Name: _____ Date: _____

Chapter 1 The Scientific Method—Research

Before carrying out any experiment, a scientist finds out what is already known about the topic being investigated. A good starting point is to identify the key words in the purpose. Next, look up each key word in an encyclopedia, dictionary, or textbook. Then, expand the research to the Internet.

Example: Does fertilizer affect the growth rate of a sunflower?

The goal of the search is to find information that will help in forming a prediction about what will occur in the experiment. Scientists use questions to direct their investigations.

Fertilizer

Why *do we need fertilizers?*
How *do fertilizers affect plant growth?*
Who *invented fertilizer?*
What *are the ingredients in fertilizers that affect plant growth?*
When *do plants need fertilizer?*
Where *should fertilizer be applied to the plant to get the best results?*

Sunflowers

Why *does soil type affect plant growth?*
How *do minerals and nutrients affect plant growth?*
Who *would be a good resource in my community to contact about plants?*
What *are the elements required for plant growth?*
When *does photosynthesis affect plant growth?*
Where *in the plant does photosynthesis occur?*

Test Yourself

I. Underline the key words for each purpose below.
   1. Does the depth a seed is planted affect its ability to sprout?
   2. Does eating breakfast affect short-term memory?

II. Write questions to direct the research for the purpose: Does temperature affect the strength of a magnet?

Temperature	Magnet
1. Why	1. Why
2. How	2. How
3. Who	3. Who
4. What	4. What
5. When	5. When
6. Where	6. Where