

Name \_\_\_\_\_



## Olympic Line Graphs

### Background Information:

#### Why we use line graphs in science:

Line graphs compare two variables. Many times, one of the variables shown on a line graph is time.

Each variable is plotted along an axis.

A line graph has a vertical axis, called the Y-axis and a horizontal axis, called the X-axis.

Line graphs show **trends** in data, this means that they show how one variable is affected by the other as the variable increases or decreases.

Line graphs are a way to show how two pieces of information are **related** (the **relationship** between the variables) and how they change depending on one another.

The scale of the graph is very important. The same data can be plotted on different scales and not look like the same data at all.

#### To make a line graph:

- The independent variable is plotted on the X-axis. When you are comparing something over time, time is the independent variable.
- The dependent variable is plotted on the Y-axis.
- Decide on an appropriate scale for each axis
- Label each axis
  - Put the independent variable / time on the X-axis
  - Put the dependent variable and the unit of measurement on the Y-axis
- Plot your points
- Draw your line
- Title your graph with a descriptive title (ex. The relationship between ...)

### What to do:

1. Pick one of the sports or events in the summer Olympic Games.
2. Use one of the following websites to find historical data about your sport or event.
  - a. <http://www.ex.ac.uk/cimt/data/olympics/olymindx.htm>
  - b. <http://www.hickoksports.com/history/olympix.shtml>
  - c. [http://abc.net.au/olympics\\_1996/sportspg.htm](http://abc.net.au/olympics_1996/sportspg.htm)
  - d. <http://www.factmonster.com/00olympics3.html>

3. Collect data about the winning score (times, distance, speed... ) in a table:

Year	Score

4. Plot your data on a line graph.
- Put the year on the X-axis.
  - Put the time, distance, speed (whatever was measured in your event) on the Y-axis.
5. Label both of the axes.
6. Give your graph a title that describes the relationship between the variables.
7. Analyze your data.
- What is the independent variable? \_\_\_\_\_
  - The dependent variable? \_\_\_\_\_
  - What is the relationship between the two variables?
  
  - What trends did you notice?
  
  - Were there any years that didn't fit the overall pattern?
  
  - Hypothesize about the pattern you found. Why do you think it happened?

Title \_\_\_\_\_

