

Box-and-Whisker Plots

Reporting category

Probability and Statistics

Overview

Following a brief discussion of the term median, the vocabulary listed below, and box-and whisker plots, students gather data from the whole class. A human box-and-whisker plot is constructed from the data. Small groups work together to compare two box-and-whisker plots.

Related Standard of Learning

6.18

Objectives

- The student will organize and display data in box-and-whisker plots, identifying the lower extreme (minimum), lower quartile, median, upper quartile, and upper extreme (maximum).
- The student will use the critical points in a box-and-whisker plot to determine the range and the interquartile range.

Prerequisite Understandings/Knowledge/Skills

- Students must understand the concept of averages.
- Students must understand the concept of quarters.

Materials needed

- Large picture of a cat or tiger (optional)
- Transparency of the “Vocabulary” worksheet
- Overhead marking pens
- One 3-by-5 card for each student
- Thick craft yarn
- Scissors
- Six signs with the following labels: “median,” “lower extreme,” “upper extreme,” “lower quartile,” “upper quartile,” and “interquartile range” and with string attached to hang around the necks of students
- Line on the ground (e.g., tape on the floor, chalk on concrete, or line in the tile)
- Polaroid camera or video camera (optional)
- Blank transparency
- A copy of the “Assessing Box-and-Whisker Plots” worksheet for each student

Instructional activity

1. Background Information: A box-and-whisker plot is a type of graph used to represent data. It is most appropriate when you want to show the median, first and third quartiles, and least and greatest of a set of data. The “box” is like a cat’s face, and the “whiskers” are formed by the data that extends out from the box.
2. Review the vocabulary for this topic, using the vocabulary transparency and writing in the definitions. If you have a picture of a cat or tiger, briefly show how the face forms a box with the whiskers coming out the side.