

# Rational Number Project

## Level 1 / Lesson 3 / Overview

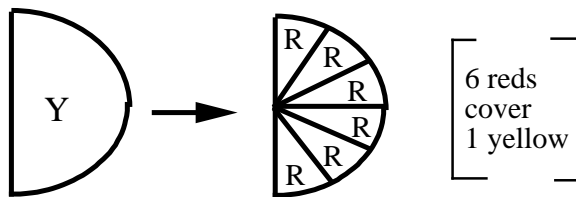
Students model and name (orally and in written words) unit fractions with denominators greater than 4.

## Materials

- Fraction Circles for students and teacher
- Student Page A

## Teaching Actions

1. Show one yellow piece. Ask students to divide it into six equal parts.



2. Explain that since 6 reds cover 1 yellow, 1 red is one-sixth of the yellow.

3. Ask students to divide a black circle into 6 equal parts. What fraction piece is one-sixth of the black?

4. Make this chart to show the relationship between the number of equal parts a unit is divided into and the word name for that number of divisions.

Number of Equal Parts Unit is divided into	Word Name	
2	half	halves
3	third	thirds
4	fourth	fourths
5	fifth	fifths
6	sixth	sixths
7	seventh	sevenths

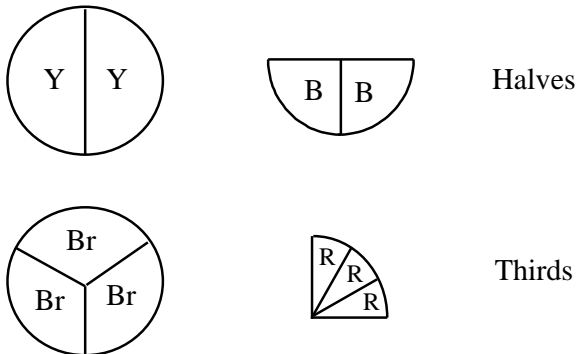
[Continue to include 8, 9, 10, 12,15]

## Comments

1. Make a large classroom chart for students to use as reference for the rest of the fraction unit. You might include a third column showing a picture of a unit (not always a whole circle) divided into the appropriate number of equal parts.
2. You may want to have students make their own personal chart.

## Teaching Actions

For each item in the chart show at least 2 physical models. For example:



**Students should model each example with their fraction circles.**

5. Students should help you find these different representations.

- You may suggest the unit and ask them to divide it into a certain number of equal parts.
- You might ask students to suggest the unit. For example, say *"the next value in the chart is to model sixths. What unit can we use?"*

6. Once the chart is completed work through these problems:

- Using the black circle as the unit, ask students to find the color that divides the unit into 4 equal parts. Hold up 1 of 4 parts, call it "one-fourth", and record the written name as 1-fourth.
- Using the yellow circle as the unit, ask students to find the color that divides the unit into 4 equal parts. Hold up 1 of four parts; call it "one-fourth"; record 1-fourth.
- Ask: "How are the two models for 1-fourth alike? different?"

7. Repeat for sixths and twelfths using two different units.

## Comments

3. Students initially record fractions in words like: *1-fourth*; *1-sixth*. Research suggests that students make fewer reversals with the symbols (for example, writing  $3/2$  for  $2/3$ ) when they first write fractions in words.

4. You may want to do more examples.

## Teaching Actions

8. To prepare students for Student Page A ask the following questions. Have students record answers using word names.

- The blue piece is the unit. What fraction name can you give 1 gray piece? 1 red piece?
- The brown piece is the unit. What fraction name can you give 1 pink? 1 white? 1 gray?

9. Assign Student Page A.

10. End the class with this game: Teacher says: "Two of the color I am thinking of equal one yellow. What color is it? What fractional name can I give each piece?"

## Comments

5. You might consider assigning students Page A without this introduction. This will make the activity more of a problem solving activity.

6. Extra challenges:

- If the yellow piece is the unit, what value does the black circle have?
- If the blue piece is the unit, what value does the yellow piece have? the black circle?

These questions may lead to a nice discussion. Students may question how to express the answer. If the yellow piece is the unit ( or one) then the black circle is 2 units, 2 wholes or just 2.

**Naming Fraction Amounts  
Using Circles**

Use fraction circles to find the names of the different fraction pieces.

I. The black circle is the unit. What fraction name can you give these pieces?

1 yellow \_\_\_\_\_ 1-half \_\_\_\_\_ 1 brown \_\_\_\_\_

1 blue \_\_\_\_\_ 1 gray \_\_\_\_\_

1 white \_\_\_\_\_ 1 green \_\_\_\_\_

1 red \_\_\_\_\_ 1 pink \_\_\_\_\_

II. Now make 1 yellow the unit. What fraction name can you give these pieces?

1 blue \_\_\_\_\_ 1 gray \_\_\_\_\_

1 pink \_\_\_\_\_ 1 red \_\_\_\_\_

III. Change the unit to 1 blue. What fraction name can you give these pieces?

1 gray \_\_\_\_\_ 1 red \_\_\_\_\_

IV Change the unit to 1 orange. What fraction name can you give these pieces?

1 purple \_\_\_\_\_ 1 green \_\_\_\_\_

## 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: