

# Chapter 1

## Biology: The Study of Life

### Reinforcement and Study Guide

#### Section 1.1 What is biology?

Circle the letter of the choice that best completes the statement.

- 14.** A species is defined as a group of similar-looking organisms that  
**a.** undergo similar developmental changes.      **b.** can interbreed.  
**c.** can interbreed and produce fertile offspring.      **d.** reproduce in the same way.
- 15.** Every organism begins life as a(n)  
**a.** embryo.      **b.** single cell.      **c.** nucleus.      **d.** fertilized egg.
- 16.** A corn plant producing ears of corn is an example of  
**a.** growth.      **b.** reproduction.      **c.** development.      **d.** all of these.
- 17.** If members of a species fail to reproduce successfully, the species  
**a.** will eventually become extinct.      **b.** will not develop normally.  
**c.** will evolve into a new species.      **d.** will remain unchanged.

Complete the table below by checking the correct column for each example.

Example	Stimulus	Response
<b>18.</b> The recess bell ringing at an elementary school		
<b>19.</b> Your mouth watering at the sight of food on a plate		
<b>20.</b> A sudden drop in air temperature		
<b>21.</b> A flu virus entering your body		
<b>22.</b> Getting butterflies in your stomach before giving a speech		

Answer the following questions.

- 23.** Explain the concept of homeostasis.

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- 24.** What is an adaptation?

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- 25.** What is evolution?

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In your textbook, read about observing and hypothesizing.

Answer the following questions.

1. What is meant by *scientific methods*? \_\_\_\_\_  
\_\_\_\_\_
2. What is a hypothesis? \_\_\_\_\_  
\_\_\_\_\_
3. How is a hypothesis tested? \_\_\_\_\_  
\_\_\_\_\_

In your textbook, read about experimenting.

For each item in Column A, write the letter of the matching item in Column B.

Column A	Column B
_____ 4. A procedure that tests a hypothesis by collecting information under controlled conditions	a. dependent variable
_____ 5. In an experiment, the group that is the standard against which results are compared	b. experimental group
_____ 6. In an experiment, the group that is the standard against which results are compared	c. independent variable
_____ 7. The condition that is tested by the experimenter	d. experiment
_____ 8. The condition being observed or measured in an experiment	e. control group

Use each of the terms below just once to complete the passage.

experimental results

experiment(s)

hypothesis

laws

scientific journals

theory

valid

verify

When **(9)** \_\_\_\_\_ are reported in **(10)** \_\_\_\_\_, other scientists may try to **(11)** \_\_\_\_\_ the results by repeating the **(12)** \_\_\_\_\_. Usually when a(n) **(13)** \_\_\_\_\_ is supported by data from several scientists, it is considered **(14)** \_\_\_\_\_. Over time, a hypothesis that is supported by many observations and experiments becomes a **(15)** \_\_\_\_\_. Some well-established facts of nature, such as gravity, are recognized as **(16)** \_\_\_\_\_.

Complete the chart by checking the more correct column for each example.

<b>Example</b>	<b>Quantitative Research</b>	<b>Qualitative Research</b>
1. Numerical data		
2. Field study of hunting behavior		
3. Thermometer, balance scale, stopwatch		
4. Testable hypothesis		
5. Measurements from controlled laboratory experiments		
6. Purely observational data		
7. Binoculars, tape recorder, camera		

Complete each statement.

8. In order for scientific research to be universally understood, scientists report measurements in the \_\_\_\_\_, a modern form of the metric system.
9. This system of measurement is abbreviated \_\_\_\_\_.
10. This system is a \_\_\_\_\_ system in which measurements are expressed in multiples of \_\_\_\_\_ or \_\_\_\_\_ of a basic unit.