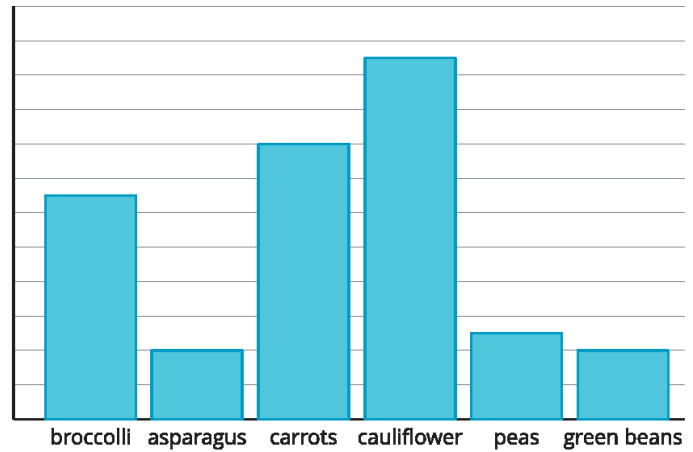




Putting It All Together

Favorite Type of Vegetable



Student Workbook



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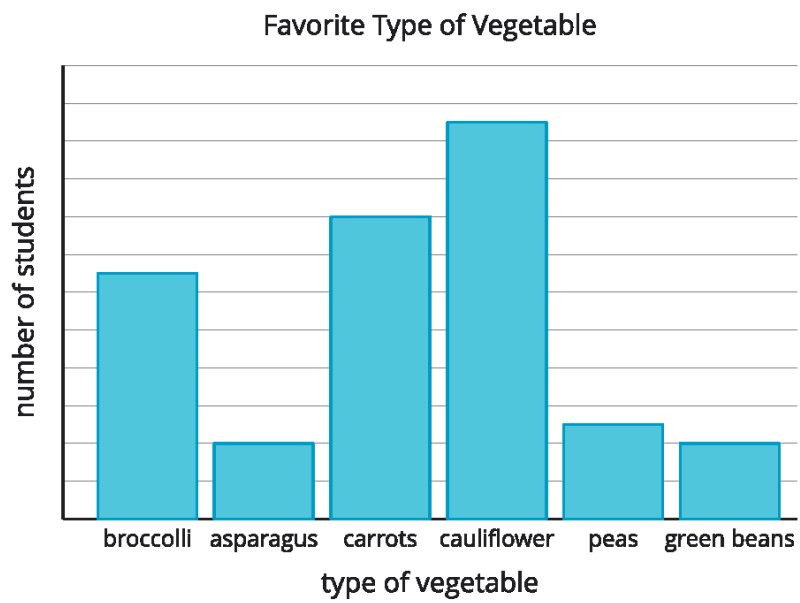
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Putting It All Together

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Putting It All Together
Student Workbook
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Lesson 1: Estimation Explorations with Fractions

- Let's explore estimations with fractions.

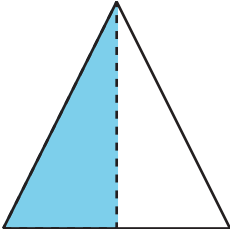
Warm-up: Which One Doesn't Belong: Fractions

Which one doesn't belong?

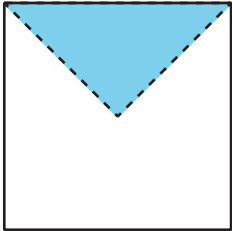
A



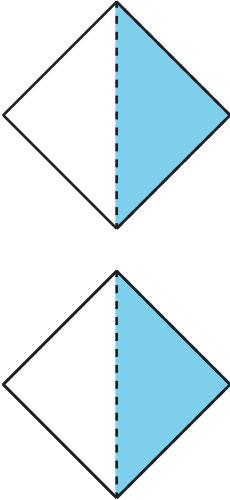
B



C

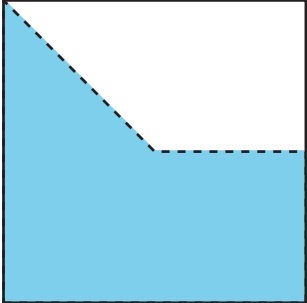


D



1.1: Estimation Exploration: Diagram

What fraction of the square is shaded?



Record an estimate that is:

too low	about right	too high

1.2: Estimation Exploration: Fraction Strip

What fraction of the strip is shaded?

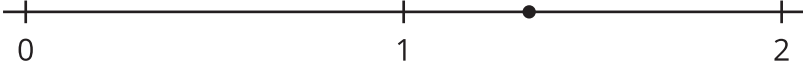


Record an estimate that is:

too low	about right	too high

1.3: Estimation Exploration: Number Line

What number does the point represent?



Record an estimate that is:

too low	about right	too high

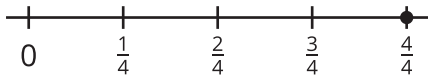
Lesson 2: Create Your Own Number Line

- Let's create number lines and compare fractions.

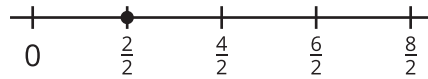
Warm-up: Which One Doesn't Belong: Fractions on Number Lines

Which one doesn't belong?

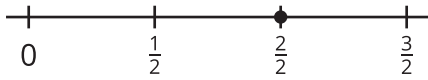
A



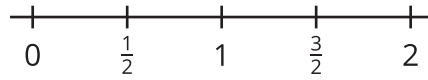
B



C



D



2.1: Create Your Own Number Line

Create a long number line on the floor.

Locate and label each fraction on the number line. Be prepared to explain your reasoning.

0	1	2	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{6}{2}$	$\frac{12}{3}$	$\frac{1}{4}$
$\frac{5}{4}$	$\frac{6}{6}$	$\frac{5}{6}$	$\frac{9}{8}$	$\frac{15}{8}$	$\frac{5}{3}$	$\frac{18}{6}$	$\frac{2}{8}$

2.2: Make a Statement

Write 6 fraction comparison statements about the numbers on your number line. Include 2 statements for each symbol ($>$, $=$, and $<$).

1.

2.

3.

4.

5.

6.

Choose 2 statements you wrote. Use numbers, pictures, or words to show that they are true.

Lesson 3: Fractions Round Table

- Let's discuss fractions.

Warm-up: What Do You Know About $\frac{1}{8}$?

What do you know about $\frac{1}{8}$?

3.1: Fractions Round Table

Discuss each statement in 3 rounds with your group.

- Round 1: Go around the group and state whether you agree, disagree, or are unsure about the statement and justify your choice. You will be free to change your response in the next round.
- Round 2: Go around the group and state whether you agree, disagree, or are unsure about the statement you or someone else made in the first round. You will be free to change your response in the next round.
- Round 3: State and circle the word to show whether you agree, disagree, or are unsure about the statement now that discussion has ended.

Repeat the rounds for as many statements as you can.

statement	round 1	round 2	round 3
A A fraction is a number less than 1.	agree disagree unsure	agree disagree unsure	agree disagree unsure
B A fraction can be located on a number line.	agree disagree unsure	agree disagree unsure	agree disagree unsure
C The numerator tells us the size of the part.	agree disagree unsure	agree disagree unsure	agree disagree unsure

statement	round 1	round 2	round 3
D The denominator tells us the number of parts.	agree disagree unsure	agree disagree unsure	agree disagree unsure
E Whole numbers are fractions.	agree disagree unsure	agree disagree unsure	agree disagree unsure
F Fractions are whole numbers.	agree disagree unsure	agree disagree unsure	agree disagree unsure
G One half is always greater than one third.	agree disagree unsure	agree disagree unsure	agree disagree unsure
H Fractions can be used to describe a length.	agree disagree unsure	agree disagree unsure	agree disagree unsure

Lesson 4: Tiny House: Design and Solve

- Let's design a tiny house.

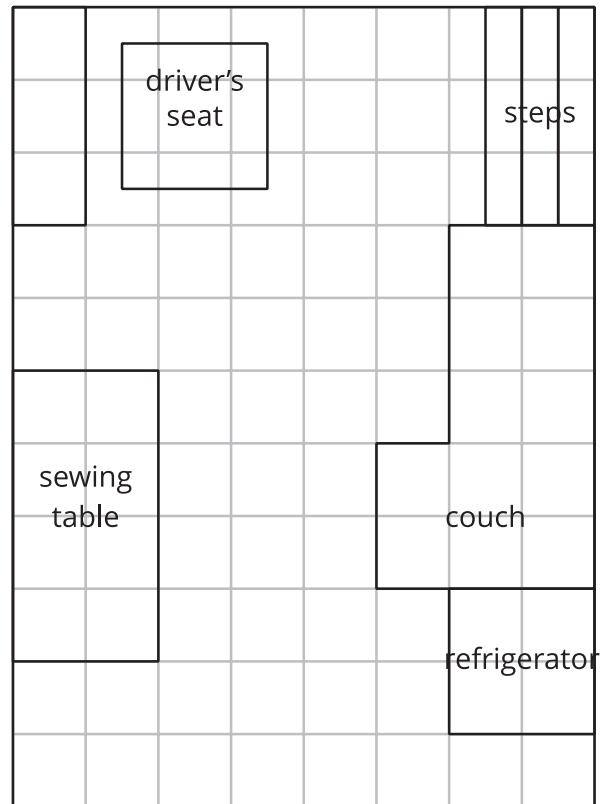
Warm-up: Notice and Wonder: Tiny Houses

What do you notice? What do you wonder?



4.1: Design a Tiny House

Here is an image of the inside of a converted school bus.



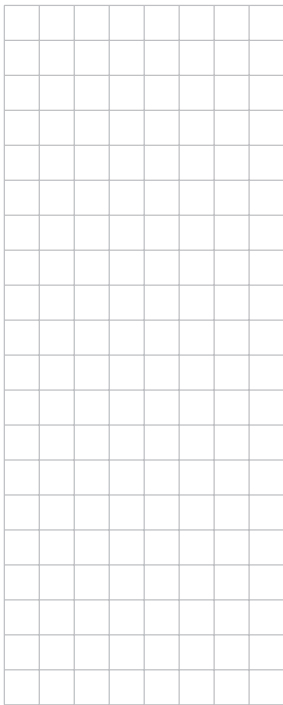
 represents 1 square foot

1. Choose the type of tiny house you will design. Be sure to consider the advantages and disadvantages of each type and how you'll use the area.

shipping container



8 ft x 20 feet

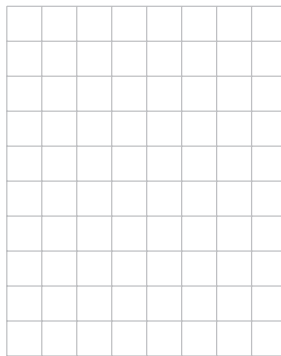


cabin

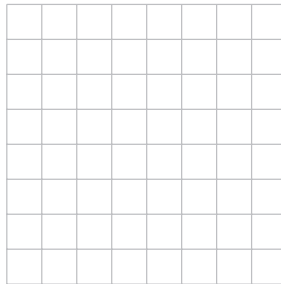


8 ft x 10 feet downstairs
8 ft x 8 feet upstairs

downstairs



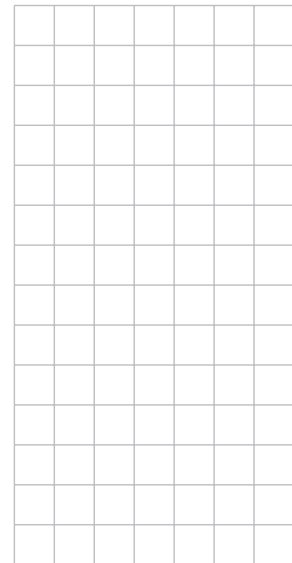
upstairs



school bus



7 ft x 14 feet



2. Create a design for your tiny house. Be sure to include:

- different rooms
- windows and a door
- furniture and any other details you think are important

4.2: Ask, Revise, and Answer

1. Write two questions about your tiny house design:
 - a. one question that involves area

- b. one question that involves perimeter

2. Work with a partner to answer your own questions about your tiny house design.
Make any revisions to your questions if needed.
3. Find a new partner. Answer their questions about their tiny house design.

Lesson 5: Tiny House: Cost

- Let's calculate the cost of finishing a room in a tiny house.

Warm-up: Estimation Exploration: Cost of a Room

What is the cost of all the labeled items in the bus?



Record an estimate that is:

too low	about right	too high

5.1: What's the Cost?

Choose a room from your tiny house to finish. Use the cost sheet to calculate the cost of finishing the room in your tiny house. Your budget is \$1,000.

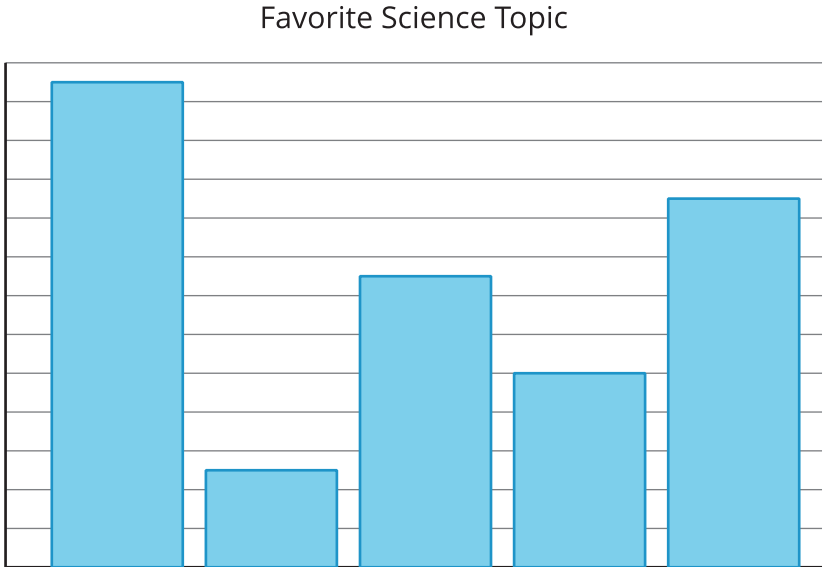
item	cost
flooring: tile wood carpet	 \$5 for each square foot \$4 for each square foot \$2 for each square foot
paint	\$25 for each gallon (up to 400 square feet)
bathroom plumbing	\$379
toilet	\$138
bathroom sink and faucet	\$112
kitchen plumbing	\$253
kitchen sink and faucet	\$227
cabinets	\$90 for each foot
shelving	\$20 for each foot
dishes, cups, forks, spoons, etc.	Prices vary. Research or estimate cost.
dishwasher	\$389
portable stove	\$174
furniture	Prices vary. Research or estimate cost.
compact washer/dryer combination	\$225
bed	\$189

Lesson 6: Survey the Class, Survey the School

- Let's survey a large group.

Warm-up: Notice and Wonder: Survey

What do you notice? What do you wonder?



6.1: Create a Survey

Create a survey that you'll use with a large group of students. It should include:

- a question
- up to 6 answer choices

6.2: Survey a Large Group

Your group will be surveying a lot of people. This means asking your survey question and giving the answer choices repeatedly.

To prepare for the work ahead, discuss these questions with your group:

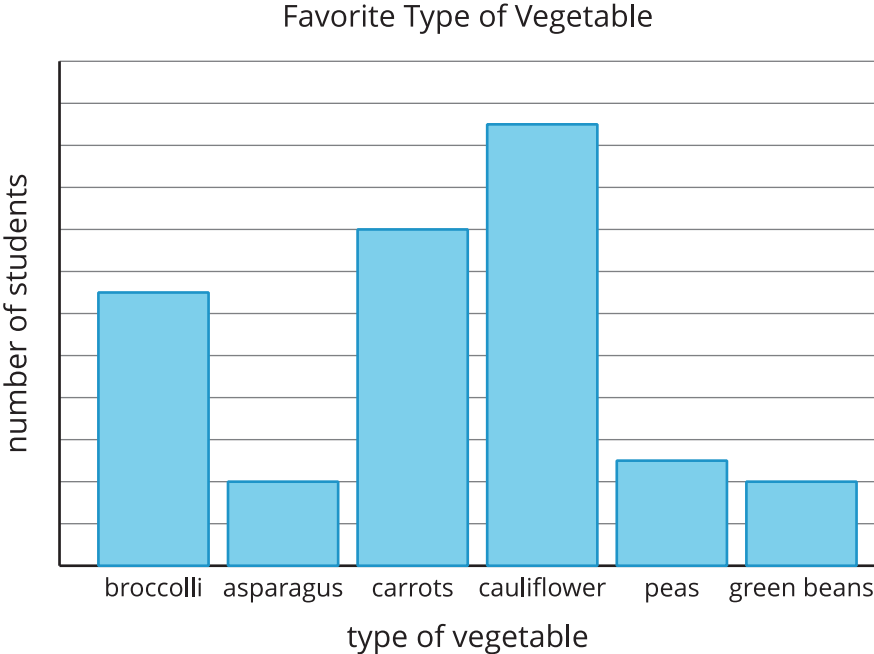
- How will you present the survey question and answer choices? Who will present them?
- How will you record and organize the responses? Who will record them?
- How will you make sure you don't record a response from the same student multiple times?

Lesson 7: Graph and Answer

- Let's represent our data on scaled bar graphs and answer questions about the data.

Warm-up: Notice and Wonder: Graph

What do you notice? What do you wonder?



7.1: Draw a Scaled Bar Graph

Work with your group to create a bar graph that represents your survey data. When drawing your bar graph, think about:

- what each unit on the graph represents
- how tall the bar will be for the most popular category and for the least popular category
- the title and labels to use

7.2: Ask and Answer Questions

1. Write questions that could be answered with your bar graph by completing these sentences.

a. How many more students liked _____
than _____ ?

b. How many fewer students liked _____ than
_____ ?

c. How many more students liked _____ or
_____ than _____ ?

2. Use your partner's graph to answer their questions. Show or explain your reasoning.

The answers to the questions from _____'s graph:

a.

b.

c.

Lesson 8: Multiplication Center Day

- Let's sort multiplication facts and play a multiplication game.

Warm-up: Number Talk: Products

Find the value of each expression mentally.

- 2×4

- 5×4

- 10×4

- 17×4

8.1: Card Sort: Multiplication

Quiz your partner on their multiplication facts and sort your partner's facts into one of these columns:

1. know it right away
2. can find it quickly
3. don't know it yet

Multiplication expressions I'm going to practice:

- 1.
- 2.
- 3.
- 4.
- 5.

8.2: Compare, Multiply Within 100

Play Compare with 2 players.

1. Split the deck between the players.
2. Each player turns over a card.
3. Compare the values. The player with the greater value keeps both cards.
4. Play until you run out of cards. The player with the most cards at the end of the game wins.

Lesson 9: Multiplication Game Day

- Let's play multiplication games.

Warm-up: Number Talk: Multiplying Large Factors

Find the value of each expression mentally.

- 4×10

- 4×20

- 4×21

- 4×24

9.1: Introduce Rectangle Rumble and How Close?

Directions for Rectangle Rumble:

- Choose a color for your rectangles different from your partner.
- Each partner:
 - Spin each spinner.
 - Shade in a rectangular area to represent the product of the two numbers.
 - Take turns until the grid can't fit any more rectangles.
- Add up your total area. The partner with the greatest total square units wins.

Directions for How Close?:

- Each partner:
 - Take 4 cards.
 - Choose 2–3 cards to multiply.
 - Write an equation to show the product of the numbers you chose.
 - Your score for each round is the difference between your product and 100.
- Take new cards so that you have 4 cards to start the next round.
- At the end of the game, add your scores from each round. The player with the lowest score wins.

9.2: Choice Time: Multiplication Games

Choose a center to practice multiplying within 100.

- Compare, Multiply within 100: Decide which expression has the greatest value.
- How Close? Multiply to 100: Choose 2–3 numbers to multiply to get a product closest to 100.
- Rectangle Rumble, Factors 1–10: Multiply numbers to create rectangular areas to fill a grid with the most squares.

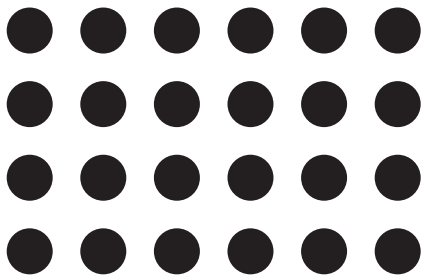
Lesson 10: Multiplication and Division

- Let's represent equal groups and write equal groups situations.

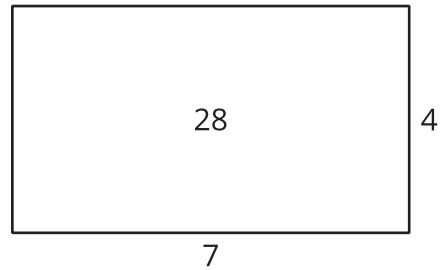
Warm-up: Which One Doesn't Belong: Multiplication and Division

Which one doesn't belong?

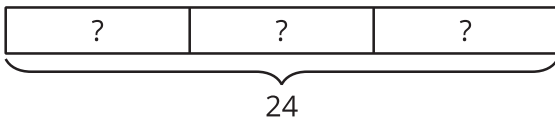
A



B



C



D

$$24 \div 6$$

10.1: Card Sort: Find the Match

Your teacher will give you a card that shows an equation or a diagram.

1. Find a classmate whose card represents the same situation or quantities as your card does. Be prepared to explain why your cards belong together.
2. Work with your partner to create a poster that includes:
 - a. your cards
 - b. a different diagram that your division equation could represent
 - c. a situation that your division equation could represent

Show your thinking and organize it so it can be followed by others.

Lesson 11: Division Game Day

- Let's play division games.

Warm-up: Number Talk: Divide 48

Find the value of each expression mentally.

- $48 \div 2$

- $48 \div 3$

- $48 \div 4$

- $48 \div 6$

11.1: Play Race to 1

Directions for Race to 1

On your first turn:

1. Roll a number cube. The number you roll is your divisor. (If you roll a 5, roll again.)
2. Choose one number from the top row of your table. Divide it by your divisor.
3. Write a division expression and record the quotient in the table. Your turn is done.

On all your other turns:

1. Roll a number cube. The number you roll is your divisor. (If you roll a 5, roll again.)
2. Choose either a quotient from one of your past turns or a new number from the top row of the table. Divide it by your divisor.
3. Write a division expression and record the quotient in the table.
4. The first player to get a quotient of 1 wins.

Sample Game

Jada rolled 3 on her first turn, then rolled 2 a few times afterwards.

start number	12	16	18	24
division expression	$12 \div 3$	$16 \div 2$		$24 \div 2$
quotient	4	8		12
division expression				$12 \div 2$
quotient				6
division expression				
quotient				

Game 1

start number	12	16	18	24
division expression				
quotient				
division expression				
quotient				
division expression				
quotient				
division expression				
quotient				
division expression				
quotient				
division expression				
quotient				
division expression				
quotient				
division expression				
quotient				

Game 2

start number				
division expression				
quotient				
division expression				
quotient				
division expression				
quotient				
division expression				
quotient				
division expression				
quotient				
division expression				
quotient				
division expression				
quotient				
division expression				
quotient				

11.2: Play Compare, Division

Play Compare with 2 players.

1. Split the deck between the players.
2. Each player turns over a card.
3. Compare the values. The player with the greater value keeps both cards.
4. Play until you run out of cards. The player with the most cards at the end of the game wins.

Lesson 12: Notice and Wonder

- Let's create a Notice and Wonder activity.

Warm-up: Notice and Wonder: Equal Groups

What do you notice? What do you wonder?



12.1: Design Your Notice and Wonder

1. Find an image that would encourage your classmates to notice and wonder about equal groups.
2. Write down the possible things students might notice and wonder about your image.

Students may notice:

○

○

○

Students may wonder:

○

○

○

12.2: Facilitate Your Notice and Wonder

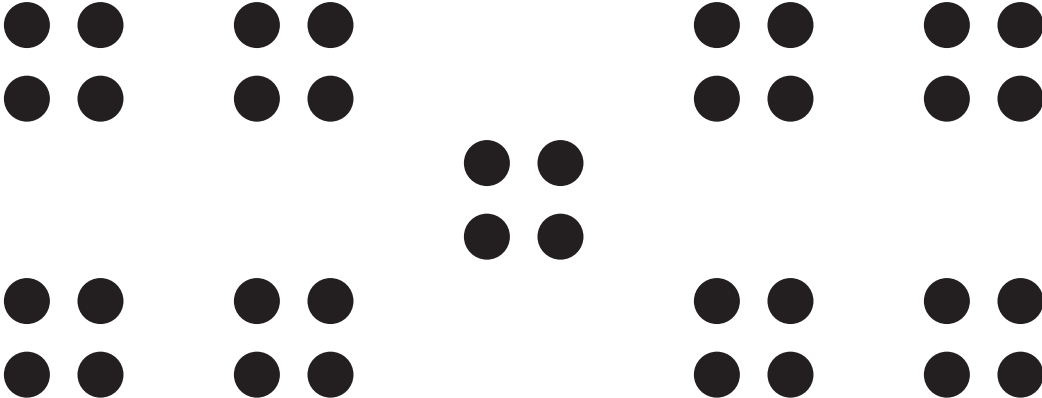
1. Display your image for your classmates.
2. Ask them, "What do you notice? What do you wonder?"
3. Give them a minute to discuss together.
4. Ask them to share what they notice and wonder.
5. Record their ideas.

Lesson 13: How Many Do You See?

- Let's create a How Many Do You See activity.

Warm-up: How Many Do You See: Equal Groups

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



13.1: Design Your How Many Do You See

1. Draw a dot image that would encourage your classmates to count equal groups.

2. Write down possible ways students might see the dots in your image.

Ways students might see the dots:

○

○

○

13.2: Facilitate Your How Many Do You See

1. Ask your classmates, "How many do you see? How do you see them?"
2. Flash your image.
3. Give 30 seconds quiet think time.
4. Display your image.
5. Give them a minute to discuss together.
6. Ask them to share how many they saw and how they saw them.
7. Record their ideas.

Lesson 14: Estimation Exploration

- Let's create an Estimation Exploration activity.

Warm-up: Estimation Exploration: Fractional Measurement

What is the length of this earthworm?



Record an estimate that is:

too low	about right	too high

14.1: Design Your Estimation Exploration

1. Find an object or an image that would make an interesting estimation problem. Write a question that would encourage others to answer with a length estimated to the nearest half or fourth of an inch.

2. Think about possible estimates others might make for the length of the object or image.

Record an estimate that is:

too low	about right	too high

3. Measure the length of the object or image to make sure your estimates make sense. If needed, revise your estimates.

14.2: Facilitate Your Estimation Exploration

1. Display your image for your classmates.
2. Ask them, "What is an estimate that's too high? Too low? About right?"
3. Give them a minute of quiet think time.
4. Give them a minute to discuss together.
5. Ask them to share their estimates.
6. Record their ideas.

Lesson 15: Number Talk

- Let's create a Number Talk activity.

Warm-up: Number Talk: Addition

Find the value of each expression mentally.

- $300 + 400$

- $300 + 437$

- $321 + 437$

- $425 + 514$

15.1: Number Talk Design 1

Here are three subtraction expressions.

- $600 - 400$

- $600 - 399$

- $500 - 399$

- _____

1. Think of at least two different ways to find the value of each difference mentally.

2. Write a fourth subtraction expression whose value can be found using one of the strategies you thought of.

15.2: Number Talk Design 2

Here are two addition expressions.

- $500 + 199$

- $504 + 199$

- _____

- _____

1. Think of at least two different ways to find the value of each sum mentally.

2. Write two more addition expressions whose value can be found using the strategies you thought of.

15.3: Number Talk Design 3

Write three subtraction expressions to complete the Number Talk.

- $900 - 400$

- _____

- _____

- _____

15.4: Number Talk Design 4

Write four addition or subtraction expressions to create a Number Talk.

• _____

• _____

• _____

• _____

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