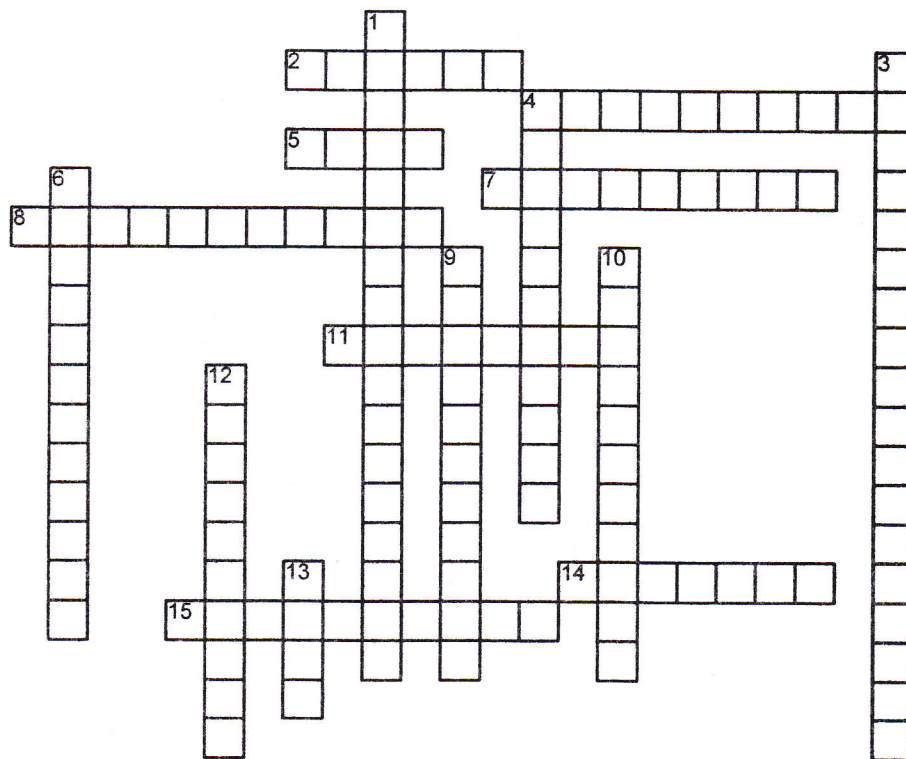


Name \_\_\_\_\_ Hour \_\_\_\_\_

## Chapter 1 Review

### The Science of Biology

Complete the puzzle using the clues shown below.



#### Across

2. A well tested explanation that unifies a broad range of observations
4. A device that magnifies images that are too small to see with an unaided eye
5. The smallest unit of an organism that can be considered alive.
7. A logical interpretation based on prior knowledge
8. A group of cells that develops from the single original cell
11. A signal to which an organism responds.
14. The science that seeks to understand the natural world
15. A set of chemical reactions through which an organism builds up and breaks down materials.

#### Down

1. A technique used to separate the different cell parts.
3. What is observed and changes in response to the manipulated variable
4. The variable that is deliberately changed
6. A decimal system of measurement whose units are based on multiples of 10.
9. The process by which organisms keep thier internal conditions stable
10. The process of gathering information about events in a careful way.
12. A proposed sceintific explanation for a set of observations
13. The information gathered from observations

1. \_\_\_\_ The statement "the worm is 2 cm long" is a(n)
  - a. quantitative observation.
  - b. qualitative observation.
  - c. inference.
  - d. hypothesis.
2. \_\_\_\_ To be useful in science, a hypothesis must be
  - a. measurable.
  - b. observable.
  - c. testable.
  - d. correct.
3. \_\_\_\_ Which of the following statements about a controlled experiment is true?
  - a. All the variables must be kept the same.
  - b. Only one variable is tested at a time.
  - c. Scientists always use controlled experiments.
  - d. Controlled experiments cannot be performed on living things.
4. \_\_\_\_ A scientific theory is
  - a. another word for hypothesis.
  - b. a well-tested explanation that unifies a broad range of observations.
  - c. the same as the conclusion of an experiment.
  - d. the first step in a controlled experiment.
5. \_\_\_\_ The process in which two cells from different parents unite to produce the first cell of a new organism is called
  - a. homeostasis.
  - b. development.
  - c. asexual reproduction.
  - d. sexual reproduction.
6. \_\_\_\_ The process by which organisms keep their internal conditions relatively stable is called
  - a. metabolism.
  - b. a genome.
  - c. evolution.
  - d. homeostasis.
7. \_\_\_\_ An instrument that produces images by focusing light rays is called a
  - a. light microscope.
  - b. transmission electron microscope.
  - c. scanning electron microscope.
  - d. electronic balance.
8. What is the goal of science?

9. How does an observation about an object differ from an inference about the object?

10. Explain the difference between qualitative and quantitative observations. Give an example of each one.

11. Distinguish between a variable and a control.

12. *On the lines provided, use the numbers 1-5 to place the following steps of an experimental investigation in the correct order. (1 is the first step, and 5 is the last step.)*

- \_\_\_\_\_ a. form a hypothesis
- \_\_\_\_\_ b. record and analyze results
- \_\_\_\_\_ c. draw a conclusion
- \_\_\_\_\_ d. ask a question
- \_\_\_\_\_ e. set up a controlled experiment.

13. What must happen for a hypothesis to become a theory?

14. List nine characteristics that classify a mushroom as a living thing. (Remember: FRED H GARC)

1.

2.

3.

4.

5.

6.

7.

8.

9.

15. The following table describes the different systems, or levels, at which life can be studied. Fill in the missing descriptions.

Level	Description
Biosphere	The part of Earth that contains all ecosystems.
Ecosystem	
Community	
Population	
Organism	Individual living thing
Groups of Cells	
Cells	
Molecules	Groups of atoms; smallest unit of most chemical compounds

16. What system of measurement is universal among scientists?

17. What are the two main types of electron microscopes?

a.

b.

18. On the lines provided, identify each description as light microscope, electron microscope, or both.

\_\_\_\_\_ a. can be used to view living samples

\_\_\_\_\_ b. can be equipped to produce real-time images of movements of cells

\_\_\_\_\_ c. used to view dead and preserved cells

\_\_\_\_\_ d. can produce 3-D images of the surfaces of objects

19. Distinguish between external and internal stimuli. Give an example of each.