

Names for One-Half

Math Concepts

- integers
- subtraction
- fractions
- multiplication
- decimals
- division
- addition

Materials

- TI-15 Explorer™
- **Names for One-Half** recording sheets
- pencils

Overview

Students will use the calculator and their understanding of integers, fractions, decimals, and operations to find mathematical expressions that equal $\frac{1}{2}$.

Introduction

1. Discuss situations in which being able to express a quantity in several different ways is useful.

Examples:

Two students share a package of six fruit snacks.
Each eats $\frac{3}{6}$ of the package.

A child eats $\frac{1}{4}$ of a granola bar on Monday and $\frac{1}{4}$ of the same granola bar on Tuesday. The child has eaten $\frac{1}{4} + \frac{1}{4}$ of the granola bar in all.

2. Ask students: How many different names can you find for one-half? (See examples on page 22.)
3. Have students work in pairs. Ask them to use a calculator to find and record as many names for one-half as they can.

Collecting and Organizing Data

While students are exploring with their calculators, ask questions such as:

- What operations are you using?
- What operations have you not used? Why? How could you use those operations?
- How could you make an expression with more than one operation?
- What fractions do you think you could use? How would you use them?



Did you use any other special keys? How? What expressions did you record for them?

Names for One-Half *(continued)*

Analyzing Data and Drawing Conclusions

After students have recorded their names for one-half, have them analyze the expressions as a whole group. Ask questions such as:

- How are some of your expressions alike? How are they different?
- If you had to group your expressions, what categories would you use? Why?
- Select one of your categories and see whether you can write more expressions that fit that category.
- Choose one of your expressions and describe a real-life situation in which it might be used.



How did you use the calculator to help you organize your search?

Continuing the Investigation

Have students come up with a class set of categories. Post each category on a wall or chalkboard and have students continue to add expressions.

Examples:

Names for One-Half

Names that are equivalent fractions:

$$\frac{18}{36} \quad \frac{124}{248}$$

Names for One-Half

Names that are decimals:

$$0.5$$

$$2 - 1.5$$

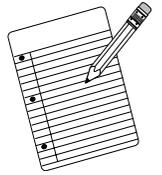
$$0.500$$

Names for One-Half

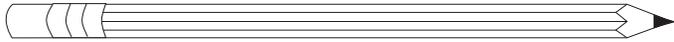
Names that use addition:

$$0.25 + 0.25$$

$$\frac{1}{3} + \frac{1}{6}$$



Name: _____



Names for One-Half Recording Sheet

Collecting and Organizing Data

- One-half = _____

Analyzing Data and Drawing Conclusions

- Group your expressions into two or more categories. Explain your categories.

- Choose three of your expressions and describe a real-life situation in which each one might be used.

Questions we thought of while we were doing this activity: