

Introduction

In this activity, students use the order of operations and number properties to create a unique expression from a set of numbers that must equal another number.

This activity is a TI-Navigator™ version of the Dice Digits activity in the guidebook *Using the TI-73 Explorer™: A Guide for Teachers*.

Grades 6-8

NCTM Number and Operations Standards

- Understand meanings of operations and how they relate to one another
- Use the associative and commutative properties of addition and multiplication and the distributive property of multiplication over addition to simplify computations with integers, fractions, and decimals

Files/Materials Needed

None

1

- Launch TI-Navigator™ on the computer and start the session.
- Have each student log into NavNet on their calculator.

2

- Ask one student to exit out of NavNet so he or she can work on the TI-73 home screen.
- Have this student use the dice function to simulate rolling a single die five times by pressing **MATH** **▸** **▸** **7:dice** **▢**.
- Use **Screen Capture** to display the result.

3

- Tell the class to create an expression using the first four numbers so that it equals the fifth number. For example, if the student rolls 1, 3, 3, 6 and 5, then all the students must arrange the numbers 1, 3, 3, and 6 in such a way that it equals 5. One example is $\frac{6}{1} - \frac{3}{3}$. Other examples are $\frac{6}{3} \cdot 3 - 1$ and $\frac{3}{3} (6 - 1)$.

- Challenge students to come up with an expression they think no one else will come up with. When everyone is ready, use **Quick Poll** (with *Open Response*) to collect their expressions. Make sure that the **Numeric** check box is selected.
- If all students submit a correct expression, the histogram on the Poll Summary window will have only one bar, representing the fifth number. Therefore, you will immediately see if any students were not able to find a solution.
- Now uncheck the **Numeric** check box. This will reveal individual student responses. If needed, have volunteers explain why certain responses are correct.
- Have students identify a variety of number properties. For example, $\frac{3}{3} (6 - 1)$ and $(6 - 1)\frac{3}{3}$ is an example of the Commutative Property of Multiplication.

EXTENSION

4

Have students create a set of five numbers that they think is impossible to solve. Use **Quick Poll** to collect their numbers, and challenge other students disprove their claim.