Food Chain vs. Food Web

[1] When we study an animal species, we learn about its anatomy, its habitat, its behaviors, its diet, and its enemies. The last two topics are essential for us to understand where the animal stands in its food chain and in its food web. But, what is a food chain, what is a food web, and, furthermore, what is the difference between a food chain and a food web?

[2] To answer these three questions, let's use zebras as our example.

[3] Zebras roam freely in the African savannah, and they feed on grasses. Their biggest fear is to bump into hungry lions, cheetahs, leopards, crocodiles, or other carnivorous (meat-eating) animals. When zebras graze, they often share their lot of land with animals like rhinos, warthogs, and antelopes that also eat plants.

[4] In this example, lions eat zebras, and zebras eat grasses. There is an invisible chain linking the fate of these three organisms together, and we call this invisible chain a food chain. Now, let's expand our focus to include warthogs. Like zebras, warthogs are grazers. Also like zebras, warthogs are afraid of lions. Hence, we know that we can establish another food chain involving grasses, warthogs, and lions. If we continue this exercise, we will map out many individual food chains. Collectively, these individual food chains form a food web unique to the African savannah.

[5] Both zebras and warthogs are in the second level of their respective food chain as well as in their food web. Above them (the third level) are lions, and below them (the first level) are plants. We call each level a trophic level. Usually, the higher an animal is in its food chain or food web, the bigger and more powerful it is.

[6] Of course, not all food chains have three trophic levels. For instance, algae are consumed by fish, fish are consumed by seals, and seals are consumed by polar bears. Algae, fish, seals, and polar bears make up a four-trophic-level food chain.

[7] Aside from learning the definitions of the food chain and the food web, it is also important to know how disastrous our environment may become if a food chain or a food web gets interrupted. For example, when Thomas Austin brought twenty-four rabbits from England and released them on his property in southern Victoria, Australia, in 1859, nobody could have foreseen that these twenty-four rabbits would multiply into millions in the next ten years! As rabbits are foreign species, they have no natural predators and face literally no threats in their newly adopted homeland, Australia. Ruthless plant eaters, rabbits are responsible for the extinction of many Australian plants and plant-eating animals!

Name _____ Science Pd. _____

Food Chain vs. Food Web

1. Which of the following about the food chain is correct?
   - (A) Lions are on the first trophic level in their food chain.
   - (B) A food chain always contains three trophic levels.
   - (C) Usually, the higher an animal is in its food chain, the bigger and more powerful it is.
   - (D) A food chain is also known as a food web.

2. Plants and algae are usually on the first trophic level in a food web.
   - (A) True
   - (B) False

3. If you have to get rid of one animal from the following choices so the remaining correctly form a food chain, which one will you eliminate?
   - (A) Elephants
   - (B) Nuts or seeds
   - (C) Rats
   - (D) Snakes

4. Which of the following statements about the food web is correct? (Please choose two of the best answers.)
   - (A) A food chain is a collection of many different food webs.
   - (B) The food web in a tropical rain forest is different from that in a desert.
   - (C) While the interruption of a food chain may be disastrous to our environment, the interruption of a food web is not.
   - (D) A food web is a collection of many different food chains.

5. Look at this food chain: Human ==> Chicken ==> Earthworm ==> decaying vegetable matter. Which organism is on the second trophic level?
   - (A) Human
   - (B) Decaying vegetable matter
   - (C) Earthworm
   - (D) Chicken

6. Which of the following animals can potentially substitute "human" in the food chain illustrated in question #5?
   - (A) Elephant
   - (B) Fungus
   - (C) Hippopotamus
   - (D) Crocodile

7. Why did many Australian plant-eating animals become extinct?
   - (A) Because they were killed by ostriches, introduced to Australia in 1598
   - (B) Because their food source was eaten by rabbits, introduced to Australia in 1598
   - (C) Because they were killed by ostriches, introduced to Australia in 1859
   - (D) Because their food source was eaten by rabbits, introduced to Australia in 1859