

Order Up!

Reporting Category Number and Number Sense

Topic Recognize, name, compare, and order fractions and decimals

Primary SOL 5.2 The student will

- recognize and name fractions in their equivalent decimal form and vice versa; and
- compare and order fractions and decimals in a given set from least to greatest and greatest to least.

Materials

- Decimal Grid Paper (attached)
- 1 x 10 inch paper strips
- Scissors
- Pen or marker

Vocabulary

decimal, fraction, equivalent, least, greatest

Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

1. Using copies of the Decimal Grid Paper, give each student at least seven 1 × 10-inch strips with each strip divided into 10 equal parts. Ask students to examine the grid side of the strip and determine the number of parts in the whole (10). Ask, “If you wanted to name the parts of the strip, what name would you give each part?” The answer is “one-tenth.” Discuss the two ways to represent tenths—fraction and decimal.
2. Have each student fold a strip in half and cut it. Using the blank side of the strip, discuss the fraction name for each part and label each accordingly ($\frac{1}{2}$). Have each student turn the strip over and discuss the decimal name for each part by counting the tenths. (five tenths) Have students label each part (0.5) and set those pieces aside.
3. Have each student fold another strip in half two times and unfold it. Discuss the fraction name for the parts (four parts in the whole, each part is one fourth). Have each student make one cut on the first fold. Ask students what part of the whole the small piece represents ($\frac{1}{4}$) and what part the larger piece represents ($\frac{3}{4}$). Have students label the blank sides of those pieces with the appropriate fraction. Direct students to turn the strip over to examine the grid side. Ask students how many tenths they see when looking at the smaller piece (halfway between two tenths and three tenths). Ask what number is exactly halfway between two and three tenths (.25); use a money connection, if necessary (“What is halfway between two dimes and three dimes?”). Have students label the grid sides of those pieces with a decimal number. Repeat the process with the larger piece (.75).
4. Using other strips, have students make folds to represent eighths, thirds, fifths, and tenths and repeat the labeling process. Each time, have each student cut one unit fraction off of

the whole and leave the rest of the strip intact. Have students label the blank side of each piece with the appropriate fraction and the grid side with a decimal.

5. When six strips have been folded, cut, and labeled, have each student work with a partner to put all 12 of their pieces in order from smallest to largest. One partner should use the fraction side of their pieces, while the other uses the decimal side.
6. Alternating between using fraction and decimal names, call on individual students to form a line at the front of the room holding their strip pieces in order from smallest to largest. (“Will someone bring the smallest piece to the front of the room with the fraction side showing? Will someone else bring the next smallest piece with the decimal side showing and line up right beside the first person?”)

Assessment

- **Questions**
 - Which piece is larger, 0.125 or 0.2? How do you know?
 - Which piece is smaller, 0.875 or $\frac{7}{8}$? How do you know?
- **Journal/Writing Prompts**
 - Explain some ways that we use decimals.
 - Explain some ways that we use fractions.
 - Describe some patterns that you observe using the fraction/decimal strips.
- **Other**
 - Using the pieces that the students cut with the decimal side up, ask them to show where $\frac{5}{6}$ would go.
 - Using the pieces that the students cut with the fraction side up, ask them to show where 0.23 would go.
 - Using an open number line, have students fold and label fractions and decimals.

Extensions and Connections (for all students)

- Have students represent these same fractions and decimals using fraction circles.
- Tape a decimal or fraction to the back of each student. Then have them ask the other students yes or no questions to try to figure out their number.
- Have students look at recipes and convert the fractions used into decimals.
- Have students fold pieces of paper into four parts. Have them write the fraction in one part, write the equivalent decimal in another part, draw a picture of the fraction in the third part, and write a connection to the real world in the fourth part (e.g., $\frac{1}{4}$ can be represented by a coin, the quarter).
- Students can make connections to science by using both decimals and fractions to measure things.

Strategies for Differentiation

- Have students label only the decimals first then go back and label the fractions in another lesson.

Decimal Grid Paper
