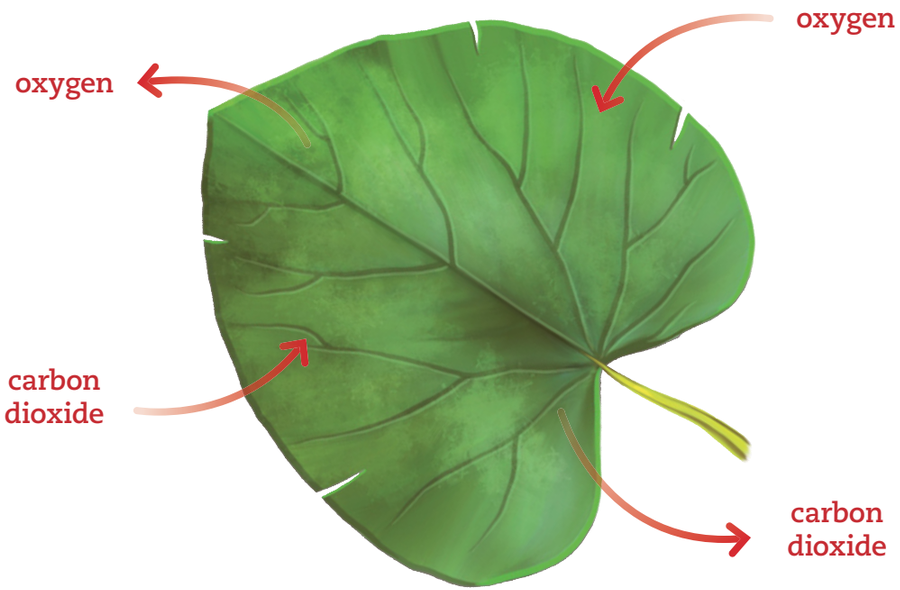
Test 1 Study Page • Summary

Name: _____ Grade: _____

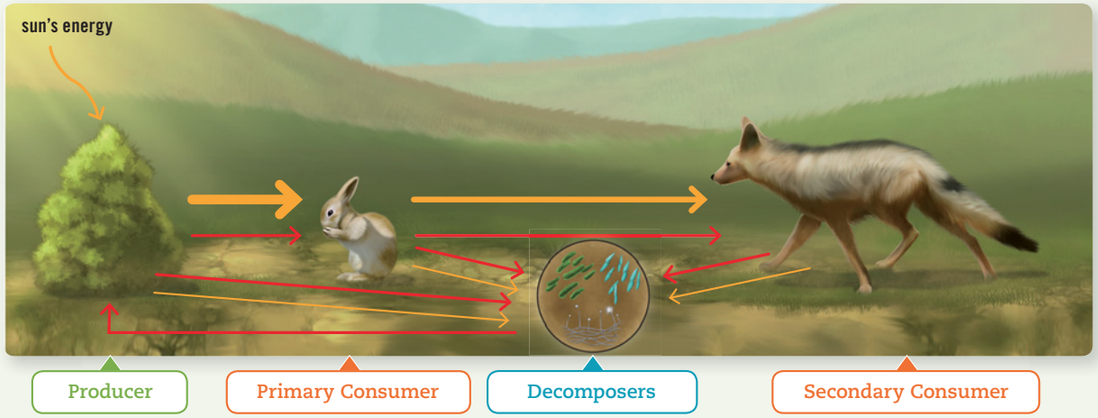
All living things need nourishment to obtain energy and to perform their vital functions. According to how they obtain their food, organisms can be classified as autotrophs or heterotrophs. Autotrophs are organisms that are capable of fabricating their own nutrients, while heterotrophs obtain their nutrients from other organisms.

Autotrophs—plants, algae and cyanobacteria—produce their nutrients through a process called **photosynthesis**, whereby glucose and oxygen, a vital gas for life on earth, is produced from sunlight, carbon dioxide and water.



The way in which plants are nourished was not clear until a scientist named Jan Baptist van Helmont mistakenly concluded that plants received nourishment only from water. Van Helmont did not consider carbon dioxide or sunlight.

In nature, the flow of matter → and energy → between trophic levels of an ecosystem can be represented via food chains and food webs.



Producers are in charge of producing organic matter from the sun's energy and inorganic matter.

Consumers feed on the organic matter fabricated by the producers.

Decomposers return inorganic matter from the waste and remains of other living things to the environment.

Food chains and systems can be altered by human intervention—for example, the overexploitation of natural resources, indiscriminate hunting, the introduction of new species and the use of pesticides in agriculture.

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Test 1 Study Page • Review

Remove, answer, and glue in your notebook.

Section 1

1. Elaborate a photosynthesis diagram, including what is needed and what is produced by this process. Explain your representation.

2. What was Van Helmont's contribution to our knowledge of plant nutrition?

Section 2

3. Using the following symbols, create a food chain with four trophic levels. Consider the flow of energy and matter within it.

Producer Consumer Decomposer

Section 3

4. If pesticides damage the producers in the food chain above and make them disappear, what effect will this have on the primary and secondary consumers in the chain? Explain.

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