

# Mean and Median

MA.6.S.6.1  
MA.E.1.3.2

This applet allows the user to investigate the mean, median, and box-and-whisker plot for a set of data that they create. The data set may contain up to 15 integers, each with a value from 0 to 100.

## Instructions

When initially opened, only the top number line is active. Create a data set by dragging points onto the number line. The mean and median appear if there is at least one data point; the box-and-whisker plot will appear if there are five or more data points. Both of these displays can be turned off by unchecking the respective boxes.

Data points can also be created or modified by entering numbers in the text boxes below the number line. The **apply** button must be used to activate any changes. If the data points are out of order, the **sort** button can be used to order them from least to greatest. The **clear** button can be used to remove all data points.

Up to three number lines can be made active with the **activate** feature. The data points from one number line can be transferred to an adjacent number line using the **copy** function. At any time, a data set can be hidden with the **deactivate** feature.

## Exploration

Can you create three data sets, all of which have 6 data points, a mean of 50, a median of 50, and meet the following criteria?

- Set A: Every data point is between 35 and 65.
- Set B: Every data point is either less than 25 or greater than 75.
- Set C: The difference between every pair of two consecutive data points is the same.

How are these sets different from one another? How are they alike? Are there other data sets with 6 points, a mean of 50, and a median of 50 that look different from the three you've created?

