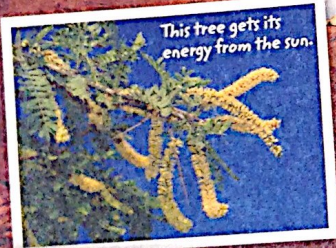


Energy Transfer

How is energy transferred among organisms?

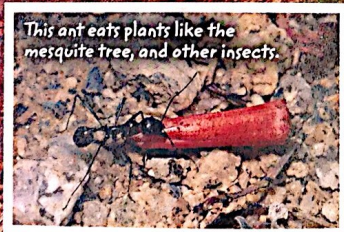
Organisms change energy from the environment or from their food into other types of energy. Some of this energy is used for the organism's activities, such as breathing or moving. Some of the energy is saved within the organism to use later. If an organism is eaten or decomposes, the consumer or decomposer takes in the energy stored in the original organism. Only chemical energy that an organism has stored in its tissues is available to consumers. In this way, energy is transferred from organism to organism.

Active Reading 9 Infer When a grasshopper eats grass, only some of the energy from the grass is stored in the grasshopper's body. How does the grasshopper use the rest of the energy?



This tree gets its energy from the sun.

10 Identify By what process does this tree get its energy?



This ant eats plants like the mesquite tree, and other insects.

11 Apply What type of energy is this ant consuming?

Energy Flows Through a Food Chain

A **food chain** is the path of energy transfer from producers to consumers. Energy moves from one organism to the next in one direction. The arrows in a food chain represent the transfer of energy, as one organism is eaten by another. Arrows represent the flow of energy from the body of the consumed organism to the body of the consumer of that organism.

Producers form the base of food chains. Producers transfer energy to the first, or primary, consumer in the food chain. The next, or secondary, consumer in the food chain consumes the primary consumer. A tertiary consumer eats the secondary consumer. Finally, decomposers recycle matter back to the soil.

Visualize It!

The photographs below show a typical desert food chain. Answer the following four questions from left to right based on your understanding of how energy flows in a food chain.

This hawk eats the lizard. It is at the top of the food chain.



13 Predict If nothing ever eats this hawk, what might eventually happen to the energy that is stored in its body?

This lizard eats mostly insects.



12 Apply What does the arrow between the ant and the lizard represent?