Student reading

What is a producer and what is a consumer?

We all eat! Actually, everything in the entire world has to get its energy from somewhere. We all need energy so we can live, grow, move, or do anything at all! Even though we all need energy to live, there are different ways that living things get their energy. There are some living things in this world that produce their energy and there are other living things in this world that consume to get their energy.

The most common producers are plants, so if you are a producer then there is a really good chance you are green. Producers are usually green in color because of cells with chlorophyll in them. Producers use the sun to make their energy in a process known as photosynthesis. There are plants in water bodies including oceans, lakes and rivers, and there are plants on the land like trees, bushes and grasses. When a cow chomps down on sweet spring grass it is eating a producer. When you eat all your broccoli at dinner, you're eating a producer. When a small fish eats algae off a rock, he is eating a producer too! Producers are the base of the food webs that our world depends on. They get their energy not by eating a large dinner but by pointing their chlorophyll-rich bodies toward the sun.

What exactly do we mean by "living things"?

When we talk about food webs or chains, we are talking about energy moving between "living things," mostly through eating. A "living thing" can be an animal, a plant, algae, or anything that needs energy to live and grow. Seagrass, shown here, is another example of a living thing.

Chlorophyll has the ability to turn water, carbon dioxide and sunlight into sugars that then give the plant energy to grow and live its life. The energy that plants produce also gives the living thing that eats the plant energy too! So when you eat your broccoli or that cow eats the grass it is actually consuming the energy that the plant produced from the sun. Where a living thing gets its energy from is how we decide if it is a producer or a consumer. If the living thing gets energy only from the sun, then it is considered a primary producer. If the living thing eats a primary producer then it is considered a consumer.

There are also producers who make their energy from deep vents in the bottom of the ocean. These producers use a process called chemosynthesis to produce their energy, and this process is not seen anywhere on Earth except these deep sea vents. Now that you really understand the difference between a producer and a consumer, let's talk more about different types of consumers. Consumers are broken down into different groups. If an animal is eating a producer then it is considered a primary consumer. This would be a cow eating grass, for example, or you – if you only eat fruits and vegetables. If a consumer eats another consumer that ate a producer, then it is a secondary consumer. An example of this is if you

eat a hamburger. The sun gave the grass or hay energy (the primary producer); the cow came along and ate the grass (the primary consumer) and then you are eating that cow in the form of a hamburger. You are the second consumer in the line.

Now Imagine a bonefish swimming around off the tip of South Florida, looking for a meal. It finds a delicious-looking mud crab walking around the flats, catches it, and enjoys a great meal. That mud crab had eaten an oyster off the oyster reef nearby, and that oyster had filtered out algae from the water. The bonefish is an example of a tertiary consumer. He was third on the list of things that got their energy from somewhere else!

These producers and consumers are all the players in the giant web that is created by living things on Earth. Getting energy to live and grow are the most important things to staying alive and are the focus for living things no matter how big or small they might be. So now that you have a better understanding of how these relationships work you will be better able to create a food chain and web of your own!

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