Rational Number Project

Initial Fraction Ideas **Lesson 5: Overview**	Materials
Students are introduced to fraction symbols by translating from manipulatives to verbal to symbols.	∞ Fraction Circles for students and teacher ∞ Student Pages A – E

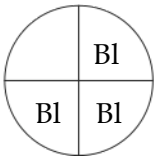
Teaching Actions

Warm Up

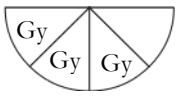
Use paper strips to show these fractions. Which is the largest? $\frac{1}{3}$ $\frac{1}{12}$ $\frac{1}{4}$

Large Group Introduction

1. Ask students to use fraction circles to show 3-fourths. They are to show two models. For example:



3 blues are 3-fourths of 1 black.



3 grays are 3-fourths of 1 yellow.

2. Ask how the two models are alike.

3. Record in words fraction name: 3-fourths. Explain that there is also a symbol name for 3-fourths and it is $\frac{3}{4}$.

4. Discuss the meaning of $\frac{3}{4}$. Ask how many equal parts each unit is divided into? Point to the bottom of the fraction symbol and explain that this4 tells us that. The 3 tells us that we are interested in 3 of

Comments

It's not important for students to memorize the words: numerator and denominator.

It's very important to help children verbalize the meaning of fraction symbols.

Have them talk through what they are doing with the fraction circles.

The action on the manipulative reinforces the meaning of the symbol.

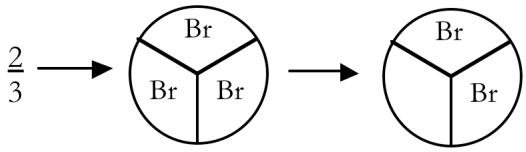
You can also return to previous student pages and have students record answers in symbol form.

Teaching Actions

these 4 equal parts. The fraction means $\frac{1}{4}$ and $\frac{1}{4}$ and $\frac{1}{4}$.

5. Write $\frac{2}{3}$ on the board and ask students to show that fraction with the fraction circles. Have them verbalize why their model does indeed represent $\frac{2}{3}$.

   First divide the whole circle into 3 equal parts …
   then explain



"I divided the circle into 3 equal parts to find what color is thirds. Then I only want two of them so

shows 2 of 3 equal parts. It is $\frac{1}{3}$ and $\frac{1}{3}$ more."

6. Repeat for $\frac{3}{5}, \frac{2}{6}, \frac{4}{8}, \frac{3}{3}$.

   Embed examples in context:

   A spinner for a game was divided into 5 equal parts. 3/5 of the spinner was blue. Show that amount with the fraction circles.

   A pizza was cut into 6 equal parts. You ate 2/6 of the pizza. Show that amount with the fraction circles.

Small Group/Partner Work

7. Student pages that follow reinforce the meaning of the symbol. Select the most appropriate (and amount of) practice that your students need.

Comments

Teaching Actions	Comments
Wrap Up 8. Ask students to describe 2-3 instances that fractions are used in everyday life or in science class. 9. Record situations from these examples that lead to recording a fraction with symbols. For example, to make chocolate chip cookies, you need to use $\frac{3}{4}$ of a cup of brown sugar. Draw a picture of a measuring cup, partition it into 4 equal parts and show $\frac{3}{4}$.	

Translations

- ∞ Manipulative to verbal to written symbols
- ∞ Written symbols to manipulative to verbal
- ∞ Real life to manipulative to written symbols
- ∞ Written symbols to written symbols
- ∞ Written symbols to pictures
- ∞ Pictures to written symbols

Use paper strips to show these fractions. Which is the largest?

$$\frac{1}{3} \qquad \frac{1}{12} \qquad \frac{1}{4}$$

Name_____ Lesson 5 / Student Page A

1. Write each fraction in words.

a. $\frac{2}{4}$ _____ e. $\frac{7}{10}$ _____

b. $\frac{3}{7}$ _____ f. $\frac{7}{15}$ _____

c. $\frac{6}{8}$ _____ g. $\frac{3}{12}$ _____

d. $\frac{3}{11}$ _____ h. $\frac{7}{9}$ _____

2. Write the word name and the symbol name for each fraction described.

a. 3 of 5 equal-size parts are shaded. _____ _____

b. 5 of 7 equal-size parts are shaded. _____ _____

c. 3 of 13 equal-size parts are shaded. _____ _____

d. 12 of 17 equal-size parts are shaded. _____ _____

e. 0 of 3 equal-size parts are shaded. _____ _____

3. Write the fraction symbol for each fraction world.

a. 9-tenths _____ e. 13-twenty-firsts _____

b. 7-eights _____ f. 17-eighteenths _____

c. 6-sixths _____ g. 0-fourths _____

d. 15-nineteenths _____

4. Imagine a circle divided into 4 equal parts.

   Three $\frac{1}{4}$ parts are shaded!

   What fraction tells how much is shaded in all? _____

   Draw a picture.

5. Imagine a rectangle divided into 5 equal parts.

   Four $\frac{1}{5}$ parts are shaded!

   What fraction tells how much is shaded in all? _____

   Draw a picture.

6. Write the word name and the symbol name each fraction describes.

   a. A rectangle is folded into 7 equal-size parts.
      5 parts are shaded.

   b. A circle is folded into 8 equal-size parts.
      4 parts are shaded.

Name_____ Lesson 5 / Student Page C

Directions:
Match each picture with its symbol or word name by writing the letter of the picture next to its symbol. The first one is done for you.

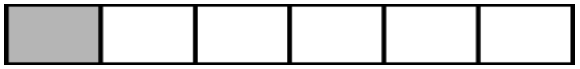
A.  $\frac{1}{6}$ F

B.  2-halves _____

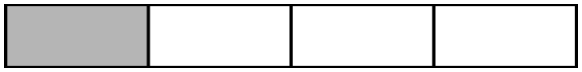
C.  $\frac{3}{4}$ _____

D.  2-thirds _____

E.  $\frac{3}{3}$ _____

F.  1-fourth _____

G.  $\frac{6}{6}$ _____

H.  $\frac{1}{3}$ _____

I.  3-sixths _____

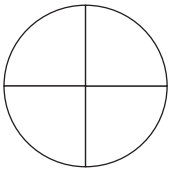
J.  $\frac{4}{6}$ _____

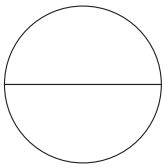
K.  2-fourths _____

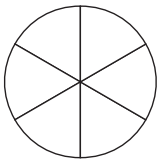
L.  $\frac{1}{2}$ _____

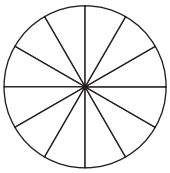
Name_____ Lesson 5 / Student Page D

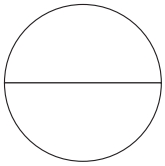
Shade each circle to show the fractional amount.

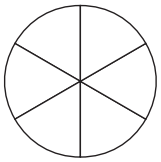
$\frac{1}{4}$ 

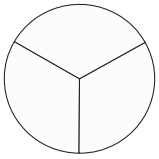
$\frac{2}{2}$ 

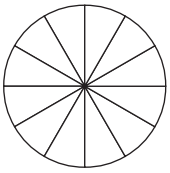
$\frac{1}{6}$ 

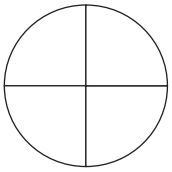
$\frac{5}{12}$ 

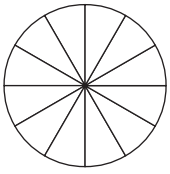
$\frac{0}{2}$ 

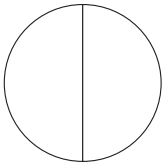
$\frac{5}{6}$ 

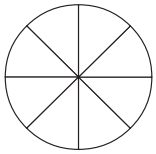
$\frac{1}{3}$ 

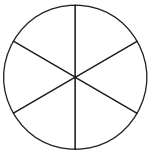
$\frac{11}{12}$ 

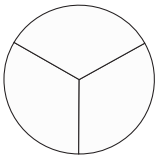
$\frac{4}{4}$ 

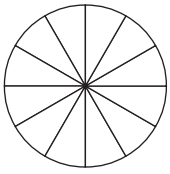
$\frac{2}{12}$ 

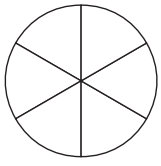
$\frac{1}{2}$ 

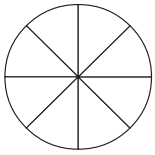
$\frac{6}{8}$ 

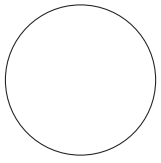
$\frac{1}{6}$ 

$\frac{0}{3}$ 

$\frac{6}{12}$ 

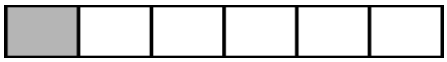
$\frac{6}{6}$ 

$\frac{8}{8}$ 

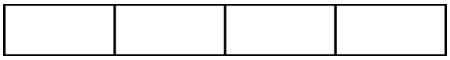
$\frac{\textit{You}}{\textit{Decide}}$ 

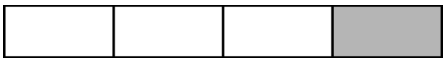
Write the name for the shaded part of each rectangle in words and then in symbols.

1. 1 – half $\frac{1}{2}$ 

2. 

3. 

4. 

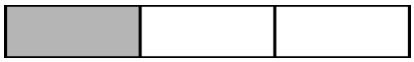
5. 

6. 

7. 

8. 

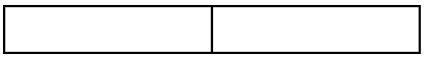
9. 

10. 

11. 

12. 

13. 

14. 

15. 

16.