

Chapter 1 – The Study of Life

Complete using BC Biology 12, pages 4 - 17

1.1 The Characteristics of Life

pages 4 - 7

1. The diversity of life seems overwhelming, and yet all living things have certain characteristics in common. Living things are distinguished from non-living things as they generally...

- (1) _____
- (2) _____
- (3) _____
- (4) _____
- (5) _____
- (6) _____
- (7) _____



2. Use the numbers from the last question to identify the characteristics of life that are described below.

Numbers will be used more than once, and some have more than one possible answer.

- a. _____ A seed starts to germinate in the soil.
- b. _____ A sperm fertilizes an egg and a zygote results.
- c. _____ A little boy eats a bowl of cereal for breakfast.
- d. _____ A grasshopper molts its exoskeleton as it gets bigger.
- e. _____ Body temperature remains relatively constant at 37°C.
- f. _____ A person starts to shiver as he gets onto a cold ice rink.
- g. _____ Some plants reproduce by producing seeds and spores.
- h. _____ Before a skin cell undergoes mitosis, its DNA is duplicated.
- i. _____ The unicellular protist *Paramecium* divides by binary fission.
- j. _____ A person's cell phone rings and he picks it up to answer the call.
- k. _____ The circulatory system consists of the heart, blood vessels, and blood.
- l. _____ A driver hears a siren and checks to see where the siren is coming from.
- m. _____ A bacterium is a unicellular organism, while a moss is a multicellular organism.
- n. _____ A caterpillar forms a hard shell called a chrysalis and soon emerges as a butterfly.
- o. _____ A pancreatic cell has organelles that work together to produce the hormone insulin.
- p. _____ Organisms that live on land have special features that allow them to conserve water.
- q. _____ A person walks into a dark movie theatre and his pupils dilate to adjust to the darkness.
- r. _____ After finishing a long-distance run, your heart rate starts to slow down as you rest for a while.

3. Identify the key terms described in the scenarios below.

Choose from the following list of terms (*each term will only be used once*):

- (1) control
- (2) controlled experiment
- (3) data
- (4) dependent variable
- (5) hypothesis
- (6) independent variable
- (7) samples
- (8) sample size

- a. _____ Scientists conducted a survey by asking 1500 men about their exercise routines. What does the number of men surveyed refer to?
- b. _____ A graph shows the rate of reaction for nuclease on the y -axis and for pH on the x -axis. What does pH represent?
- c. _____ In a drug trial, one group is given a cold medication in the form of a pill, while the other group is given a sugar pill. What is the group that is given the sugar pill called?
- d. _____ Ecologists collected small amounts of soil from different areas on a farm to determine the levels of nitrates. What are these small amounts of soil called?
- e. _____ In an experiment investigating the amount of carbon dioxide produced, yeast was given different concentrations of sucrose. What does the amount of carbon dioxide produced represent in the experiment?
- f. _____ A marine biologist counted the number of sea stars in the waters off the coast of the Queen Charlotte Islands over a period of a year. She then displayed this information in a table and a bar graph. What is this information called?
- g. _____ In an investigation studying the rate of photosynthesis, all the waterweeds were placed in the same size test tubes with the same amount of water and kept at room temperature. Each test tube was exposed to different amounts of light. What is this investigation called?
- h. _____ A group of people showed symptoms of neurocysticercosis in a small community. This is a condition where tapeworms infect the brain. After questioning all these people, physicians proposed that they were infected with pork tapeworm by consuming contaminated food at a local restaurant. What is this explanation otherwise known as?



4. Describe two specific examples of the benefits of scientific discoveries. *Do not have to be examples from textbook.*

- _____

- _____

5. Describe two specific examples of the drawbacks of scientific discoveries. *Do not have to be examples from textbook.*

- _____

- _____

6. Using at least two specific examples, explain the potential consequences to the human population if we were to STOP using technology. _____

Chapter 1 Review Questions

pages 16 - 17

Mark using the answer key on page 523 – 524. Ensure your written answers are in your own words.

1. _____ 4. _____ 7. _____ 10. _____
2. _____ 5. _____ 8. _____
3. _____ 6. _____ 9. _____

12. *Write it as a statement that could be tested*

13. *Variable being investigated.*

14. *Control group.*

15. *Two conditions that should be kept the same.*

17. *Type of data that could be collected.*

21. *Read last paragraph of 1.1 and answer in your own words.*

