Graphical Representations

6693

Introduction

In this activity, students create and analyze graphical representations of a data set.

Grades 6-8

NCTM Data Analysis and Probability Standards

- Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them
- Select, create, and use appropriate graphical representations of data, including histograms, box plots, and scatterplots

Files/Materials Needed

BirthMonth.act, ScatterPlot.act

PART 1 CREATE A LINE PLOT OF STUDENT BIRTH MONTHS

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 **BirthMonth.act** activity settings file into Activity Center. This sets up Activity Center so that students can submit one point.
b. Instruct students to move their cursor to a point where the *x*-coordinate represents their birth month. For example, a student born in June will use an *x*-coordinate of 6.
c. Students should use a *y*-coordinate of 0.5, unless another student already occupies this position. If so, students should move up vertically 1 unit until they reach a spot that is not occupied by another student.
d. Tell students to press **MARK** to mark the point in Activity Center. The collection of student responses in Activity Center will resemble a line plot. Ask a variety of questions related to the line plot to assess student understanding. For example, you can ask students to identify the median and mode.

PART 2 SEND CLASS DATA TO STUDENTS AND CREATE ADDITIONAL GRAPHICAL DISPLAYS

3

a. Stop the activity and change **Contribute** to **Lists**. Configure the calculators to accept **Existing activity lists**.
b. Start this activity. The aggregated student data from Part 1 will be sent to each calculator in L1 and L2.
c. Have students exit NavNet and create a histogram and box plot of the data contained in L1 only. To create the histogram, students will need to select an appropriate interval size and configure their window settings accordingly. Use **Screen Capture** to verify that students have successfully created their graphs.
d. You can also create a histogram directly in Activity Center by clicking the **Frequency Plot** icon. You can adjust the *Style* as well as the axis values and the interval width.
e. Ask students a variety of interpretive questions to assess their understanding of each plot.

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EXTENSION

4

a. Load the ***ScatterPlot.act*** activity settings file into Activity Center. This sets up Activity Center so that students can submit L1 and L2 list values.

b. Configure plots so that X-List is L1 and Y-List is L2. Have students collect two variable data such as arm span versus height or drop height of a ball versus bounce height. Have them submit their data to Activity Center, which will be graphed as a scatterplot.

c. Click the **Zoom Stat** button to reveal the data points students submitted in an appropriate window. Ask students a variety of interpretive questions to assess their understanding of the scatterplot. Include questions about correlation (positive, negative, none), predictions, domain, and range. If the data is linear, challenge the class to determine a line of best fit, which can be sent to Activity Center by changing **Contribute** to **Equations**.