Going...Going...Gone!!

6694

Introduction

This activity gives students an opportunity to select and create the most appropriate graph to represent a given data set.

Grades 6-8

NCTM Data Analysis and Probability Standards

- Select and use appropriate statistical methods to analyze data
- Discuss and understand the correspondence between data sets and their graphical representations, especially histograms, stem-and-leaf plots, box plots, and scatterplots

Files/Materials Needed

Graphical Representations.edc, HomerunL1.73l – HomerunL5.73l, LTYPE.73L, LNMBR.73L

PART 1 IDENTIFY AN APPROPRIATE GRAPH

1

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

2

a. Open the LearningCheck™ file ***Graphical Representations.edc*** on the computer.
b. Drag the window divider so the questions in the right column cannot be seen by the students.
c. Highlight the first question and click *File, Send, Item as Quick Poll*. This will reveal the LearningCheck™ question in the *Poll Prompt* window of **Quick Poll**.
d. Instruct students to choose the description with the best graph type (histogram, circle graph, double box plot, scatter plot).
e. Repeat steps (c) and (d) for the remaining three questions.
f. Tell students that they will use their answers to make graphs representing home run data. The first description (year versus maximum number of homeruns hit by a player) must be graphed as a scatter plot because this data set represents two-variable data. The other descriptions are interchangeable; however, the following choices are recommended:

2 → A (Histogram: a large data set can be grouped in intervals);
3 → C (Box-plot: two plots can be displayed, one for the AL and one for the NL);
4 → B (Circle Graph: categories combine to represent a whole)

PART 2 CREATING GRAPHICAL DISPLAYS

3

a. Force Send lists ***HomerunL1.73l – HomerunL5.73l, LTYPE.73L, LNMBR.73L*** to each student calculator.
b. Instruct students to exit NavNet and create graphical displays of the data descriptions given in Part I.
c. Use **Screen Capture** to review student graphs. Make sure you ask a variety of interpretive questions based on each graph. For example, you could ask students which league was better at hitting home runs in 2004 (box-plot graphs of L4 and L5).
d. A description of each list is as follows:
- *Ll (years from 1980 – 2004)*
- *L2 (most homeruns hit by a single player for the years given in L1)*
- *L3 (total number of career home runs hit by the top 100 home run hitters)*
- *L4 (number of home runs hit in 2004 by top 25 home run hitters for the American League)*
- *L5 (number of home runs hit in 2004 by top 25 home run hitters for the National League)*

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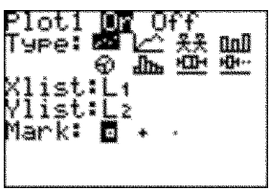
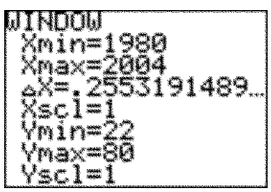
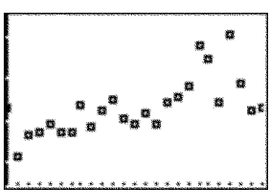
- *TYPE (each hit type: 1 = single,2 = double, 3 = triple, 4 = home run)*
- *NMBR (the total number of each type of hit during the 2004 MLB season)*

e. The graphical displays that students will make are as follows:

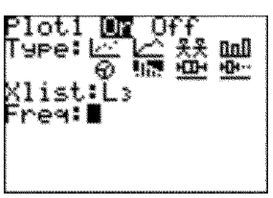
Scatter Plot of L1 versus L2

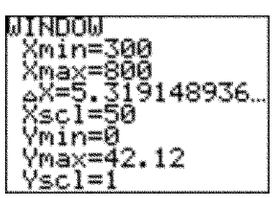


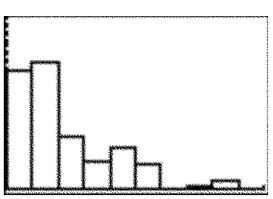




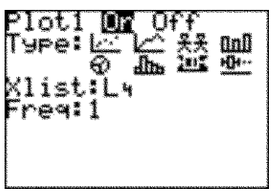
Histogram of L3 (with data grouped in intervals of 50, starting with 300 and ending with 800)

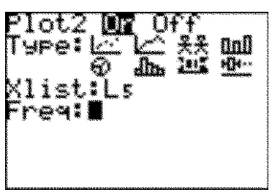


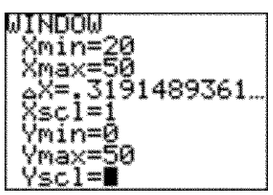


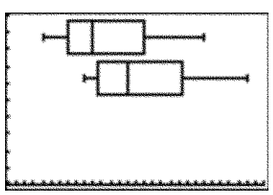


Two box-plots (L4 and L5) displayed simultaneously









Circle graph of TYPE and NMBR