Visual Fractions

6669

Introduction

This activity provides students with an opportunity to use a visual model to represent fractions, decimals, and percents.

Grades 6-8

NCTM Number and Operations Standards

- Understand numbers, ways of representing numbers, relationships among numbers, and number systems
- Work flexibly with fractions, decimals, and percents to solve problems

Files/Materials Needed

Fraction.act, Decimal.act, Percent.act

PART 1 VISUALIZING FRACTIONS

1

a. Launch TI-Navigator™ on the computer and start the session.

b. Have each student log into NavNet on their calculator.

2

a. Load the *Fraction.act* activity settings file into Activity Center.

b. Choose any one of the shading options found by clicking **Configure** (the default object is *Shaded Circle*).

c. Start the activity and call out a fraction greater than zero and less than one.

d. Have students use their arrow keys to create a region that represents the fraction you specified.

e. Press SEND when ready.

f. Discuss results with students. You may also choose to click **View** at the bottom of the screen and select either decimal or percent. This will change all numbers accordingly, which will allow you to discuss different representations of the same number.

g. You can also ask students to determine the different number presentations of individual student responses via **Quick Poll**. Then right click on *Response* (located near the top right corner of the Activity Center window) and select fraction, decimal, or percent from the list. Student responses will change accordingly without changing them elsewhere.

PART 2 VISUALIZING DECIMALS

3

a. Load the *Decimal.act* activity settings file into Activity Center.

b. Repeat Steps (c) through (g) in Part I for decimals.
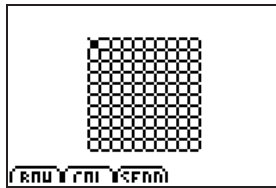
PART 3 VISUALIZING PERCENTS

4

a. Load the *Percent.act* activity settings file into Activity Center.

b. Repeat Steps (c) through (g) in Part I for percents.

PART 4 EXTENSIONS

5

a. By clicking **Configure** and selecting *Divided Rectangle*, you have the option of configuring a grid up to 23 units wide and 12 units high. The screen image below shows a grid that is 10 units by 10 units.

b. Experiment with different grid sizes, asking students to shade a region that represents a given fraction, decimal, or percent.

c. Fractions that are submitted to Activity Center will not be reduced. Use **Quick Poll** to ask students to determine the equivalent simplified fraction.

d. You may also choose a fraction whose denominator is not a factor of the number of squares in the grid. In such cases, students will need to approximate the shading required.

e. This idea behind step (d) can also be extended to decimals and percents.

6

a. By clicking **Configure** and selecting *Divided Circle*, you have the option of configuring a circle with up to 24 sectors. The screen image below shows a circle that contains 14 sectors.
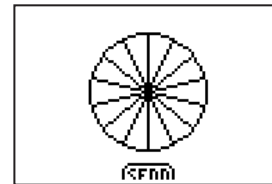
b. Repeat the procedures described in Step 5.