

Rational Number Project

Level 1 / Lesson 1 / Overview

Lesson provides guided exploration with fraction circles. Students start to become familiar with colors and relationships like 3 browns cover 1 black and 1 brown is bigger than 1 red.

Materials

- Fraction Circles for students and teacher
- Student Page A
- Transparency 1

Teaching Actions

1. Start the lesson by asking children to sort through their fraction circles to answer these questions:
 - (a) How many blues cover the black circle?
 - (b) Which is bigger, 1 brown or 1 gray?
 - (c) How many pinks cover 1 yellow?
 - (d) How many browns cover the black?
 - (e) Which is bigger, one brown or 2 reds?
 - (f) How many purples cover a yellow?
 - (g) How dark blues are there? Light blues?
2. Explain to the students that they are to continue their exploration by using the circles to complete Student Page A.

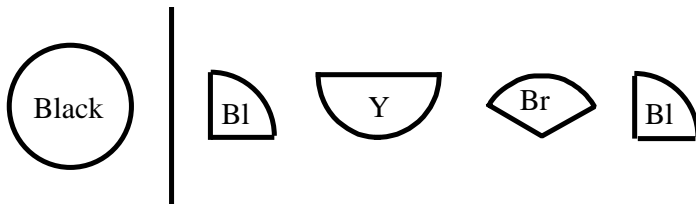
Comments

1. Students need to play with the fraction circles before developing a formal language for describing relationships among the pieces.
2. There are two different blues: a set of 4 dark blue pieces; a set of 7 light blue pieces. In the lessons the color "blue" refers to the set of 4 dark blue pieces. "Light blue" will refer to the set of 7 blues.
3. Different ways to approach Student Page A:
 - * Students do page individually and then compare with a partner.
 - * Students do page with a partner.
 - * Do a few problems together and then students finish on their own.

Teaching Actions

3. End the lesson by working through Transparency 1. The figure on the left represents the circle part you want to cover. To the right are the circle parts. Students are to determine which combination of parts will cover the shape on the left. All pieces selected do not have to be the same color.

Example:



1 Yellow + 2 Blues cover 1 Black

4. Encourage students to guess first and then use their fraction circles to find the exact combination.

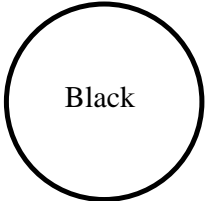
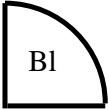
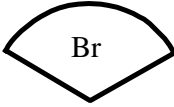
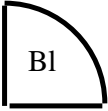
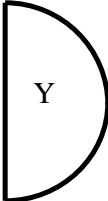
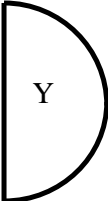
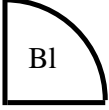
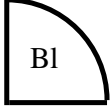



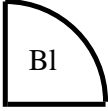




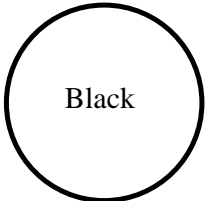
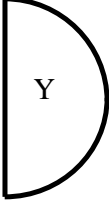
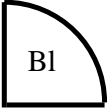





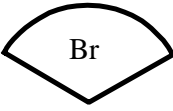
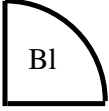



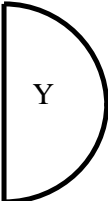
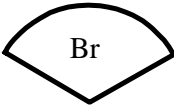
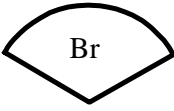



Comments

4. If some students finish Student Page A ahead of others, ask them to create their own problems and record them on the back of the page or put them on the board for others to solve.
5. You may want to duplicate Transparency 1 for students.
6. To encourage students to guess you might want to emphasize making "hypotheses". Write the work **hypothesis** on the board. Record students' guesses, test them out and reach group consensus.

Exploring with the Fraction Circles

1. _____ browns equal 1 whole circle.
2. 1 whole circle equals _____ pinks.
3. _____ reds equal 1 whole circle.
4. _____ pinks equal 1 brown.
5. 1 brown equals _____ reds.
6. 1 brown is (less than, equal to, greater than) 1 pink.
7. 1 red is (less than, equal to, greater than) 1 brown.
8. 1 yellow is (less than, equal to, greater than) 1 brown.
9. 1 yellow and 1 brown and 1 _____ equals 1 whole circle.
10. 1 yellow equals 1 brown and 2 _____ .
11. 3 pinks and 1 _____ equal 1 whole circle.
12. _____ grays and 1 blue and 1 yellow equals 1 whole circle.
13. 2 grays and _____ blue equals 1 yellow.
14. 1 pink equals _____ reds.
15. 4 _____ equal 1 yellow.

Lesson 1 Transparency 1

 <p>Black</p>	   
 <p>Y</p>	    
 <p>Bl</p>	   
 <p>Black</p>	      
 <p>Br</p>	   
 <p>Y</p>	    

Post Lesson Reflection

Lesson _____

1) Number of class periods allocated to this lesson: _____

2) Student pages used: _____

3) Adaptations made in lesson development part:
[For example: added extra problems, eliminated problems, changed fractions used]

4) Adaptations made on Student pages:

5) To improve lesson, next time I should: