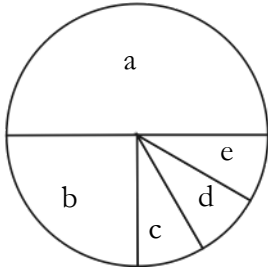


# Rational Number Project

Initial Fraction Ideas Lesson 9: Overview	Materials
Students continue to explore equivalence with pictures and fraction circles.	<ul style="list-style-type: none"> <li>∞ Transparencies 1 &amp; 2</li> <li>∞ Student Pages A, B, C</li> <li>∞ Fraction Circles for students</li> </ul>

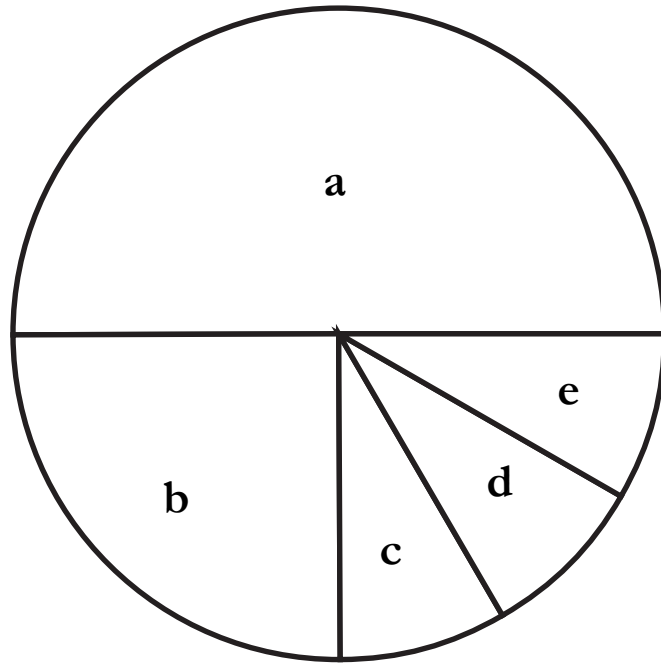
Teaching Actions	Comments
<p><b>Warm Up</b></p> <p>Joey and Ty each had a Hershey's candy bar. Joey ate <math>\frac{6}{8}</math> of his candy bar while Ty ate <math>\frac{3}{4}</math>. Who ate more?</p> <p><b>Large Group Introduction</b></p> <ol style="list-style-type: none"> <li>Show transparency 1 to the class.</li> </ol>  <ol style="list-style-type: none"> <li>Ask students to name section <b>a</b>; section <b>b</b>; section <b>c</b>. [Also ask what color fraction-circle piece matches each part]. Have them explain their reasoning.</li> <li>Ask students if fractional parts can have more than one name. Ask students to name section <b>a</b> in two different ways. Record on the transparency what they say with words and/or symbols:</li> </ol> <p>Examples:</p> $1 \text{ yellow} = \frac{1}{2};$ $1 \text{ blue} = \frac{1}{4}$ $1 \text{ yellow} = 2 \text{ blues: } \frac{1}{2} = \frac{2}{4}$	<p>Seeing equivalence from pictures is not the same as seeing it with manipulatives. Some children are better at adding and taking out lines drawn in a diagram. Don't be surprised to see differences in how children respond to these pictures.</p>

Teaching Actions	Comments
<p>4. Point to the section <math>(c + d + e)</math>. Ask: How are <b>b</b> and <math>(c + d + e)</math> alike? <i>[Cover the same amount]</i></p> <p>5. As a group write sentences using colors and symbols that describe equivalences in the picture.</p> <p>Examples</p> <p>1 blue = 3 reds; <math>1/4 = 3/12</math>  1 blue and 3 reds = 1 yellow; <math>1/4 + 3/12 = 1/2</math>  6 reds = 1 yellow; <math>6/12 = 1/2</math></p> <p>6. Show transparency 2 to the class and talk through the naming of each part: a, b, c, <math>(b + c)</math>, d, <math>(d + e)</math>, <math>(d + e + f + g)</math> in several ways. Record symbolic sentences.</p> <p>Examples:</p> <p><math>a = \frac{1}{6}; b = \frac{2}{6}; (b+c) = \frac{1}{2};</math>  <math>c = (d+e); \frac{1}{6} = \frac{4}{12}</math></p> <p>7. Repeat for the second rectangle at the bottom of the page.</p> <p><b>Small Group/Partner Work</b></p> <p>8. Assign in pairs Student Pages A, B, C. For problems 1, 2 and 3, children refer to their fraction circles; for the last 3 problems, children rely on diagrams. They may need to draw on the pictures. Encourage them to do so.</p> <p><b>Wrap Up</b></p> <p>9. Ask students to come to the board and share their strategies for solving problems on Student Page C.</p>	<p>Note: Problem 1 is already completed; this was the same as the problem on Transparency 1.</p>

## Translations

- ∞ Pictures to verbal to written symbols
- ∞ Pictures to manipulative to written symbols

## Transparency 1



Sentences I can write about the parts:

## Transparency 2

a	b			
c	d	e	f	g

Sentences I can write about the parts:

a	b	c	d	e

Sentences I can write about the parts:

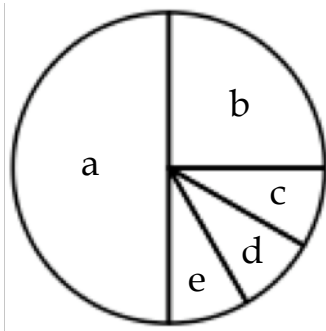
Joey and Ty each had a Hershey's candy bar. Joey ate  $\frac{6}{8}$  of his candy bar while Ty ate  $\frac{3}{4}$ . Who ate more? Explain your thinking.

## Problem Solving

### Directions:

For each of the drawings write the color corresponding to the part marked a, b, c, and so on. Then write a sentence that is true about all of the color-coded parts altogether. Use your fraction circles to help you, if you need them.

1.

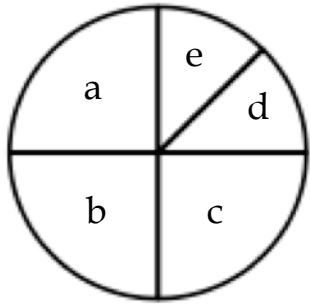


Color	Fractional Part of Whole Circle
a. yellow	$\frac{1}{2}$
b. blue	$\frac{1}{4}$
c. red	$\frac{1}{12}$
d. red	$\frac{1}{12}$
e. red	$\frac{1}{12}$

### Sentences I can write about the parts:

- a) 1 yellow and 1 blue and 3 reds equal 1 whole circle.  
 $\frac{1}{2}$  and  $\frac{1}{4}$  and  $\frac{3}{12} = 1$  whole.
- b) 1 blue and 3 reds equal 1 yellow.  $\frac{1}{4}$  and  $\frac{3}{12} = \frac{1}{2}$ .
- c) 3 reds equal 1 blue.  $\frac{3}{12} = \frac{1}{4}$ .
- d) 6 reds equal 1 yellow.  $\frac{6}{12} = \frac{1}{2}$ .

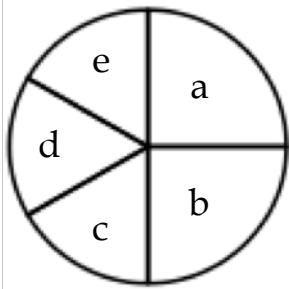
2.



Color	Fractional Part of Whole Circle
a.	
b.	
c.	
d.	
e.	

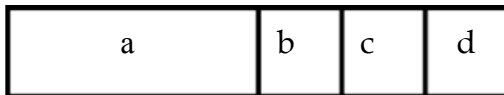
### Sentences I can write about the parts:

3.



Color	Fractional Part of Whole Circle
a.	
b.	
c.	
d.	
e.	

Sentences I can write about the parts:

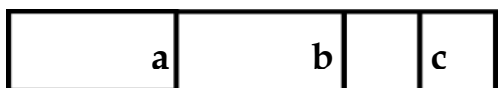


Fractional Part of Rectangle

- a. \_\_\_\_\_  
 b. \_\_\_\_\_  
 c. \_\_\_\_\_  
 d. \_\_\_\_\_

Sentences I can write about the parts:

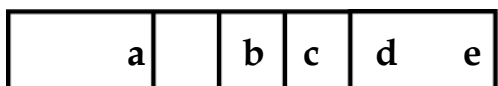
5.

Fractional Part of Rectangle

- a. \_\_\_\_\_  
b. \_\_\_\_\_  
c. \_\_\_\_\_  
d. \_\_\_\_\_

**Sentences I can write about the parts:**

6.

Fractional Part of Rectangle

- a. \_\_\_\_\_  
b. \_\_\_\_\_  
c. \_\_\_\_\_  
d. \_\_\_\_\_  
e. \_\_\_\_\_

**Sentences I can write about the parts:**