

Tips for Helping at Home

- Questions to ask:

What is it that you don't understand (have the student be specific)?

What about putting things in order?

Could you try it with simpler numbers?

Can you guess and check?

Does this make sense?

What can you do to explain your answer to show others what you are thinking?

Does your answer seem reasonable?

- It can be easy for you to become involved in this unit, because your child may ask you questions as part of his/her data collection activities. Give your full attention to these questions and help your child record your answers, as they will be the basis for work in the class.

- You will find that there are many opportunities to collect data around your home. Which color or make of car is the most common on your street? Why might that be? Do more households in your neighborhood have a dog or a cat? After a while, collecting and thinking about data may become a habit that you and your child share.

Mathematical Emphasis

Investigation 1—Introduction to Data Analysis

- Making quick sketches of the data to use as working tools during the analysis process
- Describing the shape of the data, moving from noticing individual features of the data to describing the overall shape of the distribution
- Defining the way data will be collected
- Summarizing what is typical of a set of data

Investigation 2—Landmarks in the Data

- Inventing ways to compare and represent two sets of data by describing the shape of the data and what's typical of the data
- Finding the median in a set of data arranged in numerical order
- Finding the median in a set of data grouped by frequency
- Using the median to describe a set of data and to compare one data set to another

Websites

<http://cms.everett.k12.wa.us/math>

<http://www.hazelwood.k12.mo.us/~cdavis01/map2000/4th/math18.ppt>



Grade 4

The Shape of Data

Statistics



Everett Public Schools

Vocabulary

Axis: one of the reference lines on a coordinate graph

X-axis: the horizontal axis on a coordinate grid

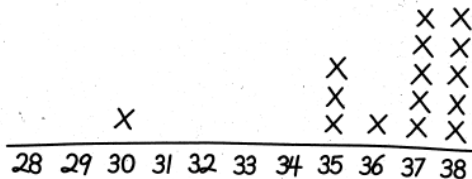
Y-axis: the vertical axis on a coordinate grid

Median: a way to average counts or measures when there are extremes in the data. The middle point of the ordered group is found.

Mode: a way to average data when there are many identical data points. The mode is the data that appears the most often.

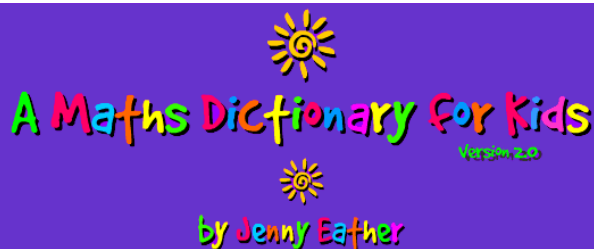
Data: information

Line plot: A line plot consists of a horizontal number line, on which each value of a set is denoted by an x over the corresponding value on the number line. The number of x's above each score indicates how many times each score occurred.



Glossary

<http://www.amathsdictionaryforkids.com/>



Representing the Data

99 and Out

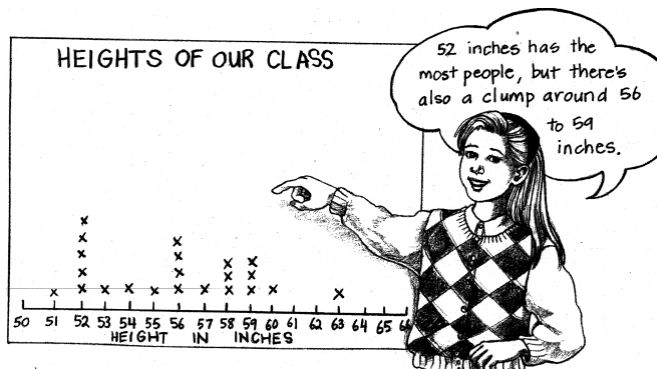
In this book, students will be working on gathering, organizing, and representing data about a variety of subjects. During this process, they will be developing skills in creating and using two main types of graphs: sketch graphs and presentation graphs.

Sketch graphs are a type of graph students make and use just to help uncover the story of the data.

This type of working graph need not be shown to anyone else. Sketch graphs do not require neatness, careful measurement or scaling, use of clear titles or labels, or decorative work.



Presentation graphs are meant to be seen by an audience. Their purpose is to be present an organized, clear, and accessible display of the data.



Russell, S. *Investigations in Number, Data and Space: The Shape of Data*. Dale Seymour, 1998.

Materials

- 2 number cubes (1-6) or spinners
- Scratch paper and pencil for each player

Directions

1. The first player rolls the two number cubes to form a two-digit number and subtracts this number from 99. For example, if the player rolled a 2 and a 4, he would make a 24 and subtract 24 from 99. The player records the difference.
2. Each other player, in turn, rolls the number cubes, forms a new two-digit number, and subtracts it from 99.
3. For the second turn, each player rolls the number cubes, forms a new two-digit number, and subtracts it from the existing difference.
4. For succeeding turns, players decide if they want to subtract a 2-digit or one-digit number and then roll the appropriate quantity of number cubes.
5. Players continue rolling and subtracting until a player reaches zero or close to it. Players who roll a number higher than the remaining difference automatically lose that round.
6. The player with the lowest difference wins.