



The Scientific Method: An Example

1. Identify a Problem/Question

I want to study botany. I want to find out what things affect the growth of plants. My question is “What effect will prolonged periods of rock music have on the growth of plants?”

2. Collect Information

I collected information by talking to my neighbor who is a gardener, reading 3 books on plants, visiting a nursery and reading 2 pamphlets that I got from the Farm Bureau.

3. Develop a Hypothesis

I think that when I expose some plants to rock music they will grow less than similar plants that are not exposed to rock music.

4. Conduct the Experiment

Materials: bean seeds, potting soil, flower pots, radio

Procedure: Using 10 flowerpots, I planted 2 bean seeds in each one. I put 5 pots on a window sill away from the radio. I put 5 pots with on a window sill where they got the same amount of light as the first group but were close to the radio. I exposed the second set of pots to rock music for 2 hours a day. I made sure all plants got the same amount of light and water.

5. Observations

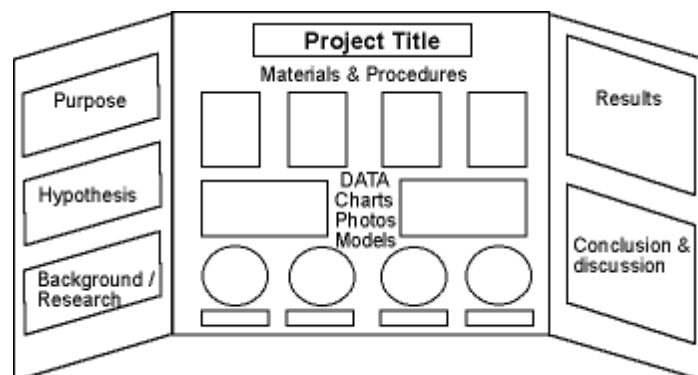
I kept a daily journal recording the changes in each pot. I also drew diagrams of the plants and took photographs to help record all growth. Then I used the computer to create a graph of the information.

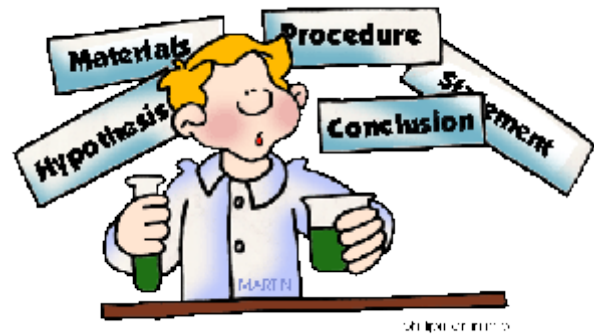
6. Results

There was no difference between the plants that were exposed to rock music and the ones that were not.

7. Conclusion

Music is not one of the variables that effects plant growth. This means that when you place your plants in your house, you don't have to worry about whether they are close to the stereo. You can also put plants in teenagers' rooms. Next time I would like to see how light effects plant growth.





What is the Scientific Method?

It is a process that is used to find answers to questions about the world around us.

Is there only one “scientific method”?

No, there are several versions. Some have more steps, while others may have only a few. However, they all begin with the identification of a problem or a question to be answered based on observations of the world around us and provides an organized method for conducting and analyzing an experiment.

Steps of the Scientific Method

1. Choose a problem

State the problem as a question. The question should be specific.

2. Research and collect information

Read, get advice, make observations

3. Develop a hypothesis

Make a prediction (an educated guess) about what will happen.

4. Design and conduct the experiment.

List your materials and describe the procedure followed.

5. Observations/Recording data

Gather and record the information. This can be through daily journals, diagrams, photographs, charts, graphs.

6. Results

Tell exactly what happened.

7. Conclusions

Analyze your data and summarize your findings. Compare the results to your hypothesis. Why do you think you got the results? What would you like to further investigate next time?