

LESSON 6

Objective

Express whole numbers as fractions.

Common Core State Standards

- **3.NF.3c** Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. *Examples: Express 3 in the form $3 = 3/1$; recognize that $6/1 = 6$; locate $4/4$ and 1 at the same point of a number line diagram.*

Number and Operations—Fractions

Whole Numbers as Fractions

In previous lessons, students have been developing their understanding of unit and proper fractions between 0 and 1. Now they will expand on that knowledge to understand whole numbers represented as fractions. These skills will build the foundation for students to progress to creating fractions that represent parts of a group.

Try It! Perform the Try It! activity on the next page.

Talk About It

Discuss the Try It! activity.

- Write $\frac{4}{4}$ on the board. **Say:** Let's read the fraction and understand what it means. This fraction shows Aeron used 4 out of the 4 parts of the apple, which is the same as saying he used the whole apple.
- **Say:** When a fraction has the same numerator and denominator, it means the same as 1. Even if the fraction is $\frac{100}{100}$, it still means 1.
- **Say:** Any whole number can be written as a fraction by putting the whole number in the numerator and 1 in the denominator. The 1 in the denominator means the whole is divided into 1 part. The numerator tells the number of parts being used.

Solve It

With students, reread the problem. Have students draw the number line model of the 3 apples and write the fraction. Have them draw a number line from 0 to 1 divided into fourths and write the fraction for the whole apple cut into fourths. Have students write a few sentences explaining $3 = \frac{3}{1}$ and $\frac{4}{4} = 1$.

More Ideas

For other ways to teach about expressing whole numbers as fractions—

- Have students use Fraction Tower® Cubes and the Fraction Number Line to express a whole using different fractions. Have students place each Fraction Tower on the number line, mark the parts from 0 to 1, and write the fraction that expresses the whole.
- Have pairs work with Deluxe Rainbow Fraction® Circles. Have one student create a story about several whole items or one whole being divided into parts. Have the other student show the story using Fraction Circles and write the fraction that represents the story.

Formative Assessment

Have students try the following problem.

Crosby cut a cake into 12 pieces. He had 11 friends at his party. Everyone had a piece of cake. What fraction shows how much cake was eaten?

- A. $\frac{1}{1}$ B. $\frac{1}{12}$ C. $\frac{11}{12}$ D. $\frac{12}{12}$

Try It!

30 minutes | Groups of 4

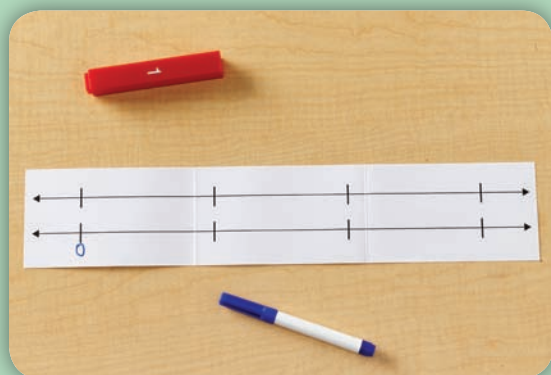
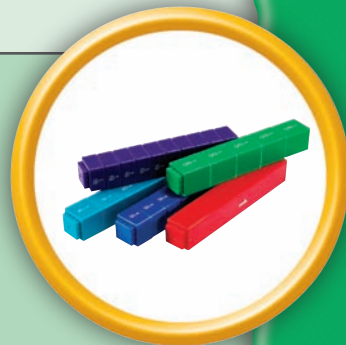
Here is a problem about expressing whole numbers as fractions.

Aeron buys a bag of 3 apples. He wants to use one apple to feed his 4 lizards. What fraction can we use to show the bag of apples? What fraction shows he cut one apple into 4 pieces to feed his lizards?

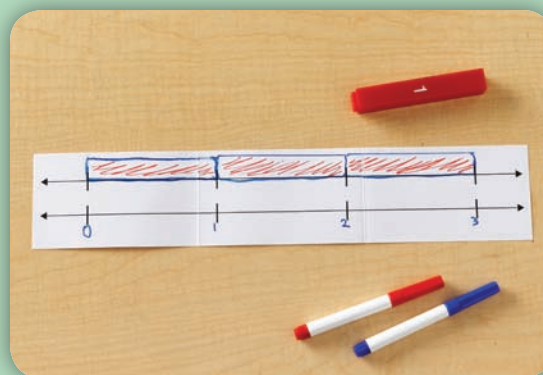
Introduce the problem. Then have students do the activity to solve the problem. Distribute Fraction Tower Cubes, Fraction Number Lines, and markers to students.

Materials

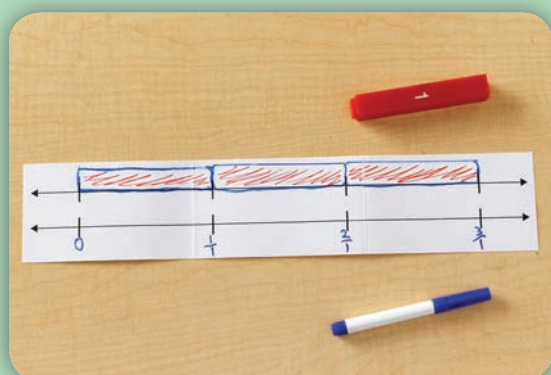
- Fraction Tower® Cubes (1 set per group)
- Fraction Number Line (1 per group)
- dry erase markers (1 set per group)



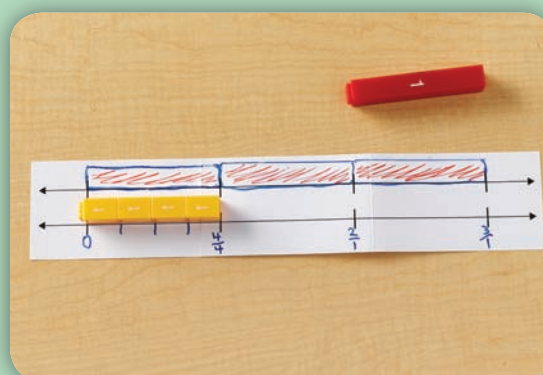
- 1. Say:** Let's represent the 3 apples. Have students find the red Fraction Tower. Ask them to look at the number line cards and find the double number line. Have them label the leftmost tick 0 using a dry erase marker.
Ask: What does the red tower represent? Elicit that it represents one whole apple.



- 2.** Have students lay the red tower on the first interval of the top number line. **Say:** The right end of the tower marks 1 apple. Label the tick mark and trace the tower. Have students trace the tower onto the second interval, label the tick for the second apple, and do the same for the third apple.



- 3. Say:** The denominator of a fraction tells how many parts the whole is divided into.
Ask: How many parts is the red tower divided into? **Say:** Just one. And the numerator tells the number of parts we are using. **Ask:** How many of the one whole part do we use for 1 apple? 2 apples? 3 apples? Guide students to change the tick labels to $\frac{1}{4}$, $\frac{2}{4}$, and $\frac{3}{4}$. Discuss.

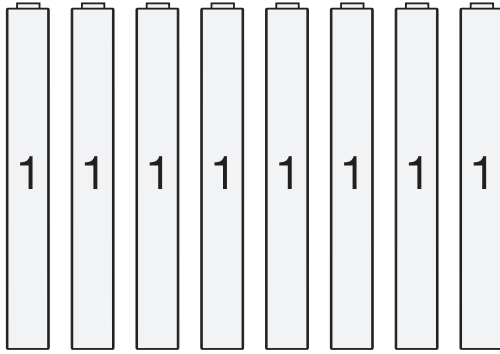


- 4. Say:** Aeron cut one apple into four parts for his lizards. Have students lay a yellow fraction tower on the first interval of the bottom number line and mark the fourths. **Ask:** How many parts does the tower represent?
Say: Four parts for the four pieces of the apple.
Ask: How many of the parts is Aeron using?
Say: All four. Write $\frac{4}{4}$ under $\frac{1}{4}$.

Use Fraction Tower Cubes and sketch paper to model each fraction.
Then write the fraction.

(Check students' work.)

1. Victor has 8 logs for the fireplace.



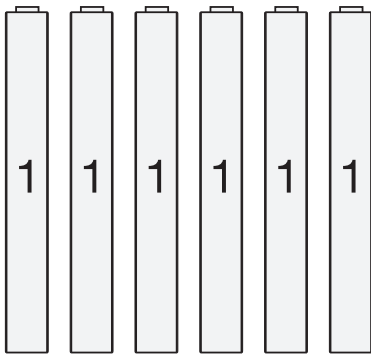
Fraction: $\frac{8}{1}$

2. Monica cut a loaf of bread into 10 pieces.



Fraction: $\frac{10}{10}$

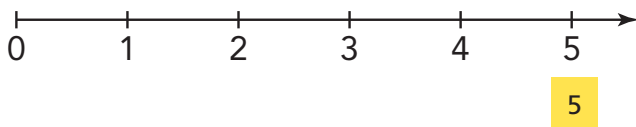
3. Jabar has 6 pencils for school.



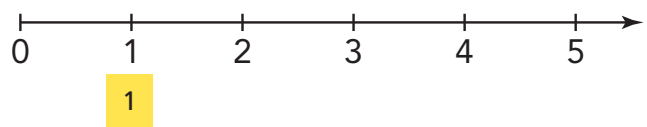
Fraction: $\frac{6}{1}$

Show where the fraction belongs on the number line.

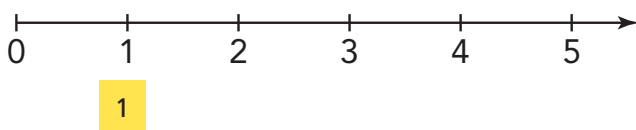
4. Amber had $\frac{5}{1}$ bananas in a basket.



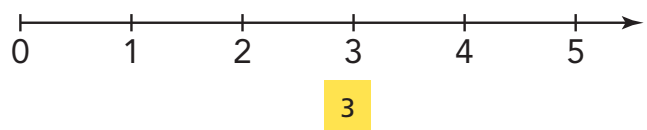
5. Kahlil used $\frac{2}{2}$ of the ribbon to wrap gifts.



6. Ethan used $\frac{3}{3}$ of the string.



7. Cali used $\frac{3}{1}$ boxes to pack gifts.



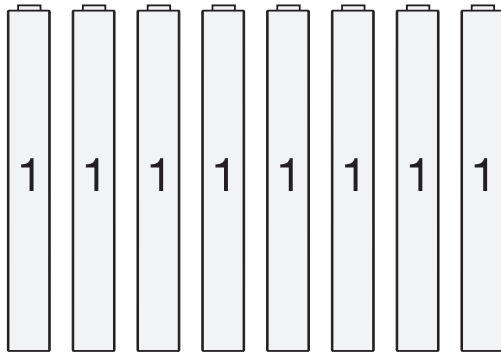
Answer Key

Challenge! Mark had a box of 4 pizzas for his party. Each pizza was cut into 8 pieces. After the party, all of the pizza was gone. His mom said $\frac{32}{32}$ of the pizza was eaten. Is she right? Use drawings to show if she is right or wrong. Explain.

Challenge: (Sample) Yes, she is correct. The students can show 4 pizzas each divided into 8 pieces, which gives 32 pieces of pizza. So if all of the pizzas together are 32 pieces, and all 32 pieces were eaten, the whole box of pizzas was eaten.

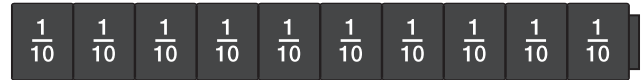
Use Fraction Tower Cubes and sketch paper to model each fraction. Then write the fraction.

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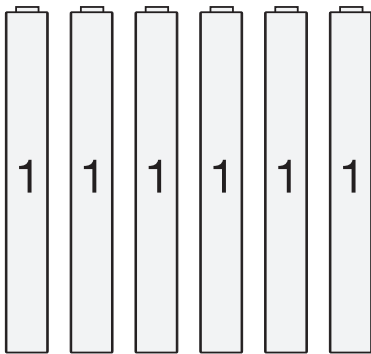
Fraction: _____

2. Monica cut a loaf of bread into 10 pieces.



Fraction: _____

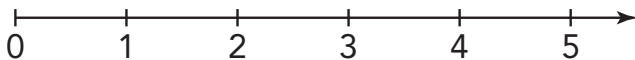
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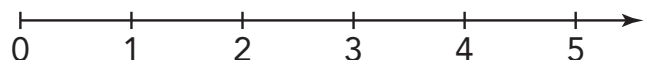
Fraction: _____

Show where the fraction belongs on the number line.

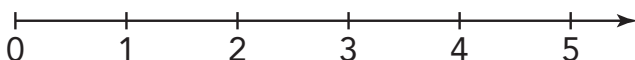
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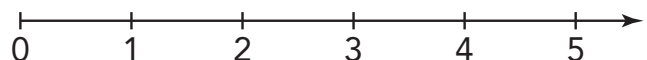
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Name _____

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