

Rational Number Project

Initial Fraction Ideas Lesson 9: Overview	Materials
Students continue to explore equivalence with pictures and fraction circles.	∞ Transparencies 1 & 2 ∞ Student Pages A, B, C ∞ Fraction Circles for students

Teaching Actions	Comments
<p>Warm Up</p> <p>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?</p> <p>Large Group Introduction</p> <ol style="list-style-type: none"> Show transparency 1 to the class. <div data-bbox="391 1024 657 1289" data-label="Diagram"> </div> <ol style="list-style-type: none"> Ask students to name section a; section b; section c. [Also ask what color fraction-circle piece matches each part]. Have them explain their reasoning. Ask students if fractional parts can have more than one name. Ask students to name section a in two different ways. Record on the transparency what they say with words and/or symbols: <p>Examples:</p> <p>1 yellow = $\frac{1}{2}$;</p> <p>1 blue = $\frac{1}{4}$</p> <p>1 yellow = 2 blues: $\frac{1}{2} = \frac{2}{4}$</p>	<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

- Point to the section $(c + d + e)$. Ask: How are **b** and $(c + d + e)$ alike? *[Cover the same amount]*
- As a group write sentences using colors and symbols that describe equivalences in the picture.

Examples

$$\begin{aligned}1 \text{ blue} &= 3 \text{ reds}; 1/4 = 3/12 \\1 \text{ blue and 3 reds} &= 1 \text{ yellow}; 1/4 + 3/12 = 1/2 \\6 \text{ reds} &= 1 \text{ yellow}; 6/12 = 1/2\end{aligned}$$

- Show transparency 2 to the class and talk through the naming of each part: a , b , c , $(b + c)$, d , $(d + e)$, $(d + e + f + g)$ in several ways. Record symbolic sentences.

Examples:

$$\begin{aligned}a &= \frac{1}{6}; b = \frac{2}{6}; (b+c) = \frac{1}{2}; \\c &= (d+e); \frac{1}{6} = \frac{4}{12}\end{aligned}$$

- Repeat for the second rectangle at the bottom of the page.

Small Group/Partner Work

- 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.

Wrap Up

- Ask students to come to the board and share their strategies for solving problems on Student Page C.

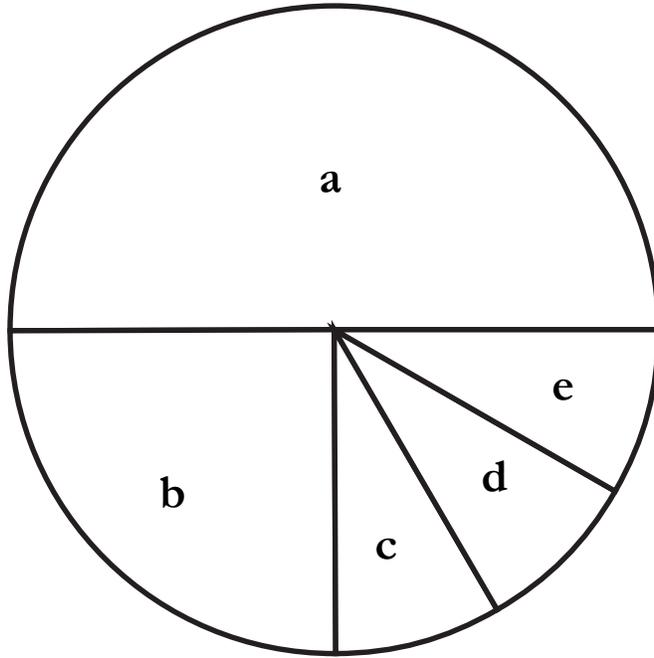
Comments

Note: Problem 1 is already completed; this was the same as the problem on Transparency 1.

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:

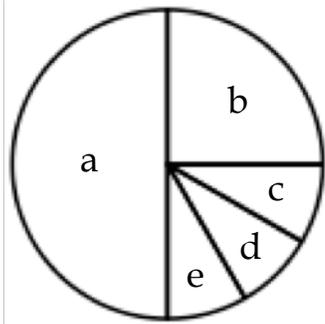
Joey and Ty each had a Hershey's candy bar. Joey ate $\frac{6}{8}$ of his candy bar while Ty ate $\frac{3}{4}$. Who ate more? Explain your thinking.

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.

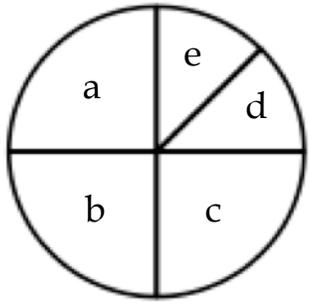


Color	Fractional Part of Whole Circle
a. yellow	$\frac{1}{2}$
b. blue	$\frac{1}{4}$
c. red	$\frac{1}{12}$
d. red	$\frac{1}{12}$
e. red	$\frac{1}{12}$

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. $\frac{6}{12} = \frac{1}{2}$.

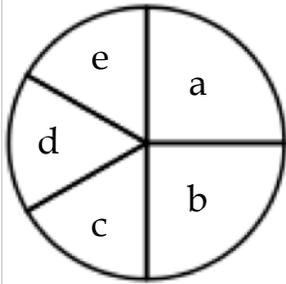
2.



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

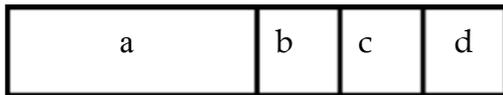
Sentences I can write about the parts:

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

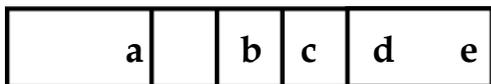


- a. _____
- b. _____
- c. _____
- d. _____

Sentences I can write about the parts:

6.

Fractional Part of Rectangle



- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

Sentences I can write about the parts: