Name Date Class

Note-taking Worksheet

The Nature of Science

Section 1 The Methods of Science

A. _____ studies natural patterns.

1. Science is classified into three main categories: _____ science, _____ science, and _____ science; sometimes a scientific study will overlap the categories.

2. Science explains the natural world; explanations can _____ over time.

3. Scientists _____ nature by observation, experimentation, or modeling.

B. _____—organized set of investigation procedures

1. _____ a problem.

2. _____ information.

3. Form a _____ or educated guess based on knowledge and observation.

4. An **experiment** with **variables** is a common way to _____ a hypothesis.

a. A _____ **variable** changes value as other variables change.

b. An _____ **variable** is changed to determine how it will affect the dependent variable.

c. A variable that does not change when other variables change is a _____.

d. A _____ is the standard to which test results can be compared.

5. _____ data from an experiment or investigation.

6. Form a _____ based on the data.

7. Reduce _____ by keeping accurate records, using measurable data, and repeating the experiment.

C. _____ represent ideas, events, or objects and can be physical or computerized.

D. A _____ is an explanation based on many observations and investigations; a _____ is a statement about something that always seems to be true.

E. Science deals with the _____ world; questions of value or emotion cannot be answered.

Meeting Individual Needs

Note-taking Worksheet (continued)

F. _____—applied science helping people

Section 2 Standards of Measurement

A. _____—exact quantity that people agree to use for comparison

B. Measurements must have a number and a _____.

1. _____—an improved version of the metric system used and understood by scientists worldwide
2. SI system is based on _____ and uses prefixes to indicate a specific multiple.

C. _____ is measured using a unit appropriate for the distance between two points.

D. _____—the amount of space an object occupies

E. _____—measure of matter in an object

1. _____—mass per unit volume of a material
2. A unit obtained by combining different SI units is called a _____.

F. _____is the interval between two events; _____ is measured using a thermometer.

Section 3 Communicating with Graphs

A. _____—visual display of information or data that is used to detect patterns

B. A _____ graph shows a relationship where the dependent variable changes due to a change in the independent variable.

1. The _____ should make the graph readable.
2. The *x*-axis should _____ be used for the independent variable.
3. Units of measurement must be _____.

C. _____ graphs compare information collected by counting.