

# CHAPTER 17

During this new unit you will be studying, I want you to remember a sentence that you should remember from earlier chapters:



What do you think it means? No, everything in the world is not glued together! But whatever you do today can affect everything else in the world in the future! Cool, huh?

Think about all of the kingdoms you have explored:

**Animals**

**Plants**

**Protists**

**Fungi**

**Archaeobacteria**

**Eubacteria**

All of these kingdoms are connected to each other! They all must work together in order to survive!

Do you remember the biomes you studied?

**Tundra**

**Coniferous Forest**

**Deciduous Forest**

**Tropical Rain Forest**

**Grassland**

**Aquatic**

**Desert**

In each of these biomes you may find organisms from each kingdom! And... each of these organisms must work together in order to survive!

So every biome has kingdoms of organisms that work together to survive! This means that every biome and every kingdom is connected to each other!

The easiest way to explore the fact that everything in the world is connected is to look at a...

**Food chain!**



No, not a chain of fast-food restaurants... like where you get your favorite hamburger!

A **food chain** is a way to show how species use each other for food. It is called a "chain" because nutrients are passed from one organism to another...

## But, why?

Because every living organism is food for another organism!

Let's look at a very simple food chain:



In this food chain...

The grasshopper eats the grass... the snake eats the grasshopper... and the bird eats the snake!

# Simple, right? You bet!

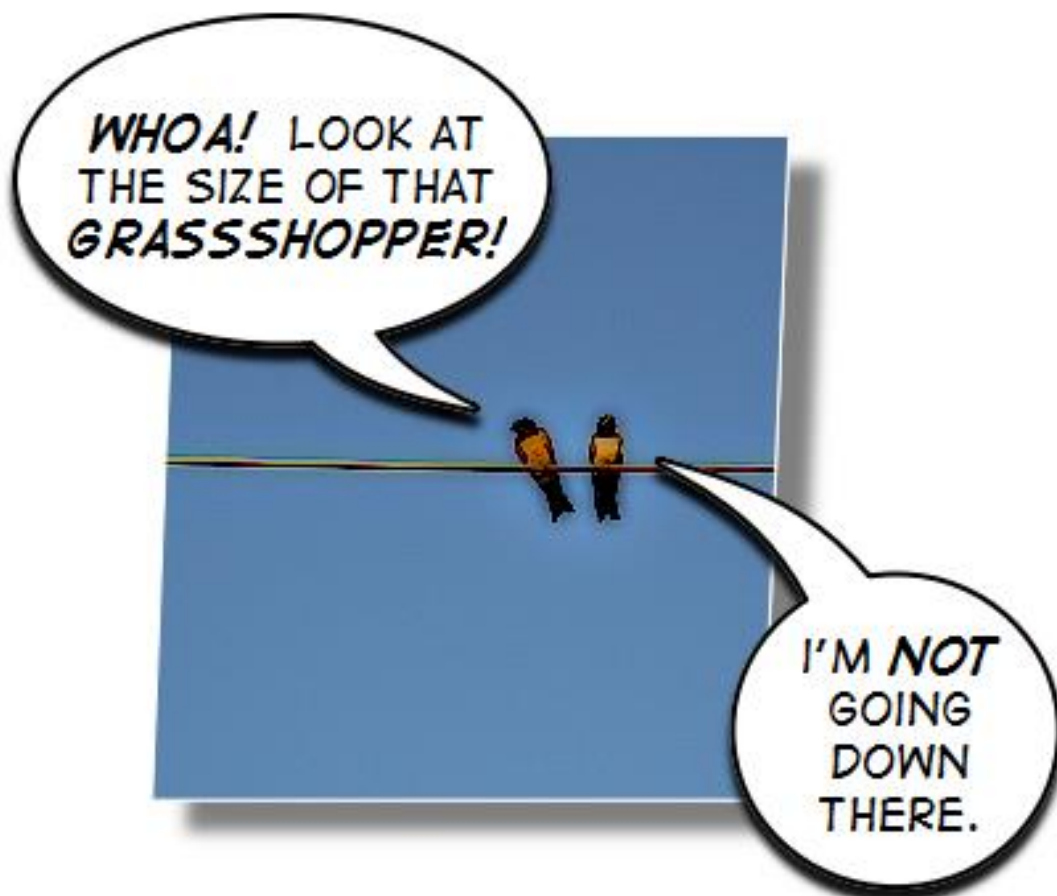
Food chains show how nutrients are passed from one organism to another! Whenever you look at a food chain, please remember that the "chain" only works in one direction.

**You wouldn't say:**

The **grass** ate the grasshopper.

Then the **grasshopper** jumped on the bird and ate it!

And then the **bird** flew down and swallowed up the snake...



**Before you start thinking that this chapter doesn't have any definitions...**

Scientists call plants in all food chains by another name – **producers!**

Plants are known as producers because they are **autotrophic** (Remember that autotrophs are organisms that make their own food!) All other organisms are known as **consumers**. Consumers are **heterotrophic**. They get all of their nutrients by eating (or consuming) other organisms!

There are three different consumers that you should know about:

**Herbivores** – (“her-bih-vorz”) these animals only eat plants to get their nutrients.

**Carnivores** – (“car-nih-vorz”) these are the animals that eat other animals (like the herbivores) for food.

**Omnivores** – (“ahm-nih-vorz”) Omnivores are not picky about what they eat. They will eat plants or animals!

But what about the organisms out there like fungi and bacteria that eat the dead stuff in the environment? If you remember, these organisms are known as **decomposers**.

These organisms are very important to all food chains as well! The nutrients that decomposers make from breaking down all of the dead stuff are used by the producers. And every food chain has at least one producer in it!



**Let's look at the food chain we talked about earlier!**



## In this food chain:

- The Grass would be the **producer** because it is a plant and it makes its own food.
- The grasshopper is a **consumer** because it is eating something else to get its nutrients. It is also a **herbivore** because it is eating a plant (producers)!
- The bird would be another **consumer**, because it is also eating something else to get its nutrients. The bird is also a **carnivore** because it is eating another animal.
- The snake, like the bird, is also a **consumer** and a **carnivore**.





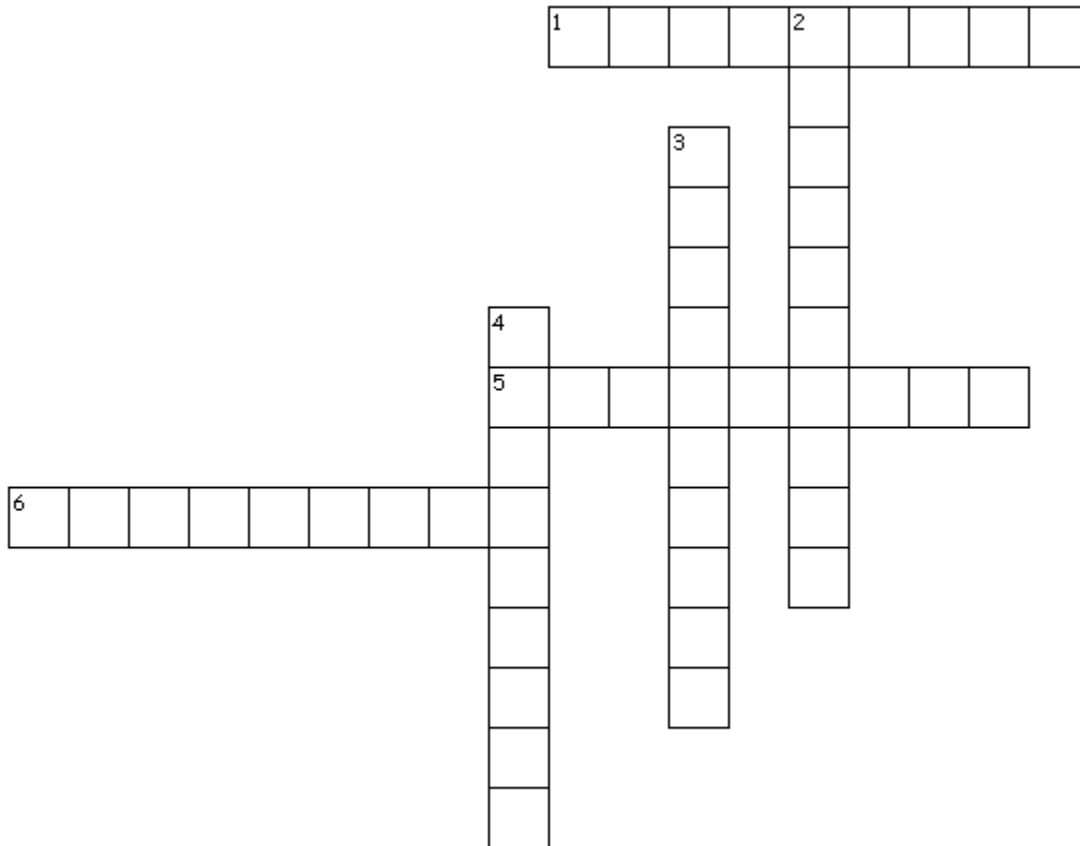
I know that birds eat things other than just grasshoppers! I've seen them eat seeds and fruits! So how can they be a carnivore? Wouldn't they be an omnivore?

If you didn't think of this before, you probably are right now!

You would be very correct in stating that the bird is an omnivore in real life! However, the food chain you have looked at today only shows that a bird eats grasshoppers. It does not show you everything that a bird can eat!

This is a big problem with looking at food chains! They can never show you exactly what it is like in real life! You are going to look at something much more realistic in the next chapter...

Place the answers to the following clues in the boxes below. Each box should contain one letter.



## Across

1. a relationship between species that use each other for food; nutrients are passed from one organism to another in this relationship
5. these organisms will eat plants or animals
6. autotrophic organisms that produce their own food; plants

## Down

2. these are the animals that eat other animals (like the herbivores) for food
3. these animals only eat plants to get their nutrients
4. animals that get all of their nutrients by eating (or consuming) other organism

Match the words in the first column to the best available answer in the second column.

- |                  |  |
|------------------|--|
| _____ Food chain | 1) these animals only eat plants to get their nutrients  |
| _____ Producers  | 2) autotrophic organisms that produce their own food; plants   |
| _____ Consumers  | 3) these organisms will eat plants or animals  |
| _____ Herbivores | 4) a relationship between species that use each other for food; nutrients are passed from one organism to another in this relationship |
| _____ Carnivores | 5) animals that get all of their nutrients by eating (or consuming) other organisms  |
| _____ Omnivores  | 6) these are the animals that eat other animals (like the herbivores) for food   |

**Draw a picture of a food chain. Label your drawing with the following types of organisms:**

**Producer**

**Herbivore**

and

**Carnivore**