



Nature of Science

Name \_\_\_\_\_

## Asking & Answering Questions



**Purpose:** To practice writing research questions.

**Background Information:** Scientists ask questions and then try to answer those questions using scientific methods. Different kinds of questions need different kinds of scientific investigations. Some investigations involve observing and describing objects, organisms, or events; some involve collecting specimens; some involve researching more information; some involve doing a fair test or experimenting; some involve discovery of new objects and phenomena; and some involve making models.

When a scientific investigation is used to try to answer a question, the question is called a **RESEARCH QUESTION**.

We can divide investigations into two general categories: **DESCRIPTIVE** or **QUALITATIVE** and **EXPERIMENTAL**.

***Descriptive or qualitative*** investigations include building models, inventing, dissecting, making observations and describing them, interviewing, collecting specimens among others. Although these are sometimes called experiments, they are not really experimental.

***Experimental*** investigations involve the control or manipulation of **variables**. Variables are the parts of the experiment that can change, or vary.

**Effect** and **affect** are good words to use when writing a research question. Effect is a noun; it refers to the outcome or result of an investigation. Affect is a verb; it means to influence or act upon something.

*Examples:* What is the effect of different types of fertilizer on the growth of plants?

How do different types of fertilizer affect the growth of plants?

Magic Grow ® toys are soft, expanding foam in a gelatin capsule. When the capsule is soaked in water, the gelatin dissolves and the toys change shape and grow.

Observe the Magic Grow ® capsule. What kinds of questions can you ask about it?

Write 3 possible questions using effect or affect.

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2. \_\_\_\_\_  
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3. \_\_\_\_\_  
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