Designing an Experiment

Besides air and water, there are other physical features of the environment that can affect decomposition and how quickly it occurs. In your group, list some of the things you think are likely to affect decomposition, and then choose one of these ideas to test in a scientific experiment.

You can design a good experiment using carrots as the material to be decomposed, and burying them in dirt that has been put into a zipper-type plastic bag. Every 3 - 4 days you can remove the carrot and find its mass. As the carrot is decomposed, it will get smaller and therefore have less mass. You can compare carrots in two different conditions by seeing how their masses change over time.

The following suggestions will be helpful as you design your experiment:

1. Use a chunk of carrot that is about 2 cm wide and about 3-4 cm long.
2. Put only one carrot chunk in each bag of soil.
3. Be sure to weigh the carrot chunks at the start of the experiment.
4. Put equal volumes of soil in all the bags. (Why is this important?)

Prepare a written proposal describing your experiment before you begin setting it up. Your group's proposal needs to answer these questions:

1. What is the question you are asking?
2. How will you try to answer it?
3. How many trials will you do?
4. How will you record your data?
5. How will you report your results quantitatively?
6. What will be your controls?
7. What is your hypothesis?