

# The Scientific Method

This paper outlines how the Scientific Method will be used in designing and performing experiments throughout the year.

**I. Purpose:** -It is a general statement that describes why you are doing the experiment.  
-Example) Purpose: To study what effects plant growth.

**II. Hypothesis:** -An educated scientific assumption that will be tested.  
-A specific statement describing what you believe the outcome of the experiment will be.  
-Don't start your hypothesis with "I think...", "We think...", "I believe..."  
-Example) Hypothesis: Plants will die without sunlight.

**III. Procedure:** -This shows how the experiment will be done.  
-It Includes:  
**A. Materials:** A list of all materials used in the experiment  
**B. Instructions:** A step-by-step list of activities that will be performed in the experiment.

**IV. Experiment:** -In this part you actually perform the experiment, record results, and analyze data.  
- Activities that can be done during the experiment include:

1. Testing	5. Making Tables
2. Observing	6. Making Graphs
3. Recording Results	7. Answering questions
4. Analyzing results and data	8. Drawing diagrams or pictures

**V. Conclusion:** -The Conclusion is very important!  
- It is a summary of your entire experiment in paragraph form.  
-The questions you need to answer are:

Paragraph 1

- What did you do during the experiment, and how did you do it? (3-4 sentences)
- What are your general results of the experiment? (2-3 sentences)
- Was your hypothesis correct or not? **Explain** (1-2 sentences)

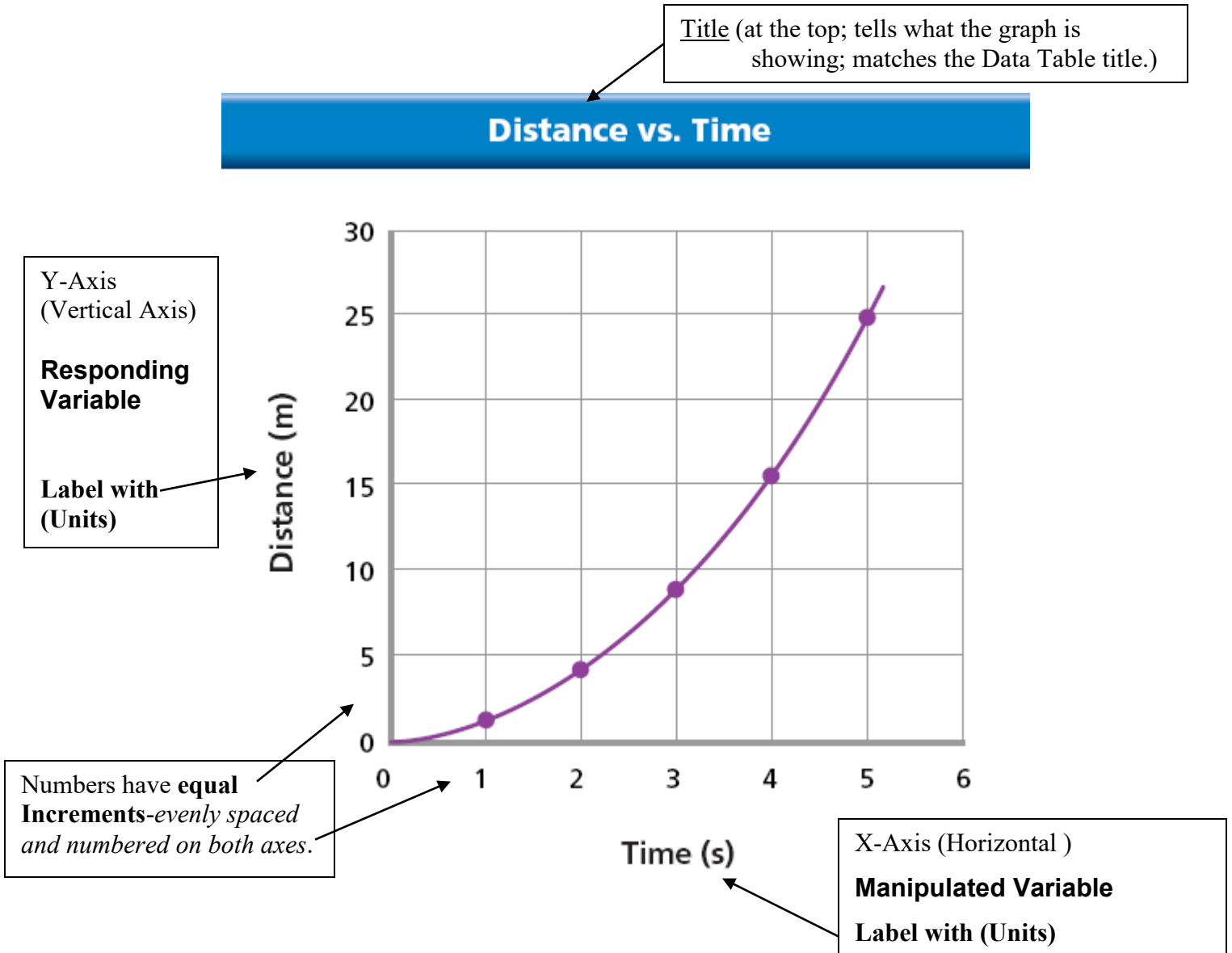
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Paragraph 2

- What problems did you have? (2-3 sentences)
  - **What unavoidable experimental errors were there and what specific results did they affect? (2-3 sentences)**
  - What did you learn? (2-3 sentences)
- Conclusions should be a minimum of 2 full paragraphs long.  
**12-15 full sentences** for full credit.

# Important Rules for Graphing

It is important to draw graphs carefully and correctly. They display results of your experiment in a concise, easy to read format. The diagram below shows the important things to do and include when graphing.



## When Graphing:

1. Always be **neat**.
2. Always use a straight edge (*ruler*).
3. Always be **complete** [*Title and Label both axes with(units)*].
4. Be as **accurate** as possible.
5. Use an **appropriate number system** on the axes.
6. Use color for bar graphs and if graphing more than one line on a line graph.
7. Use a **whole page** for each graph.