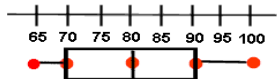
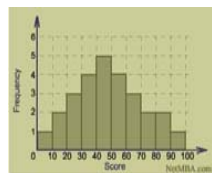


## Samples and Populations Glossary

**Box-and-Whisker Plot**– displays the median, the quartiles, and outliers of a set of data, but does not display any other specific values



**Histogram** – A graph in which the labels for the bars are numerical intervals.



**Population** – A group of people (or objects or events) that fits a particular description

**Random Sample** – A sample in which every person, object, or event in the population has an equal chance of being selected for the sample

**Sample** – A number of people, objects, or events chosen from a given population to represent the entire group

**Stem-and-Leaf Plot** – Method of organizing data from least to greatest using the digits of the greatest place value to group data.

## Web Resources

More statistical lessons can be found at:

[www.illuminations.nctm.org](http://www.illuminations.nctm.org)



## Connected Mathematics Project

### Everett Public Schools Mathematics Program

## Samples and Populations

### Statistics

### Unit Goals:

- ◆ Use the process of statistical investigation to explore problem
- ◆ Describe the shape of data in a graph
- ◆ Distinguish between a sample and a population

Proposed Time Frame:  
Approximately 6 weeks

## Mathematics in Investigations



### Tips for Helping at Home

Good questions and good listening will help children make sense of mathematics and build self-confidence. A good question opens up a problem and supports different ways of thinking about it. Here are some questions you might try, notice that none of them can be answered with a simple “yes” or “no”.

#### Getting Started

- \* What do you need to find out?
- \* What do you need to know?
- \* What terms do you understand or not understand?

#### While Working

- \* How can you organize the information?
- \* Do you see any patterns or relationships that will help solve this?
- \* What would happen if...?

#### Reflecting about the Solution

- \* How do you know your answer is reasonable?
- \* Has the question been answered?
- \* Can you explain it another way?

### Investigation 1: Comparing Data Sets

- \* Engage in the process of statistical investigation
- \* Compare data using tables, stem-and-leaf plots, histograms, and box-and-whisker plots
- \* Compare data using measures of center (mean and median) and measures of spread (range)

### Investigation 2: Conducting Surveys

- \* Distinguish between sample and population
- \* Consider various ways of developing a sampling plan
- \* Use data from a sample to make predictions about a population
- \* Design a survey, focusing on how questions are asked

### Investigation 3: Random Samples

- \* Select a random sample from a population
- \* Use sampling distributions, measures of center, and measures of spread to describe and compare samples
- \* Use data from samples to estimate a characteristic of a population

### Investigation 4: Solving Real World Problems

- \* Use data from samples to estimate a characteristic found in a population
- \* Use characteristics from a population to describe a sample
- \* Apply elementary probability in choosing random samples of data

### At Home:

- 1 Talk with your child about what’s going on in mathematics class.
- 2 Look for ways to link mathematical learning to daily activities. Encourage your child to figure out the amounts for halving a recipe, estimating gas mileage, or figuring a restaurant tip.
- 3 Encourage your child to schedule a regular time for homework and provide a comfortable place for their study, free from distractions.
- 4 Monitor your child’s homework on a regular basis by looking at one problem or asking your child to briefly describe the focus of the homework. When your child asks for help, work with them instead of doing the problem for them.

### At School

- 1 Attend Open House, Back to School Night, and after school events.
- 2 Join the parent-teacher organization

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