

Food Chains and Webs

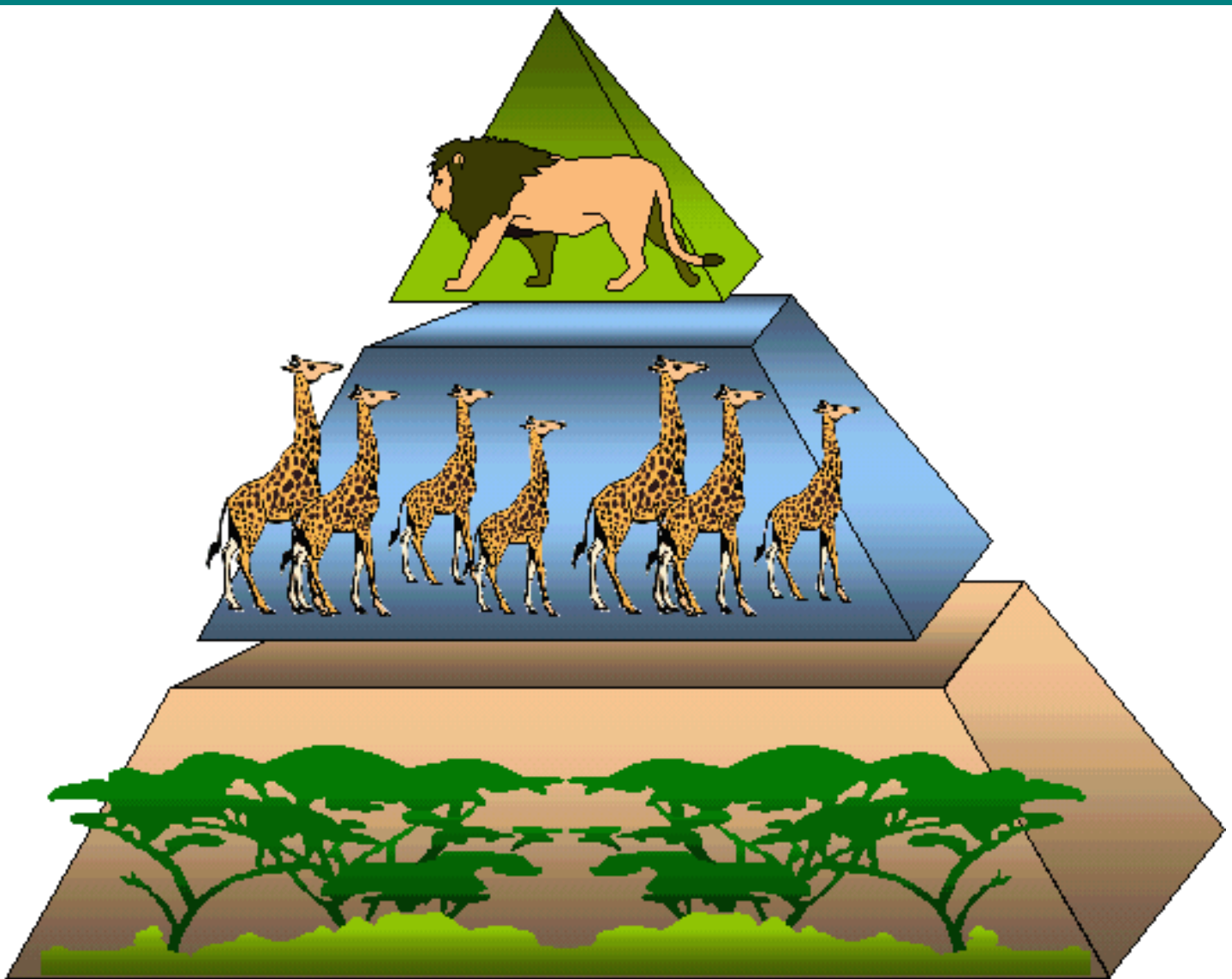
Do you like to play games? If you do, you will need energy. Every time you run or jump, you are using up energy in your body. How do you get the energy to play? You get energy from the food you eat. Similarly, all living things get energy from their food so that they can move and grow. As food passes through the body, some of it is digested. This process of digestion releases energy.

A **food chain** shows how each living thing gets its food. Some animals eat plants and some animals eat other animals. For example, a simple food chain links the trees & shrubs, the giraffes (that eat trees & shrubs), and the lions (that eat the giraffes). Each link in this chain is food for the next link. A food chain always starts with plant life and ends with an animal. Animals that eat only plants are called *herbivores*. Animals that eat other animals are called *carnivores*.

Do you know why there are **more herbivores than carnivores**? In a food chain, energy is passed from one link to another. When a herbivore eats, only a fraction of the energy (that it gets from the plant food) becomes new body mass; the rest of the energy is lost as waste or used up (by the herbivore as it moves). Likewise, when a carnivore eats another animal, only a portion of the energy from the animal food is stored in its tissues. In other words, organisms along a food chain pass on much less energy (in the form of body mass) than they receive.

Because of the large amount of energy that is lost at each link ...

- 1. The further along the food chain you go, the less food (and hence energy) remains available.**

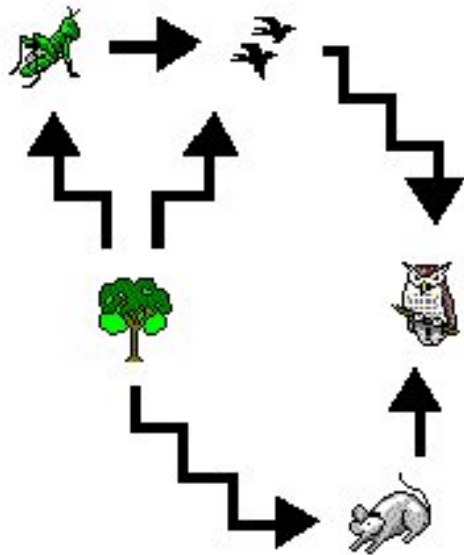


The above pyramid-shaped food chain shows many trees & shrubs providing food and energy to giraffes. Note that as we go up, there are fewer giraffes than trees & shrubs and even fewer lions than giraffes. In other words, a large mass of living things at the base is required to support a few at the top.

- 2. Most food chains have no more than four or five links.** There cannot be too many links in a single food chain because the animals at the end of the chain would not get enough food (and hence energy) to stay alive.

Most animals are part of more than one food chain and eat more than one kind of food in order to meet their food and energy requirements. These interconnected food chains form a **food web**.

The following is a possible food web:



Note that the arrows are drawn from food source to food consumers ... in other words, you can substitute the arrows with the words 'eaten by'.

If you are using **Internet Explorer 4** or **Netscape Navigator 4**, you may want to have some fun ... [drawing a possible food web](#).

A change in the size of one population in a food chain will affect other populations. This interdependence of the populations within a food chain helps to maintain the balance of plant and animal populations within a community. For example, when there are too many giraffes; there will be insufficient trees and shrubs for all of them to eat. Many giraffes will starve and die. Less giraffes means more time for the trees and shrubs to grow to maturity and multiply. Less giraffes also means less food is available for the lions to eat and some lions will starve to death. When there are fewer lions, the giraffe population will increase.

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