



Core Knowledge[®] MATHEMATICS

Adding, Subtracting, and Working with Data



Student Workbook



Creative Commons Licensing

This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.



You are free:

- to Share**—to copy, distribute, and transmit the work
- to Remix**—to adapt the work

Under the following conditions:

Attribution—You must attribute the work in the following manner:
CKMath 6–8 was originally developed by Open Up Resources and authored by Illustrative Mathematics, <https://www.illustrativemathematics.org>, and is copyrighted as 2017–2019 by Open Up Resources. It is licensed under the Creative Commons Attribution 4.0 International License (CC BY 4.0). The Open Up Resources 6–8 Math Curriculum is available at: <https://www.openupresources.org/math-curriculum/>.

Adaptations and updates to the IM 6–8 Math English language learner supports and the additional English assessments marked as "B" are copyright 2019 by Open Up Resources and licensed under the Creative Commons Attribution 4.0 International License (CC BY 4.0).

Adaptations and updates to the IM K–8 Math Spanish translation of assessments marked as "B" are copyright 2019 by Illustrative Mathematics. These adaptations and updates are licensed under the Creative Commons Attribution 4.0 International License (CC BY 4.0).

This particular work is based on additional work of the Core Knowledge® Foundation (www.coreknowledge.org) made available through licensing under a Creative Commons Attribution-Non Commercial-Share Alike 4.0 International License. This does not in any way imply that the Core Knowledge Foundation endorses this work.

Noncommercial—You may not use this work for commercial purposes.

Share Alike—If you alter, transform, or build upon this work, you may distribute the resulting work only under the same or similar license to this one.

With the understanding that:

For any reuse or distribution, you must make clear to others the license terms of this work. The best way to do this is with a link to this web page:

<https://creativecommons.org/licenses/by-nc-sa/4.0/>

Copyright © 2023 Core Knowledge Foundation
www.coreknowledge.org

All Rights Reserved.

Core Knowledge®, Core Knowledge Curriculum Series™, Core Knowledge Math™ and CKMath™ are trademarks of the Core Knowledge Foundation.

Trademarks and trade names are shown in this book strictly for illustrative and educational purposes and are the property of their respective owners. References herein should not be regarded as affecting the validity of said trademarks and trade names.

Adding, Subtracting, and Working with Data

Table of Contents

Lesson 1	Count and Add	1
Lesson 2	Explore Expressions and Sums	2
Lesson 3	Add 1 or 2	6
Lesson 4	More Work with 1 and 2	8
Lesson 5	Explore Addition and Subtraction	10
Lesson 6	Center Day 1	13
Lesson 7	Sort Math Tools	15
Lesson 8	Sort and Count Shape Cards	17
Lesson 9	What is Your Favorite _____?	19
Lesson 10	Center Day 2	24
Lesson 11	Class Pet Survey	26
Lesson 12	How Many?	32
Lesson 13	Questions About Data	35
Lesson 14	Center Day 3	41
Lesson 15	Animals in the Jungle (optional)	43
Cumulative Practice Problems		
Section A:	Add and Subtract within 10	47
Section B:	Show Use Your Data	56

Lesson 1: Count and Add

- Let's count objects.

Warm-up: What Do You Know About Math?

What do you know about math?

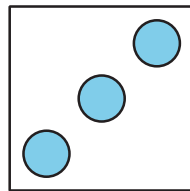
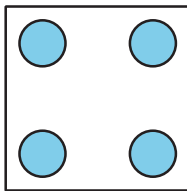
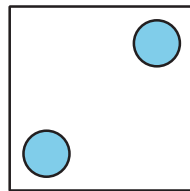
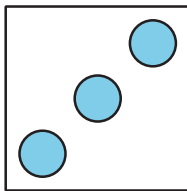
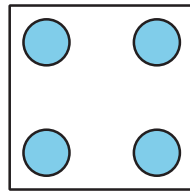
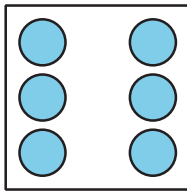
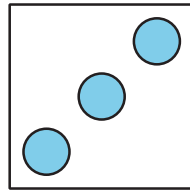
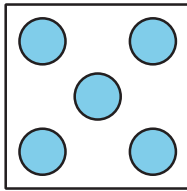
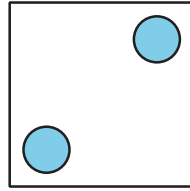
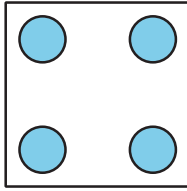


Lesson 2: Explore Expressions and Sums

- Let's write addition expressions and find the sum of two numbers.

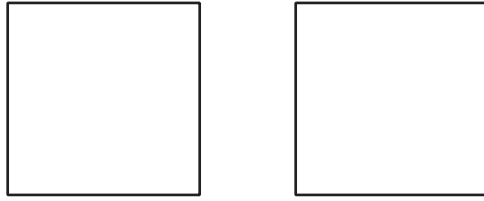
2.1: Matching Dot Cards and Expressions

Match each pair of dots to an expression. Then, find the total.



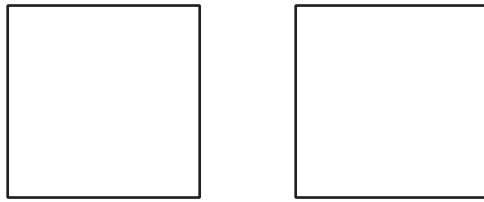
expression	total
$3 + 2$	
$4 + 2$	
$5 + 3$	
$6 + 4$	
$4 + 3$	

Draw the missing dots to match the expression. Then, find the total.



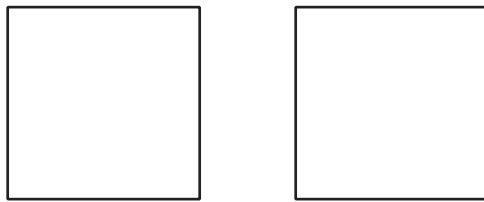
Expression: $4 + 2$

Total: _____



Expression: $5 + 2$

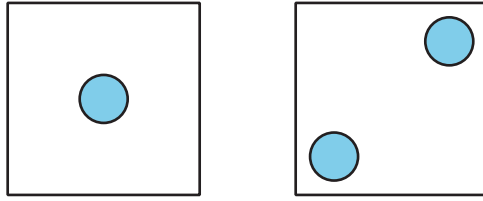
Total: _____



Expression: $2 + 6$

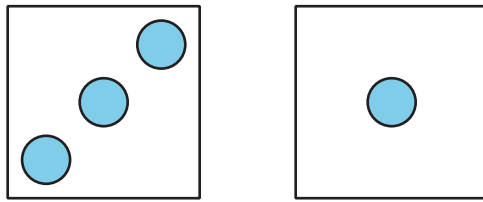
Total: _____

Write the missing expression to match the dots. Then, find the total.



Expression: _____

Total: _____



Expression: _____

Total: _____

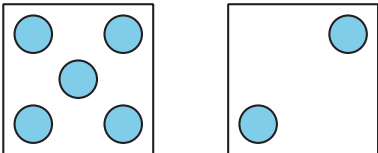
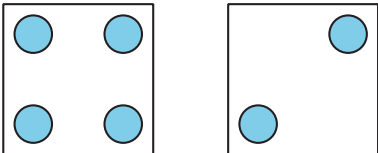
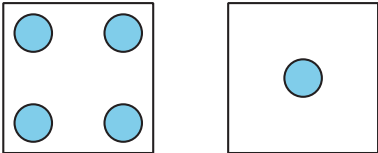
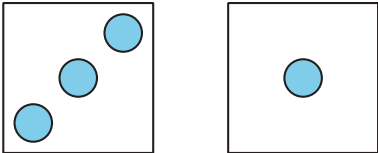
Lesson 3: Add 1 or 2

- Let's add 1 or 2.

Warm-up: How Many Do You See: Dot Cubes

How many do you see?

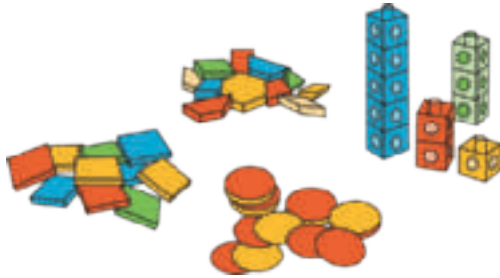
How do you see them?



3.2: Centers: Choice Time

Choose a center.

Counting Collections



Number Race



Check it Off



Five in a Row: Addition and Subtraction



Lesson 4: More Work with 1 and 2

- Let's subtract 1 or 2.

Warm-up: Number Talk: Add 1 or 2

Find the value of each expression mentally.

- $6 + 1$

- $6 + 2$

- $8 + 1$

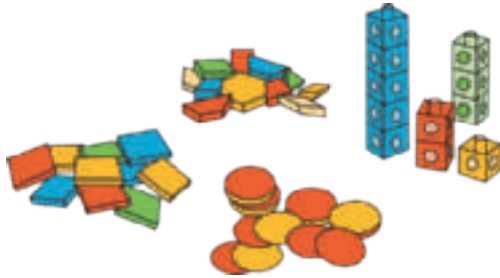
- $8 + 2$



4.2: Centers: Choice Time

Choose a center. See instructions in the teacher guide.

Counting Collections



Number Race



Check it Off



Five in a Row: Addition and Subtraction



Lesson 5: Explore Addition and Subtraction

- Let's add and subtract.

Warm-up: Number Talk: Subtract 1 or 2

Find the value of each expression mentally.

- $6 - 1$

- $6 - 2$

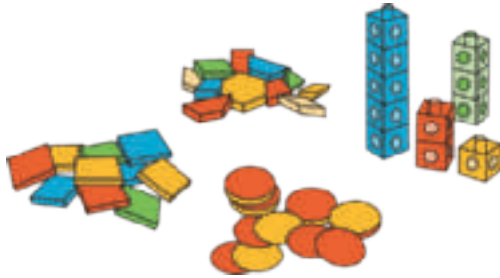
- $8 - 1$

- $8 - 2$

5.2: Centers: Choice Time

Choose a center.

Counting Collections



Number Race



Check it Off



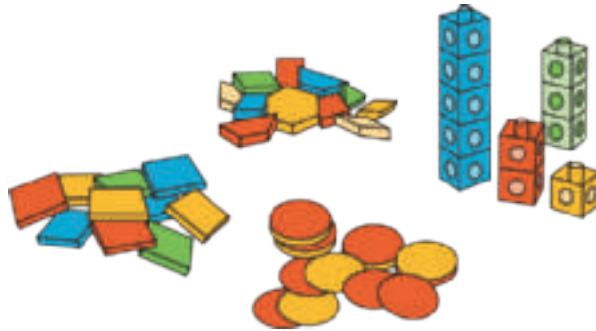
Five in a Row: Addition and Subtraction



Section Summary

Section Summary

We practiced counting collections.



We added 1 or 2 by counting on.

$$4 + 2$$

4 . . . 5, 6

We subtracted 1 or 2 by counting back.

$$6 - 2$$

6 . . . 5, 4

We played games with addition and subtraction within 10.

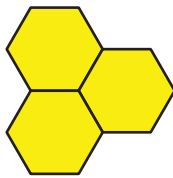
Lesson 6: Center Day 1

- Let's play games to practice adding and subtracting.

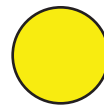
Warm-up: Which One Doesn't Belong: Math Tools

Which one doesn't belong?

A



B



C



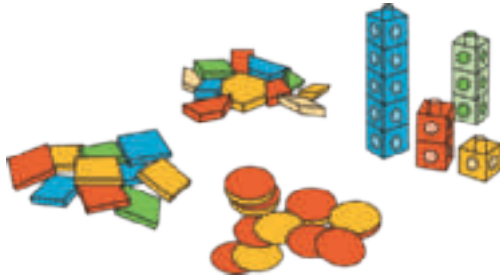
D



6.2: Centers: Choice Time

Choose a center.

Counting Collections



Number Race



Check it Off



Five in a Row: Addition and Subtraction



Find the Pair



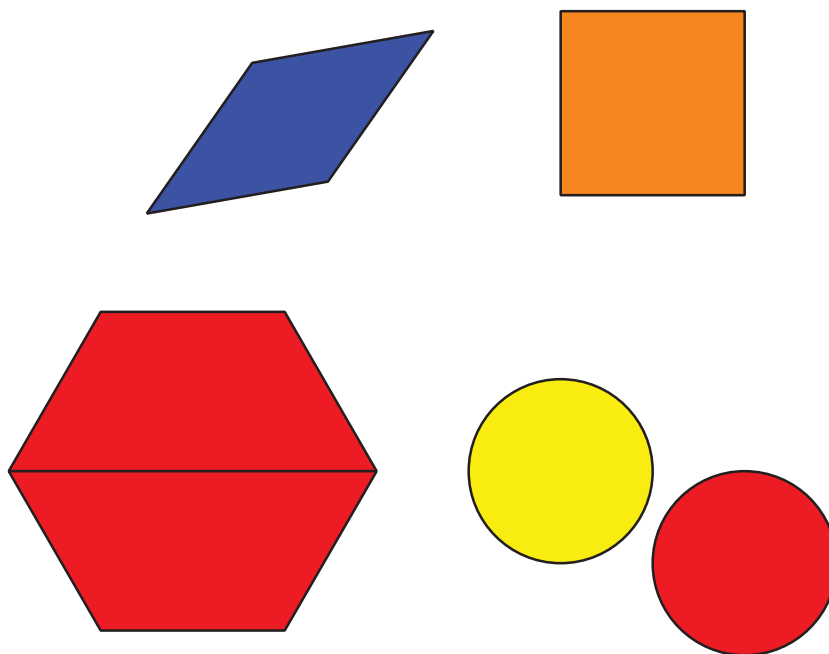
Lesson 7: Sort Math Tools

- Let's sort objects and describe how many.

Warm-up: Notice and Wonder: Math Tools

What do you notice?

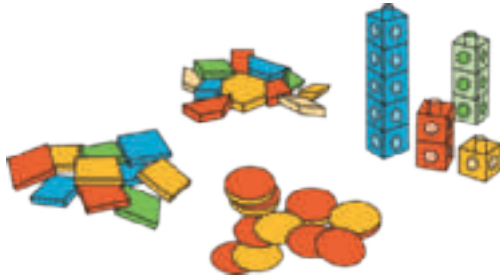
What do you wonder?



7.3: Centers: Choice Time

Choose a center.

Counting Collections



Number Race



Check it Off



Five in a Row: Addition and Subtraction



Find the Pair



Lesson 8: Sort and Count Shape Cards

- Let's sort shapes and show how many.

Warm-up: Which One Doesn't Belong: Show Quantities

Which one doesn't belong?

A



B



C



D

5

8.2: Show Your Sort

1. Show how you sorted the shape cards.

Be sure that someone else who looks at your paper can see how many shapes are in each category.

2. Complete the sentences:

a. The first category has _____ shapes.

b. The second category has _____ shapes.

c. The third category has _____ shapes.

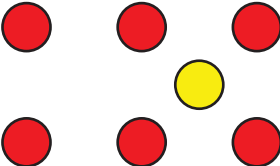
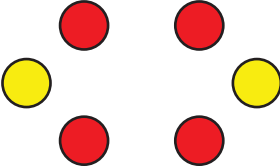
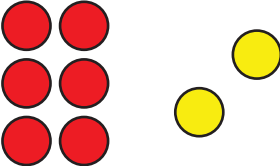
d. There are _____ shapes all together.

Lesson 9: What is Your Favorite _____ ?

- Let's collect, organize, and show data.

Warm-up: How Many Do You See: Dots and More Dots

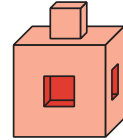
How many do you see?
How do you see them?



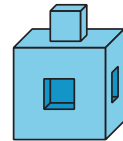
9.1: A Class Survey

What is your favorite _____?

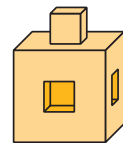
If you chose _____, take a red cube.



If you chose _____, take a blue cube.



If you chose _____, take a yellow cube.



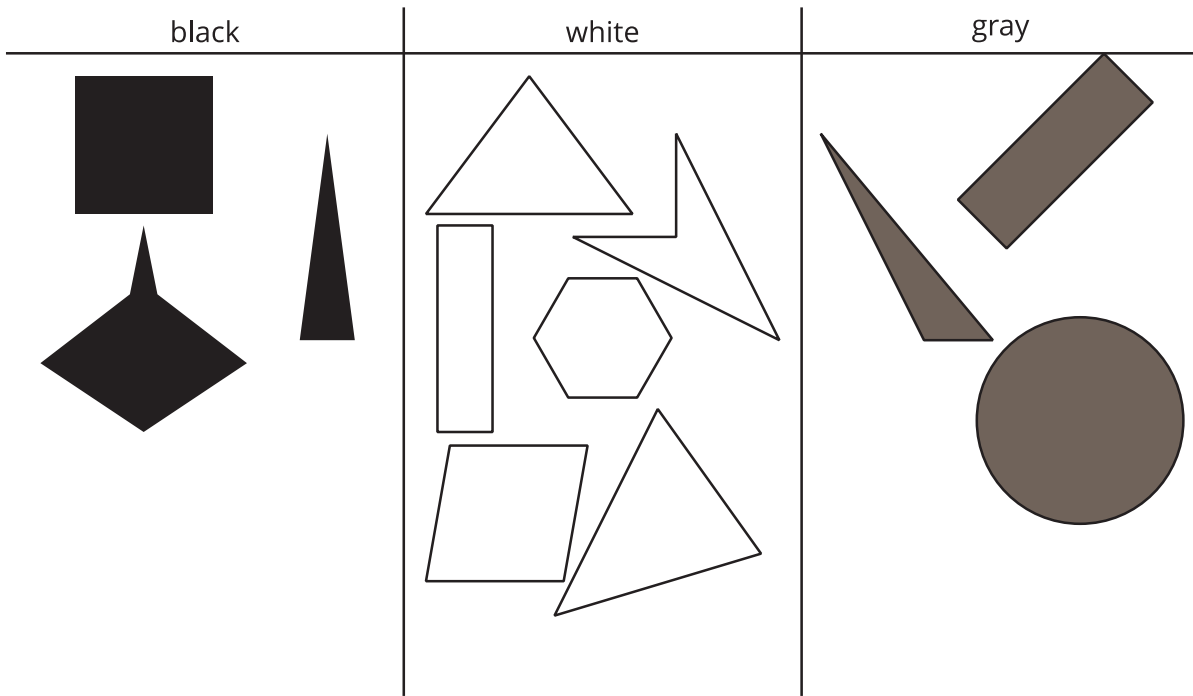
9.2: Show Our Class Data

Show the survey data about our class's favorite

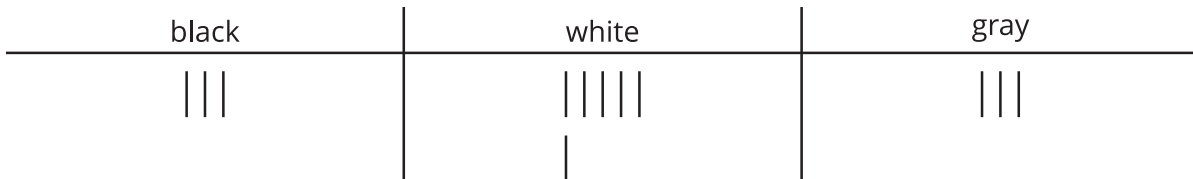
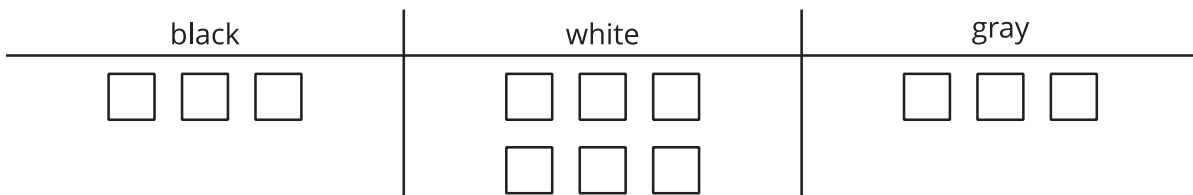
Section Summary

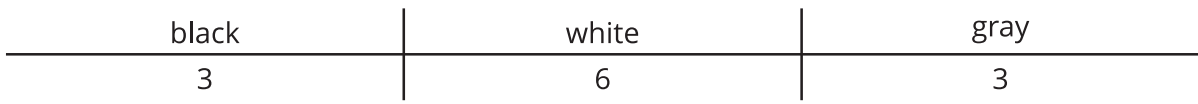
Section Summary

We sorted objects and shapes.



We showed our sorts on paper in different ways.





Lesson 10: Center Day 2

- Let's add and subtract.

10.2: Centers: Choice Time

Choose a center.

Five in a Row: Addition and Subtraction



Check it Off



What's Behind My Back



Find the Pair



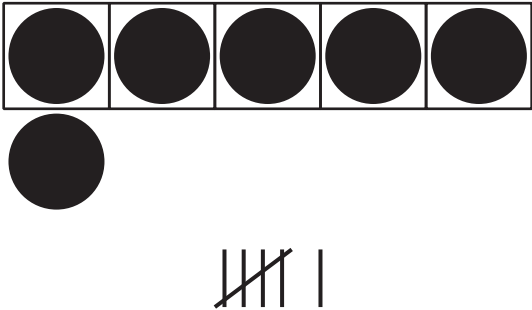
Lesson 11: Class Pet Surveys

- Let's see what the data tells us.

Warm-up: Notice and Wonder: Tally Marks

What do you notice?

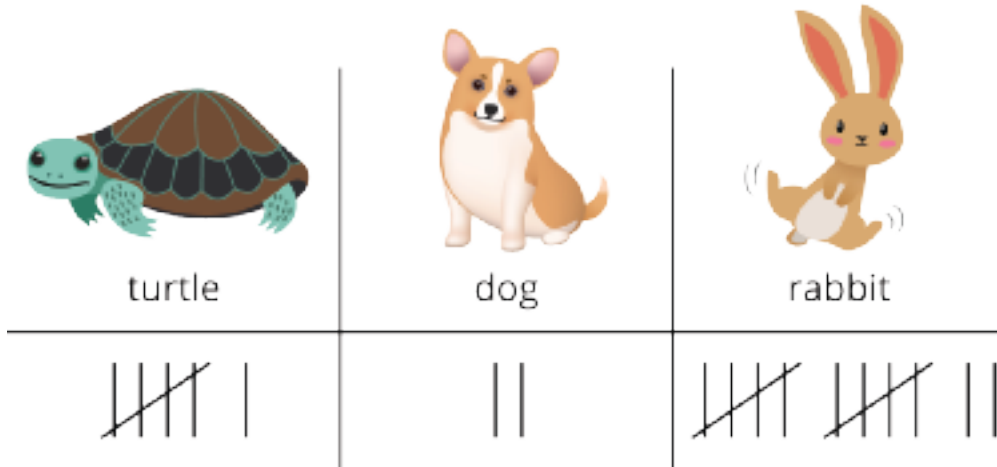
What do you wonder?



11.1: Jada's Class Pet Survey

Jada took a survey of her classmates and asked, "Which animal would make the best class pet?"

She showed their responses.



Decide whether each statement is true or false.

Be ready to explain why.

1. There are 12 votes for rabbit.



True

or



False

2. There are 18 votes all together.



True

or



False

3. 14 students voted for turtle or rabbit.



True

or



False

4. 8 students voted for dog or turtle.



True

or



False

11.2: Interpret Data About Class Pets

Tyler asked the same survey question to his classmates. He showed their responses.



Write 3 things that you learned about Tyler's survey data from the representation.

1.

2.

3.

11.3: Centers: Choice Time

Choose a center.

What's Behind My Back



Check it Off



Five in a Row: Addition and Subtraction



Find the Pair



Lesson 12: How Many?

- Let's answer questions about data.

12.1: Data Represented with Tally Marks

Our favorite _____

category 1	category 2	category 3

1. How many students chose category 1? _____
2. How many students chose category 2? _____
3. How many students chose category 3? _____
4. How many students chose category 1 or category 2? _____
5. How many students took this survey? _____

12.2: Data Represented with Numbers

Our favorite _____

category 1	category 2	category 3

1. How many students chose category 1? _____
2. How many students chose category 2? _____
3. How many students chose category 3? _____
4. How many students chose category 1 or category 2? _____
5. How many students took this survey? _____

Lesson 13: Questions About Data

- Let's ask and answer questions about data.

Warm-up: Number Talk: Plus or Minus 1 or 2

Find the value of each expression mentally.

- $7 + 1$

- $7 + 2$

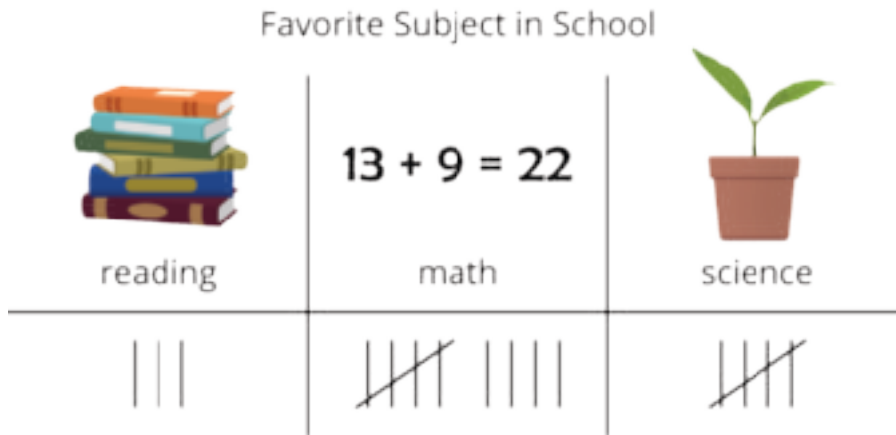
- $9 - 1$

- $9 - 2$

13.1: Can You Answer It?

Elena asked her classmates, "What is your favorite subject in school?"

She showed their responses below.



Han wrote questions about Elena's data.

Decide whether each question can be answered using the data representation.

Be ready to explain why.

1. How many students said math is their favorite subject?



Yes

or



No

2. How many students said writing is their favorite subject?



Yes

or



No

3. Who said they like reading best?



Yes

or



No

4. How many students chose reading or science?



Yes

or



No

13.2: Ask Questions

Our favorite _____

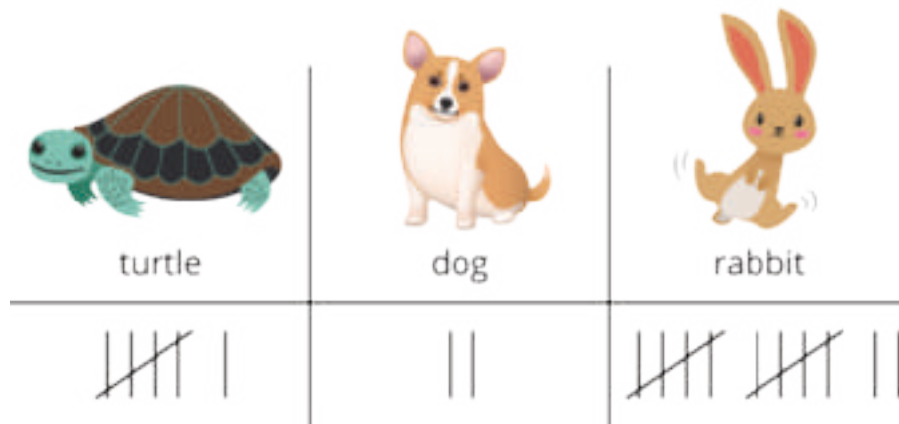
category 1	category 2	category 3

Section Summary

Section Summary

We looked at different ways to show data.

You can show data using tally marks.



You can show data using numbers.



We asked and answered questions about data.

- How many students want a turtle as a class pet? (6)
- How many students want a dog or a rabbit as a class pet? (14)
- How many students took the survey? (20)

Think of some questions you can ask your family at home and make a representation to show the data.

Lesson 14: Center Day 3

- Let's work with data and practice adding and subtracting.

Warm-up: Number Talk: Plus or Minus 2

Find the value of each expression mentally.

- $4 + 2$

- $7 - 2$

- $9 - 2$

- $8 + 2$

14.2: Centers: Choice Time

Choose a center.

Five in a Row: Addition and Subtraction



Check it Off



Find the Pair



What's Behind My Back



Number Race



Lesson 15: Animals in the Jungle

- Let's make a survey and collect and show data.

Warm-up: Notice and Wonder: Wild Animals

What do you notice?

What do you wonder?



15.1: Collect Survey Data

Let's survey our classmates.

1. Circle 1 question:

- A. Which animal would you like to meet in real life?
- B. If you could spend one day as an animal, which one would you choose?
- C. Which animal would you like to spend vacation with?
- D. Which animal would you like to talk to?

2. Animal choices:

- _____
- _____
- _____

3. Collect and record 10 responses.

15.2: Ask Our Own Questions

Let's come up with questions about our data and answer them.

15.3: Share Data

Let's make posters to share what we learned from our surveys.

Section A: Practice Problems

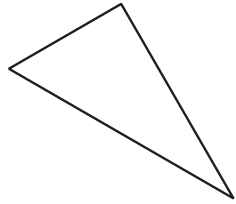
1. Pre-unit

Color in the shapes that are triangles.

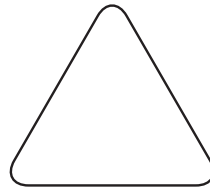
A



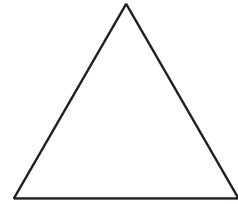
B



C



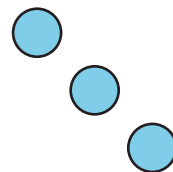
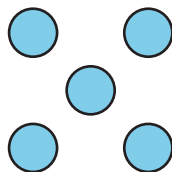
D



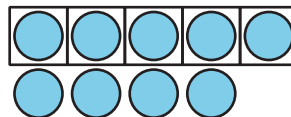
2. Pre-unit

How many do you see?

a. _____

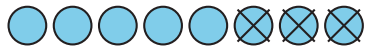


b. _____

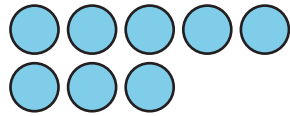


3. Pre-unit

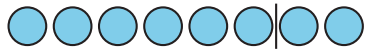
a. Match the pictures with the expressions.



$6 + 2$



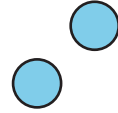
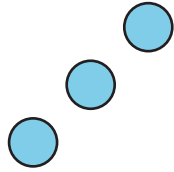
$5 + 3$



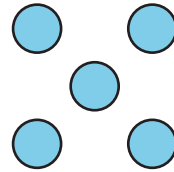
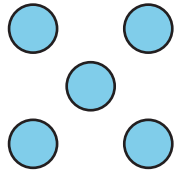
$8 - 3$

4. How many do you see?

a. _____



b. _____



(From Unit 1, Lesson 1.)

5. Circle the expression that matches the dots.



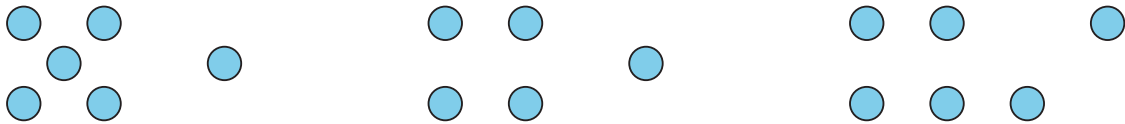
A. $2 + 2$

B. $4 + 3$

C. $3 + 3$

(From Unit 1, Lesson 2.)

6. Circle the dots that match the expression: $5 + 1$



(From Unit 1, Lesson 2.)

7. Find the value of each sum.

a. $3 + 1$

b. $3 + 2$

c. $7 + 2$

d. $7 + 1$

(From Unit 1, Lesson 3.)

8. Find the value of each difference.

a. $10 - 1$

b. $10 - 2$

c. $5 - 2$

d. $6 - 1$

e. $8 - 2$

(From Unit 1, Lesson 4.)

9. Show 2 ways you could use these cards in the game.



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

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

(From Unit 1, Lesson 5.)

10. **Exploration**

Materials needed:

- Number cards 2–10
- Two dot cubes

Directions:

a. Choose a number card.

Show 2 numbers on the dot cubes that add to make your number.

b. Can you show another way?

11. Exploration

Partner A: Hold up some fingers on each hand.

Partner B: Fill in the blanks to show how many:

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

Switch roles and play again.

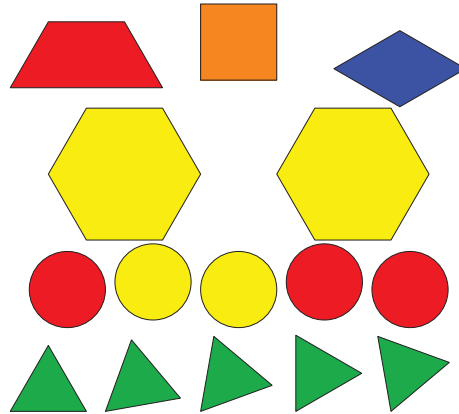
$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

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

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

Section B: Practice Problems

1. Here are some objects.



a. What are 2 categories you can use to sort these objects?

b. What are 2 different categories you can use to sort these objects?

(From Unit 1, Lesson 7.)

2. Here are some objects.



a. Show how you could sort the balls into categories.

b. How many balls are in each category?

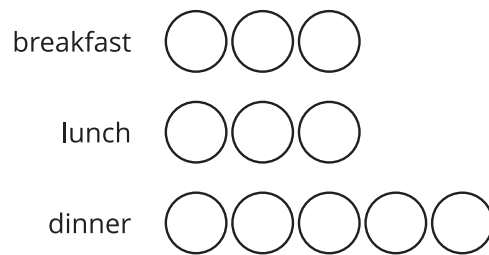
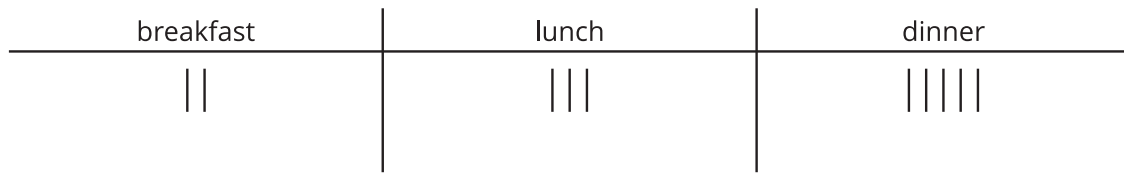
category 1: _____

category 2: _____

category 3: _____

(From Unit 1, Lesson 8.)

3. How are these representations the same?
How are they different?



(From Unit 1, Lesson 9.)

4. **Exploration**

Gather data from the classroom or home.

Sort your data into categories.

Show how you sorted the data on paper.

5. Exploration

There are 15 pattern blocks in a bag.

There are squares, triangles, and hexagons.

The chart shows how many squares are in the bag.

Pattern Blocks in Bag		
squares	triangles	hexagons
7	?	?

How many triangles could be in the bag?

How many hexagons could be in the bag?

Find as many solutions as you can.

Credits

CKMath K–8 was originally developed by Open Up Resources and authored by Illustrative Mathematics, <https://www.illustrativemathematics.org>, and is copyrighted as 2017–2019 by Open Up Resources. It is licensed under the Creative Commons Attribution 4.0 International License (CC BY 4.0). The Open Up Resources K–8 Math Curriculum is available at: <https://www.openupresources.org/math-curriculum/>.

Adaptations and updates to the IM K–8 Math English language learner supports are copyright 2019 by Open Up Resources and licensed under the Creative Commons Attribution 4.0 International License (CC BY 4.0),

Adaptations and updates to IM K–8 Math are copyright 2019 by Illustrative Mathematics, including the additional English assessments marked as "B", and the Spanish translation of assessments marked as "B". These adaptations and updates are licensed under the Creative Commons Attribution 4.0 International License (CC BY 4.0).

This particular work is based on additional work of the Core Knowledge® Foundation (www.coreknowledge.org) made available through licensing under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

Illustration and Photo Credits

Panther Media GmbH / Alamy Stock Vector: Cover B

Illustrative Math K–8 / Cover Image, all interior illustrations, diagrams, and pictures / Copyright 2019 / Licensed under the Creative Commons Attribution 4.0 International License (CC BY 4.0).

These materials include public domain images or openly licensed images that are copyrighted by their respective owners, unless otherwise noted/credited. Openly licensed images remain under the terms of their respective licenses.



CKMath™
Core Knowledge **MATHEMATICS™**

CKMath™
Core Knowledge MATHEMATICS™

A comprehensive program for mathematical skills and concepts
as specified in the **Core Knowledge Sequence**
(content and skill guidelines for Grades K–8).

Core Knowledge MATHEMATICS™
units at this level include:

Adding, Subtracting, and Working with Data

Addition and Subtraction Story Problems

Adding and Subtracting Within 20

Numbers to 99

Adding Within 100

Length Measurements Within 120 Units

Geometry and Time

Putting it All Together

www.coreknowledge.org

Core Knowledge Curriculum Series™

This book is shared online by Free Kids Books at <https://www.freekidsbooks.org> in terms of the creative commons license provided by the publisher or author.

want to find more books like this?



<https://www.freekidsbooks.org>

Simply great free books -

Preschool, early grades, picture books, learning to read,
early chapter books, middle grade, young adult,
Pratham, Book Dash, Mustardseed, Open Equal Free, and many more!

Always Free – Always will be!

Legal Note: This book is in CREATIVE COMMONS - Awesome!! That means you can share, reuse it, and in some cases republish it, but only in accordance with the terms of the applicable license (not all CCs are equal!), attribution must be provided, and any resulting work must be released in the same manner.

Please reach out and contact us if you want more information:

<https://www.freekidsbooks.org/about> Image Attribution: Annika Brandow, from You! Yes You! CC-BY-SA. This page is added for identification.