

**Note-taking
Worksheet****Exploring and Classifying Life****Section 1 What is science?**

- A. Science—an organized way of studying things and finding _____
- B. Critical thinking—a process that uses certain skills to _____
- C. _____—an organized way to solve a problem using a series of steps
1. State the _____.
 2. Gather _____.
 3. Form a _____, or a prediction that can be tested.
 4. Test the hypothesis with _____.
 - a. _____ is something in an experiment that can change.
 - b. _____ is the standard of comparison in an experiment; cannot change
 5. Analyze _____.
 6. Draw _____.
- D. Theories and laws
1. Scientific _____—an explanation of things or events based on scientific knowledge; the result of many observations and experiments
 2. Scientific _____—a statement about how things work in nature
- E. International System of Units (SI)—Standard system of _____ used by scientists

Section 2 Living Things

- A. How are living things, or _____, alike?
1. Living things are _____.
 - a. _____—the smallest unit of an organism that carries on the functions of life
 - b. Each _____ has an orderly structure and contains hereditary material.
 2. Living things _____.
 - a. _____—anything that causes some change in an organism
 - b. Response—the way an organism reacts to a stimulus, often results in _____
 - c. _____—maintaining the proper conditions inside an organism

3. Living things take in and use _____.
4. Living things grow and _____.
- Growth of many-celled organisms is due to an increase in _____.
 - Growth of one-celled organisms is due to an increase in _____.
 - _____—changes that take place during the life of an organism
5. Living things _____.

B. What do living things need?

- A _____ that provides for all of the organism's needs
- _____, like water, proteins, fats, and sugars

Section 3 Where does life come from?

- A. _____—early theory that living things could come from nonliving things; disproved by Louis Pasteur in the mid-1800s
- B. _____—theory that living things can come only from other living things
- C. Alexander I. Oparin's hypothesis on the origins of life—gases in Earth's early atmosphere combined to form _____ found in living things.
- gases:
 - _____
 - _____
 - _____
 - _____
 - Stanley L. Miller and Harold Urey tested Oparin's hypothesis and showed that chemicals found in _____ could be produced.

Section 4 How are living things classified?

A. Classification systems

- _____ classified organisms more than 2,000 years ago.
- Carolus Linnaeus introduced a system based on _____ of organisms.
- Modern systems based on **phylogeny**—the _____ of an organism

Note-taking Worksheet (continued)

4. Today's classification system separates organisms into 6 _____.
 - a. Kingdoms are the first and _____ category.
 - b. The smallest classification category is a _____.
 - c. Organisms that belong to the same species can mate and produce _____.
- B. _____—two-word system used by Linnaeus to name species
 1. First word identifies the _____, or group of similar species.
 2. Second word tells something about the species—what it looks like, where it is found, or _____.
 3. Why use scientific names?
 - a. To _____
 - b. To show that organisms in the same genus are _____
 - c. To give _____
 - d. To allow information to be _____ easily
- C. Tools for identifying organisms
 1. _____—descriptions and illustrations of organisms
 2. Dichotomous keys—detailed _____ of identifying characteristics that include scientific names

Chapter Review

Exploring and Classifying Life

Part A. Vocabulary Review

Directions: *Unscramble the letters to form the correct word for each definition.*

- | | | |
|-------|---------------------------|--|
| _____ | 1. smirsogna | —living things |
| _____ | 2. clesl | —smallest units carrying on life functions |
| _____ | 3. nobimali nmclaoenture | —naming system developed by Linnaeus |
| _____ | 4. gomnikd | —the first and largest category in the classification used today |
| _____ | 5. wal | —a statement about how things work in nature |
| _____ | 6. shamestoiso | —ability to maintain a steady condition |
| _____ | 7. ynyhpolge | —history of how an organism has changed over time |
| _____ | 8. snuge | —groups of similar species |
| _____ | 9. stenopausno reonigtean | —the idea that living things come from nonliving things |
| _____ | 10. snibgiesoe | —idea that living things come only from other living things |
| _____ | 11. ceitsniicf demstoh | —organized steps to solve a problem |
| _____ | 12. spetysohih | —prediction that can be tested |
| _____ | 13. bavelria | —what is being tested in an experiment |
| _____ | 14. lortnoc | —standard used to compare the test materials |
| _____ | 15. royeht | —an explanation based on many observations |

Directions: *Complete the following sentences using the terms listed below. Some terms may not be used.*

**law
botany**

**critical thinking
volume**

**measurement
experiment**

- _____ is a process that uses certain skills to solve problems.
- A scientific _____ is a rule that tells us how nature works.
- The International System of Units (SI) is a system of _____.
- To measure the _____ of a small amount of liquid you might use a graduated cylinder.
- Scientists often perform a(n) _____ to test a hypothesis under controlled conditions.