Overview

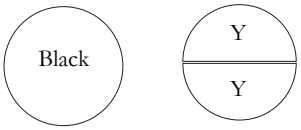
Students explore relationships among circle pieces, modeling and orally naming fraction amounts for: 1-half, 1-third, and 1-fourth.

Materials

- Fraction Circles for students and teacher
- Student Page A, B

Teaching Actions

1. Ask students to take out a black circle. Model how to divide the black circle into 2 equal parts by showing that 2 yellow parts cover the whole circle.

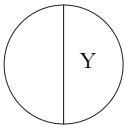


[2 yellows cover 1 black circle]

2. Note that 1 black equals 2 yellows or 2 yellows equal 1 black. Ask: Are the 2 parts covering the whole equal?

3. Conclude by stating that when 2 equal parts equal one whole, each part (pick up 1 yellow) is called one-half. This yellow piece is one-half of the black circle.

4. Show one-half by placing 1 yellow on the black circle. "*1 yellow covers half of the black circle.*"

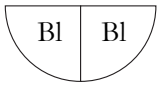


Comments

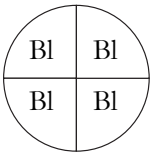
1. Flexibility of unit is stressed right from the beginning by having students find multiple representations for 1/2, 1/3, and 1/4.

The critical variable with fractions is that a unit is divided into equal parts. A single part can be given a fraction name. Its name depends on what it is being compared to.

Example:



2 blues equal 1 yellow so 1 blue is one-half of the yellow. [here yellow is the unit]



4 blues equal 1 black. 1 blue is one-fourth of the black circle. [here black is the unit]

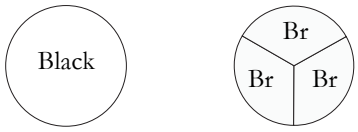
Teaching Actions

4. Continue by looking for other examples for one-half. Show one blue piece and ask: If one blue is my unit, how can we divide this piece into 2 equal parts? What color pieces will do this?

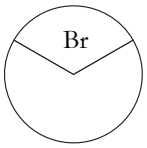
5. Use these questions: Are the 2 parts equal? 1 gray is 1 of 2 equal parts; what fraction of the blue piece is 1 gray? [1-half]

6. Show 1 yellow and ask students to consider the yellow as the unit, divide it into 2 equal parts and orally name each part.

7. Model, using the black circle as the unit, representations for thirds.



8. 3 browns cover 1 black; 1 brown is 1 of 3 equal parts; 1 brown is one-third of the black. Show as:



9. Find other examples for 1-third using 1 yellow and 1 brown and then 1 blue as the unit.

10. Model fourths using 1 black, 1 yellow, and 1 brown as units.

Comments

2. Students are naming fractions in the verbal mode only. In the next lesson students will record as: 1-fourth.

3. You may want to show how other units can be partitioned into halves:

1 pink → 2 reds

1 brown → 2 pinks

1 orange → 2 purples

Teaching Actions

11. End the development part of the lesson with a non-example. Show how 2 blues and 1 yellow cover the black circle. Pick up 1 blue and say that this piece is 1 of 3 parts of the circle so it is one-third of the circle. Ask: Is this true? If I wanted to know what part of the black circle 1 blue is, what must I do?

[Repeat showing 2 browns and 2 pinks covering the black circle. 1 pink does not equal 1-fourth].

12. Student pages A & B present problems similar to ones presented in large group as well as problems within realistic contexts. Assign to students in pairs, as they are to answer the questions orally.

Comments

4. Another question to assess understanding of the "big idea" in this lesson is to present the following scenario:

Lianna said that 1 red piece is one-third; Rodrigo said 1 red is one-fourth. Who is correct?

Note that 1 red is one-third of the blue; 1 red is also one-fourth of the brown. Both Lianna and Rodrigo are correct once you know what unit they are comparing the red to.

5. Another way to assess the lesson's big idea is to put one of each of these colors: yellow, blue, pink, and red on the overhead and ask: *"You have called all of these 1-half, yet they are different sizes. How is that possible?"*

Name: _____

Lesson 2

***Student Page* A**

Directions:
The class will work together in groups or in pairs on these problems. Answers are to be given orally or by drawing a picture. On some of the problems children may want to use the fraction circles to help solve the problem.

1. The yellow piece is the unit.
   How many blues cover the yellow piece? _____
   1 blue is _____ of the yellow.
   (say the word)

2. The blue piece is the unit.
   How many reds cover the blue piece? _____
   1 red is _____ of the blue.
   (say the word)

3. The brown piece is the unit.
   How many reds cover the brown piece? _____
   1 red is _____ of the brown.
   (say the word)

4. What color is 1-half of the blue? _____

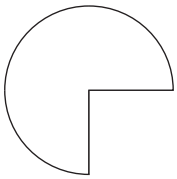
5. What color is 1-third of the yellow? _____

6. Draw a picture of a pizza. Show on your drawing the pizza cut into 2 fair shares.

   Each fair share is _____ of the whole pizza.
   (say the word)

Name: _____

7. Here is a picture of a pizza with one piece removed.



The piece is _____ of the whole pizza.
(say the word)

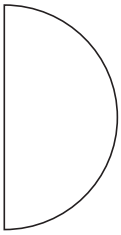
8. Here is a picture of a candy bar which someone has started to cut into pieces.

The small piece is _____ of the whole candy bar.
(say the word)

Draw lines to finish cutting the candy bar into equal parts.

9. Mary's patio is a whole circle. Draw a picture of Mary's patio. Show on your drawing that the patio is in 3 equal-size parts. Each part is _____ of Mary's patio.
(say the word)

10. John has a patio that looks like this:



11. Draw on John's patio to show it divided into 3 equal-size parts. Each part is _____ of John's patio.
(say the word)

Mary said "John's patio is really one-half (not a whole)." What would you say to Mary?