

How Far to Your Birthplace

Collecting and Analyzing One-Variable Data

Abstract: Continues one-variable data analysis through the creation and exploration of a birth place data set. Graphing calculators are used to analyze the data through mean, median, mode, maximum, minimum, stem-and-leaf plots and box-and-whisker plots.

Mathematical Concepts Explored	Technology Used/Materials needed	Commands/Functions Utilized
Scale Mean, Median, Mode, Box and Whisker Plot	Graphing calculator, Teacher's edition with overhead panel, Large map of the US, large state map, measuring tapes, globes, 2 ropes, 3 meter sticks	Lists, Stat Plot, Trace, Graph, Window, Statistical functions

California Mathematics Content Standards addressed by this Activity

5th grade

- Algebra 1.1-Information from graph
- Statistics and Data Analysis 1.1, 1.4-Mean, median and mode

6th grade

- Statistics and Data Analysis 1.1- Mean, median and mode

7th grade

- Statistics and Data Analysis 1.0-1.2-Collect, organize, represent data of one or more variable

Algebra I

- Standard 17.0-Range of data

Preceding Activity

Students would have to have some knowledge of using scale to determine distance on a map. Preceding activities would include a discussion on how to organize data.

Activity Agenda, Teacher Notes and Points for Discussion

Teacher will..	Student will..
1. Provide measuring tapes, map of the US, map of California, several globes	Locate their birthplace, calculate the distance from school to their birthplace (choose miles or kilometers - whichever is appropriate for your class) Record data on group work sheet
2. Ask one group member to record group data items into L1 of teacher's graphing calculator	Put in data from group into graphing calculator
3. When all groups have entered data in calculator attached to LCD panel, have students clear their list memory. Encourage each student to receive the data then send the data to someone else in their group.	One student from each group will download data from teacher calculator to their calculator and send that information to other group member's calculators.
4. Show students how to use the calculator functions of minimum, maximum, mean and median of the data.	Find minimum, maximum, mean and median of the class' data.
5. Show how to make box and whisker plot. Before graphing, check <Y=> to make sure there are no equations entered - you only want to graph what is in the list. (see worksheets)	Make a box-and-whisker plot.
6. Form a human box-and-whisker plot. Using <Trace> identify lower extreme data then have that student stand with the end of one rope. Continue process with lower quartile other end of rope and meter stick on the floor perpendicular to the rope, median, upper quartile and upper extreme. When the boundaries have been identified, students will place themselves in their respective quartiles (a picture of the group would be nice!)	Participate in the human box-and-whisker plot.

Follow-Up Activity(ies)

Additional assignments could be to collect data and make other representations for the data.

Possible Extensions/Changes to this Activity

The teacher could use TI -Navigator to collect data from students and send it back to the class.