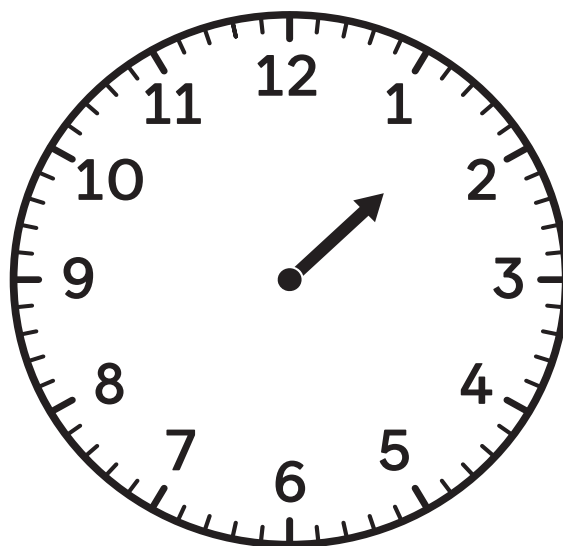
Think of a time when solving a math problem took many tries. How did you feel afterward?

Activity

1

The Moving Minute Hand

- 1 Draw a line from top to bottom to split the clock face into halves.
- 2 Shade in the right half of the clock.

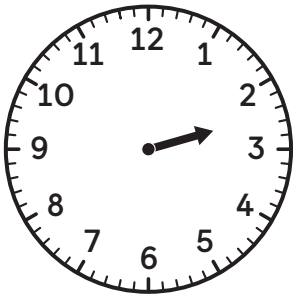


- 3 Draw the minute hand pointing straight down.

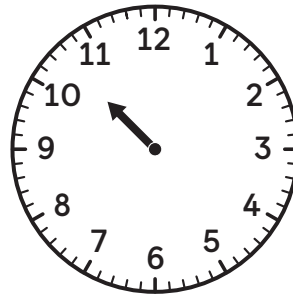
The Moving Minute Hand (continued)

Draw a line from top to bottom to split the clock into halves. Shade in the right half of each clock. Then draw the missing hand on each clock to match the time.

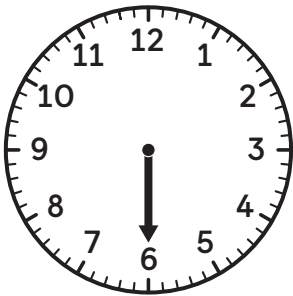
4 Half past 2



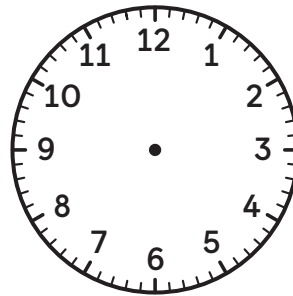
5 Half past 10



6 Half past 7



7 Half past 12



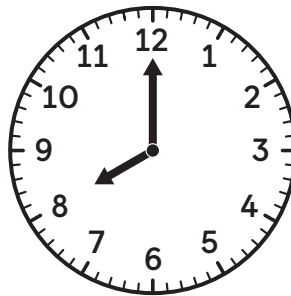
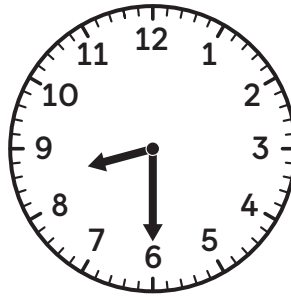
Pia's Favorite Activities

8

Discuss 


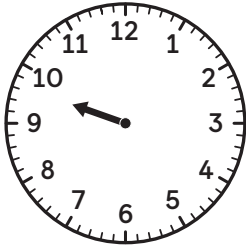

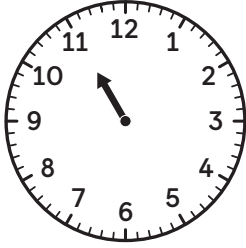
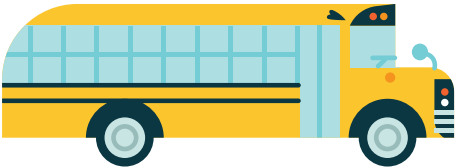
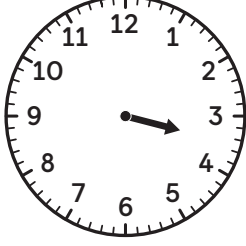

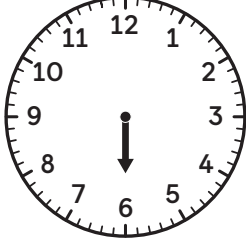
What do you notice about the 2 clocks?

I notice _____.



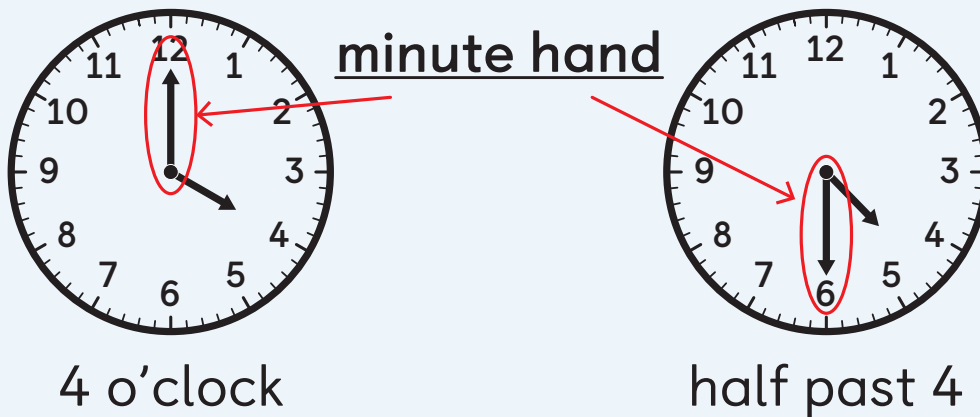
Pia's Favorite Activities (continued)

Fill in the missing minute hands and written times for Pia's favorite activities. Explain your thinking to your partner.

	Activity	Time	Written time
9	 Reading		half past 9
10	 Recess		11 o'clock
11	 Dismissal		
12	 Dinner		

Summary 7.15

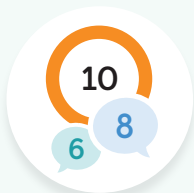
The **minute hand** points straight up for times on the hour and points straight down for times half past the hour.



minute hand The long arrow on a clock that points to the tick marks around the clock to show how many minutes have passed and goes around the whole circle in an hour.

Practice 7.15

Choose from these Centers.



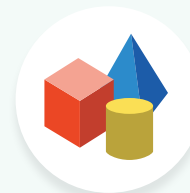
How Close?

Stage 3



Picture Books

Stage 3



Solid Shapes

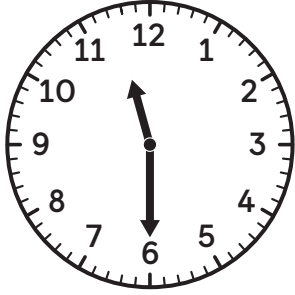
Stage 4

Practice 7.15

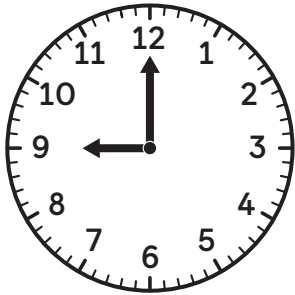
Name _____

For Problems 1 and 2, write the time.

1

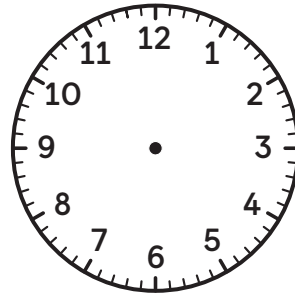


2

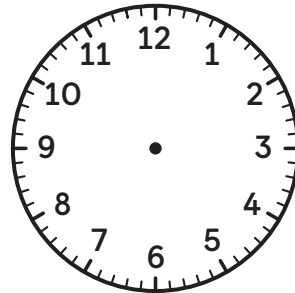


For Problems 3 and 4, draw the hands on the clock to show the time.

3 12 o'clock



4 half past 9



Spiral Review

For Problems 5–10, find the number that makes the equation true.

5 $5 + \underline{\hspace{2cm}} = 10$

6 $6 + \underline{\hspace{2cm}} = 10$

7 $8 + \underline{\hspace{2cm}} = 10$

8 $9 + \underline{\hspace{2cm}} = 10$

9 $7 + \underline{\hspace{2cm}} = 10$

10 $2 + \underline{\hspace{2cm}} = 10$

For Problems 11 and 12, find the difference.

 Show your thinking.

11 $12 - 5 \underline{\hspace{2cm}}$

12 $18 - 9 \underline{\hspace{2cm}}$

- 13 There were some lily plants in the garden.
Clare planted 3 more.
Now there are 17 lily plants.
How many lily plants were there at first?

 Show your thinking.

answer: _____ equation: _____

Name _____

Clocks & Time  1.MD.3, 1.OA.7, SMP.3, SMP.6, SMP.7

Writing Times

Let's figure out what time it is.



I can be all of me in math class.
Mistakes in math class can lead to new learning. Describe a time you learned from a mistake.

Warm-Up



eyes on teacher

Activity

1

Counting Minutes

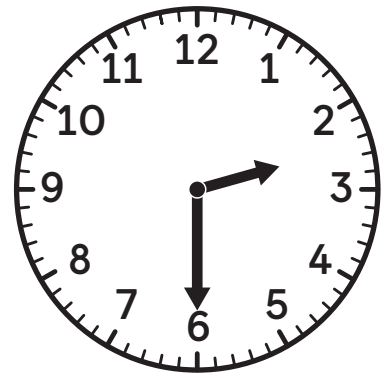
Look at the time shown on each clock.

1

Discuss

Why do you think half past 2 is written as 2:30?

I think half past 2 is written as 2:30 because _____.



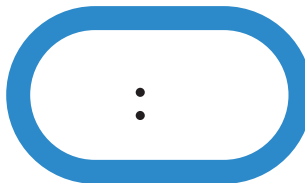
2:30

Clock Tour

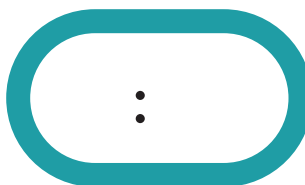
2

Write the time shown on each clock.

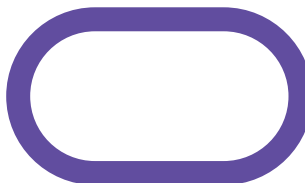
Clock A



Clock B



Clock C



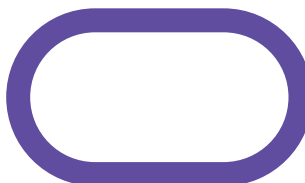
Clock D



Clock E



Clock F



Summary 7.16

Half past means that it is 30 minutes past the hour. Times that are half past are written with the hour before the colon and 30 after the colon.



10:30
hour minutes

Practice 7.16

You'll play this Center.



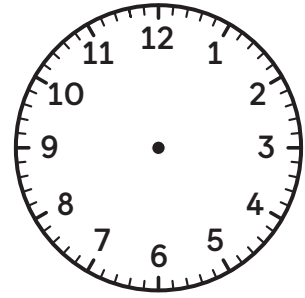
Mystery Shape Stage 2

Let's find the mystery shape.

Practice 7.16

Name _____

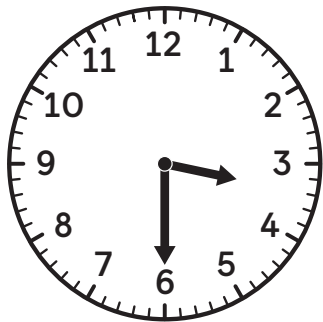
- 1 Draw the minute and hour hands on the clock to show half past 7.



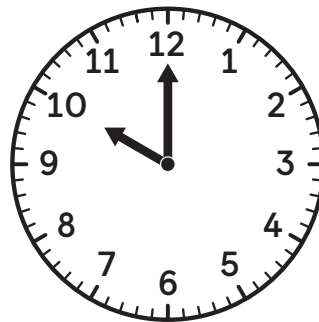
- 2 Write the time to show half past 7.

For Problems 3–6, write the time.

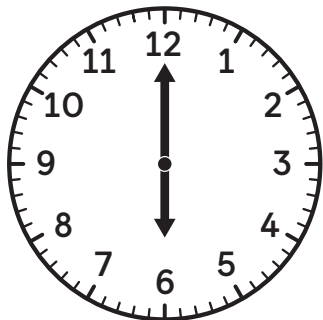
3



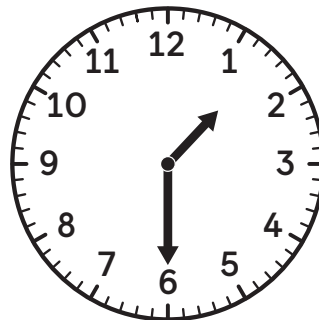
4



5



6



Spiral Review

For Problems 7–12, find the difference.

7 $10 - 5$ _____

8 $10 - 9$ _____

9 $10 - 7$ _____

10 $10 - 6$ _____

11 $10 - 2$ _____

12 $10 - 3$ _____

For Problems 13 and 14, find the difference.

 Show your thinking.

13 $16 - 14$ _____


14 $17 - 13$ _____

- 15 A zoo has 15 box turtles and 8 sea turtles.
How many more box turtles are there than sea turtles?

 Show your thinking.

answer: _____ equation: _____

Name _____

Clocks & Time  1.MD.3, SMP.1, SMP.3, SMP.6, SMP.7

Guess What Time It Is!

Let's write clues and guess the time.



Warm-Up



eyes on teacher



We are a math community.

What advice do you have for mathematicians starting Grade 1 next school year?

Activity

1

Clock Clues!

1

Look at your clock. Write **3** clues that describe the time shown.

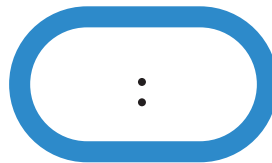
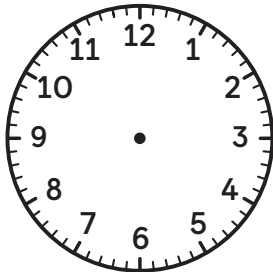
- The minute hand is pointing _____.
- The hour hand is pointing _____.
- It is after _____ but before _____.
- It is between _____ and _____.



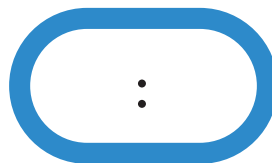
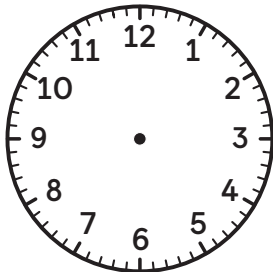
Time to Solve Clues

Listen to the clues. Draw hands to show the time.
Write the time.

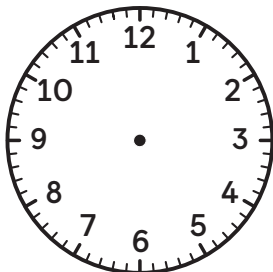
2



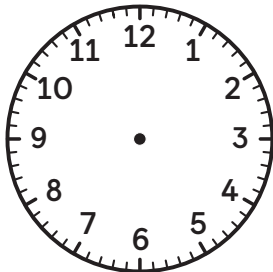
3



4



5



Summary 7.17

You can use what you know about clocks to tell time to the hour and half past the hour.

The hour hand is shorter than the minute hand.

At half past the hour, the hour hand is halfway between 2 numbers.



6:30 and half past 6 are different ways to say the same time.

At half past the hour, the minute hand points straight down.

Practice 7.17

Choose from these Centers.



How Close?

Stage 3



Mystery Shape

Stage 2



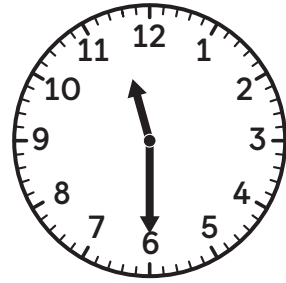
Solid Shapes

Stage 4

Practice 7.17

Name _____

For Problems 1–4, circle to show if the statement about the clock is *true* or *false*.



1 It is half past 11.



2 The hour hand is pointing to 6 minutes.



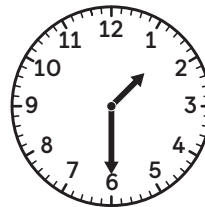
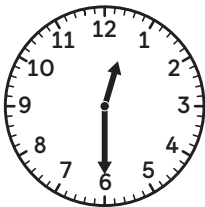
3 The time is 12:30.



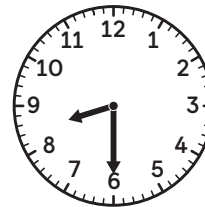
4 The time is 11:30.



5 Circle the clock that shows 1:30.



6 Circle the clock that shows half past 8.



Spiral Review

For Problems 7–12, find the sum or difference.

7 $4 + 4$ _____

8 $3 + 3$ _____

9 $4 - 2$ _____

10 $6 - 3$ _____

11 $10 - 5$ _____

12 $8 - 4$ _____

For Problems 13 and 14, find the difference.

 Show your thinking.

13 $19 - 4$ _____

14 $19 - 14$ _____

- 15 Han donated 17 books to the library.
12 of them were picture books and the rest
were chapter books.
How many chapter books did he donate?

 Show your thinking.

answer: _____ equation: _____



Notes:

Math at Work

People who host parties and invite a lot of people might think about how to make sure there is enough food.

Caterers plan, make, and serve meals at large events. They might need to slice a rectangular or circular meal or dessert into equal parts to serve guests.



Stock 4you/Shutterstock.com. marcin jucha/Shutterstock.com.

Math in the World

Draw lines on this pan of lasagna to split it into fourths.



IriGri/Shutterstock.com.

Math Mindset

The clock shows 2:30.
How is this the same as showing half past 2?

