APPENDIX L Planning an Investigation

Many of the PLT activities in this guide invite students to plan an investigation to learn about a particular organism, ecosystem, or phenomenon. In doing so, students gain skill in an important scientific practice that enables scientists, engineers, and others to investigate and observe the world.

The activities use two main types of scientific investigation:

- Observational investigations involve describing and quantifying parts of a natural system, or collecting data to compare different populations or conditions.
- Experimental investigations involve designing and carrying out a "fair test," in which variables are manipulated and compared against a control to determine cause-and-effect relationships.

To help students plan their investigations, you may use the following Planning an Investigation student page, which lays out the general steps involved. It may be used for both observational and experimental investigations.

Planning an Investigation STUDENT PAGE

NAME _____ DATE _____

Use this worksheet to help guide your investigation.

Asking Questions

1 What question are you trying to answer?	2 What do you think you will learn?	3 Why do you think so?

Planning and Carrying Out the Investigation

4 How will you investigate your question?	5 What will you observe and measure?

6 If your investigation is an experiment, what will you control (keep the same)? What one thing will you change (variable)?

7 What materials and equipment will you need?	8 How will you record your results?

NAME _____ DATE _____

Analyzing and Interpreting Data

9 What are your results?

10 What do your results show you?

11 How do your results compare with those of other students?

Constructing Explanations

12 What explanation can you give for your results?

13 What evidence supports your explanation?

Communicating Information

14 Who else would be interested in your results? How might you tell them about your investigation?