Exploring Change

5621

Introduction

In this activity, students will explore change in the context of cellular telephone charges.

Grades 6-8

NCTM Algebra Standards

- Analyze change in various contexts
- Use graphs to analyze the nature of changes in quantities in linear relationships

Files/Materials Needed

cellular2.act

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 activity settings file ***cellular2.act***.
b. Click the **List-Graph** tab.
c. Explain to students that they are going to explore a "pay as you go" cellular telephone plan that charges $0.40 for each minute.
d. Assign each student a number from 1 to 20 (minutes). Start the activity and have each student move their cursor so that the *x*-value is equal to the minute they have been assigned. Then have them move so the *y*-value equals the cost for that minute.
e. Stop the activity when everyone is finished. Then click the **Graph-Equation** tab and add y = 0.40x.

3

Use **Quick Poll** (with Open Response) to ask questions such as:

- *What is the change in the cost per minute charge from one minute to the next?*
- *How many dollars does a 15 minute phone call cost?*
- *What is the change in the total cost from one minute to the next?*

The answers are 0, 6, and 0.40 respectively.

4

a. Clear the activity data and explain to students that there is another plan that has a lower rate per minute, $0.30. Tell students that they will use the same number of minutes that they were assigned earlier.
b. Start the activity and have each student move their cursor so that the *x*-value is equal to the minute they have been assigned. Then have them move so the *y*-value equals the total cost for using the phone that many minutes.
c. Stop the activity when everyone is finished. Then click the **Graph-Equation** tab and add y = 0.30x.

5

Use **Quick Poll** (with Open Response) to ask questions such as:

- *What is the change in the total cost from one minute to the next?*
- *The graph of which plan (0.30 or 0.40) is steeper?*

The answers are 0.30, and 0.40 respectively.