Fraction Strips

Materials:

6 different colors of 12-by-18-inch construction paper
cut into 3-by-18-inch strips
paper cutter (can cut numerous strips at once)
Thin marker (black) and a ruler

Directions:

!. To begin the lesson, give students six precut strips of paper in six different colors. Specify one color and have students hold up the strip of this color. Tell students that this strip will represent the whole. Have students write "one whole" on the fraction strip.

2. Next, ask students to pick a second strip, and fold it into two equal pieces. Ask students what they think each of these strips should be called (one-half or 1/2). Have students label their strips accordingly, using both the word and the fractional representation. Ask students to highlight the fold marks, using a ruler and black marker.

3. Ask students to take a different color strip. Fold the strip into two equal parts. Next fold the strip in half again. Ask students to predict the number of equal parts the strips will have. Open the strip and highlight the folds using a marker and a ruler. Ask students what they think each of these strips should be called? (one-fourth or 1/4). Label the strips naming some parts as one-fourth and some of the sections as 1/4.

4. Continue the process of folding, marking, and naming strips for eighths, thirds, and sixths using words and fractional notation. What fraction of the whole does one section of your strip represent?

5. Have students take out their “whole” and ask, “Which strip is 1/2 of the whole?” How do you know? “Which strip is 1/4 of the whole?” How do you know? Continue asking about 1/8, 1/3, and 1/6. Students should experiment with the strips until they are consistently arriving at the correct answer.

6. Have students work in pairs to line up their fraction strips and find as many relationships as they can. Have students record these relationships on paper. When students have finished, have them share the relationships they discovered. Record relationships on chart paper and discuss. Students may notice that one whole is the same as 2/2, 4/4, 8/8, 3/3, or 6/6. Students can also fold strips to show equivalent strips.

Examples of patterns should might discover:

What fractions are equivalent to 1/2? How do you know? Students may fold fraction bars and discover the relationship between 1/2, 2/4, 4/8, and 3/6. Ask: “What do you notice about the fractions that are equivalent to 1/2?”

Some may notice patterns within each fraction. (numerator is always one half of the denominator – denominator designates the number of equal parts the fraction strip has been divided into. The numerator designate the number of parts we are referring to. For the fraction 4/8; the strip has been partitioned into 8 equal parts and four of the 8 parts is equivalent to 1/2.) Tell students that when fraction strips are the same length, they represent equivalent fractions.

Did you find a fraction strip that does not have sections to equal one-half? (fraction strip for thirds

Based on the pattern for 1/2, can you identify other fractions that would be equivalent to 1/2? (examples: 5/10; 6/12; 7/14; 50/100; 500/1000; etc. (infinite number)

What is the relationship between the numerator and the denominator. (Students should notice that the denominators are always double the numerators or the numerator is always one-half of the denominator.) What do you notice about the denominator for fraction that equal 1/2? (denominators are always even)

Thirds can not equal a half. What are other fractions that cannot be divided evenly into halves? Explain your reasoning. What is your proof?

Get to a Whole

Materials: One set of fractions strips for each player
Fraction strips must be cut into equal parts.
Whole strip per player; *halves* into 2 parts and labeled; *fourths* into 3 parts and labeled; *eighths* into 8 equal parts and labeled
Die or spinner 1/2, 1/4, 1/8, 1/8, 1/16, 1/16

Directions:
The winner is the person who covers their whole strip first.

1. Take turns rolling the fraction die.
2. The fraction that comes up on the die or spinner tells what size piece to place on the whole strip.
3. Check with partners to be sure he/she agrees with the fractional part you place on the whole strip.
4. Take turns rolling the die and placing a fractional piece on the whole.
5. If you only need 1/8 and you roll ½, you lose your turn.
6. The first player to cover his or her whole strip exacty wins the game.