Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

***Scientific Inquiry***

1. Understanding Science

**1.** The investigation and exploration of natural events and the new information that results from those investigations is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**2.** Marie Curie was a scientist who won two Nobel prizes in the early 1900s for her work with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**B.** Branches of Science

**1.** The study of matter and energy is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**2.** The study of natural processes that occur on and deep within \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_is called Earth science.

**3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** is the study of all organisms and the many processes that occur in them.

**C.** What is Scientific Inquiry?

**1.** When scientists want to answer questions about the natural world, they

Conduct \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** is a series of skills used to answer questions.

**3.** Using one or more of your senses to gather information and taking note of what occurs is called making \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

**4.** A logical explanation of an observation that is drawn from prior knowledge or experience is called a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

**5.** A hypothesis is a possible explanation for an observation that can be tested by scientific \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

**6.** A statement about what will happen next in a sequence of events is called a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

**7.** Testing a hypothesis includes: design a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , make a model, gather and evaluate evidence, and collect data/record observations.

**8.** Three ways to analyze \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_are: graph results, classify information, and make calculations.

**9.** To communicate their results, scientists might write scientific

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ articles, speak at science conferences, or exchange information on the Internet.

**Lesson Outline LESSON 1**

**8** Scientific Problem Solving

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Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class\_\_\_\_\_\_\_\_\_\_\_\_

**D.** Scientific Theory

**1.** An explanation of observations or events based on knowledge gained from many observations and investigations is called a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

**2.** The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ theory, which explains the behavior and energy of particles that make up a gas, is an example of a scientific theory.

**E.** Scientific Law

**1.** A rule that describes a repeatable pattern in nature is called a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

**2.** A scientific law only states that a pattern will happen; it does not explain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or how the pattern happens.

**F.** Results of Scientific Inquiry

**1.** The practical use of scientific knowledge, especially for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or commercial use, is called technology.

**2.** Scientific investigations can lead to the discovery of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or events such as colliding galaxies.

**3.** Scientific investigations are often launched to answer who, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , when, where, or how questions.

**G.** Evaluating Scientific Information

**1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** information is information that is incorrectly represented as being scientific.

**2.** Comparing what you already know with the information you are given, in order to decide whether you agree with it, is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

**H.** Science cannot answer all questions.

**1.** Science cannot answer questions that deal with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , values, personal opinions, and feelings.

**2.** Science cannot answer some questions because it is impossible to objectively collect \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ about these topics.

1. Safety in Science

**1.** You should always wear \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ equipment when you begin scientific inquiry.

**2.** To be safe while doing science, you should learn the meaning of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ symbols.

**Lesson Outline continued**