Rational Number Project

Initial Fraction Ideas	Materials
Lesson 1: Overview Lesson provides guided exploration with fractions circles. Students start to become familiar with colors and relationships like 3 browns cover 1 black and 1 brown is bigger than 1 red.	 ∞ Fraction Circles for students and teacher ∞ Student Page A ∞ Transparency 1
leaching Actions	Comments
 Large Group Introduction Start the Lesson by asking children to sort through their fraction circles to answer these questions: 	Students need to play with the fraction circles before developing a formal language for describing relationships among the pieces.
(a) How many blues cover the black circle?	There are two different blues: a set of 4 dark blue pieces; a set of 7 light blue
(b) Which is bigger, 1 brown or 1 gray?	refers to the set of 4 dark blue pieces. "Light blue" will refer to the set of 7
(c) How many pinks cover 1 yellow?	blues.
(d) How many browns cover the black?	Different ways to approach Student Page A:
(e) Which is bigger, 1 brown or 2 reds?	Students do page individually and then compare with a partner
(f) How many purples cover 1 yellow?	
(g) How many dark blues are there? Light blues?	Students do page with a partner.
Small Group/Partner Work	Do a few problems together and then students finish on their own.
2. Explain to the students that they are to continue their exploration by using the circles to complete Student Page A.	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
Wrap Up	on the board for others to solve.
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.	

Teaching Actions	Comments
All pieces selected do not have to be of the same color. <u>Example</u>	You may want to duplicate Transparency 1 for students.
Black Blue Yellow Brown Blue	
 Encourage students to guess first and then use their fraction circles to find the exact combination. In the above example, 2 blues and 1 yellow would cover the circle. 	To encourage students to guess you might want to emphasize making "hypotheses". Write the word hypothesis on the board. Record students' guesses, test them out and reach a group consensus.

Translations

- ∞ Verbal to manipulative
- ∞ $\;$ Picture to manipulative to verbal $\;$
- ∞ Manipulative to written symbols



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.	