

Active Reading *continued*

VOCABULARY DEVELOPMENT

Read each question and write the answer in the space provided.

5. Energy-rich molecules that organisms use to carry out daily activities are

6. The process by which a plant uses sunlight to make sugar molecules is called

SEQUENCING INFORMATION

One reading skill is the ability to sequence information, or to logically place items or events in the order in which they occur.

Sequence the statements below to show the steps in the process of energy production and consumption. Write "1" on the line in front of the first step, "2" on the line in front of the second step, and so on.

_____ 7. Photosynthesis produces carbohydrates.

_____ 8. Plants, algae, and some bacteria capture solar energy.

_____ 9. Energy is transferred from one organism to another.

_____ 10. Solar energy drives a series of chemical reactions.

_____ 11. Other organisms consume carbohydrates found in plants, algae, and some bacteria.

RECOGNIZING CAUSE AND EFFECT

One reading skill is the ability to recognize cause and effect.

In the space provided, write the letter of the effect that best matches the cause.

_____ 12. Organisms consume food and use energy from carbohydrates.

a. Carbohydrates are produced.

b. Energy travels from one organism to another.

_____ 13. A plant uses sunlight for photosynthesis.

c. Energy from the plant is transferred and used to move, grow, and reproduce.

_____ 14. An animal eats a plant.

OBTAIN AND USE ENERGY

Energy is the ability to make things change. Energy is important because it powers life processes. It provides organisms with the ability to maintain balance, grow, reproduce, and carry out other life functions. Some organisms obtain energy from the foods they eat or, in the case of plants and several other types of organisms, the foods that they produce. Organisms that get energy from the food they eat are called heterotrophs. Organisms that use energy from the sun to make their own food (which they then use for energy) are called autotrophs. The process is called photosynthesis.

As you'll learn, energy doesn't just flow through individual organisms; it also flows through communities of organisms, or ecosystems, and determines how organisms interact with each other and the environment.

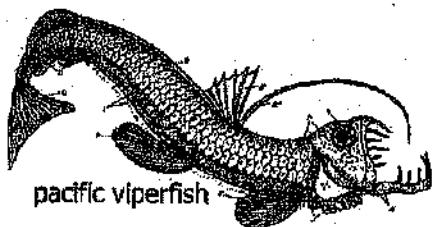
25. Define energy.

26. Why is energy important to a living organism?

27. What is the difference between an autotroph and a heterotroph?

28. What is the name of the process that plants use to make their own food using energy from the sun?

29. Identify each of the organisms below as either a heterotroph or an autotroph.



pacific viperfish



Palm Tree

RESPOND TO THE ENVIRONMENT / MAINTAIN HOMEOSTASIS

Living things live in a constant connection with the environment, which includes the air, water, weather, temperature, any organisms in the area, and many other factors. These external environmental factors act as stimuli and can cause a response from living

things. Organisms need to respond to the changes in order to stay alive and healthy. For example, if you go outside on a bright summer day, the sun may cause you to squint. Perhaps the bark of an approaching dog causes you to turn your head quickly. Just as you are constantly sensing and responding to changes in your environment, so are all other organisms. For example, a specialized leaf of the Venus' flytrap senses the light footsteps of a soon-to-be-digested green bottle fly. The plant responded to this environmental stimulus by rapidly folding the leaf together.

An organism must respond to changes in the internal environment as well. Internal conditions include the level of water, nutrients, and minerals inside the body. It also refers to body temperature and hormone levels. Adjustments to internal changes help organisms maintain a stable internal environment. The regulation of an organism's internal environment to maintain conditions suitable for life is called homeostasis. Or you can just think of it as keeping everything in BALANCE! For example, you have a "thermostat" in your brain that reacts whenever your body temperature varies slightly from 37°C (about 98.6°F). If this internal thermostat detects a slight rise in your body temperature on a hot day, your brain signals your skin to produce sweat. Sweating helps cool your body.

The ability of mammals and birds to regulate body temperature is just one example of homeostasis. Mechanisms of homeostasis enable organisms to regulate their *internal* environment, despite changes in their *external* environment.

30. What are some environmental factors (stimuli) that organisms respond to?

31. Organisms must also respond to _____ factors in order to stay healthy & survive.

32. What are two internal factors that organisms respond to?

33. Give two examples from the reading of how living things respond to changes in their environment.

23. If light is applied to a human eye, how does it respond?

24. Describe homeostasis.