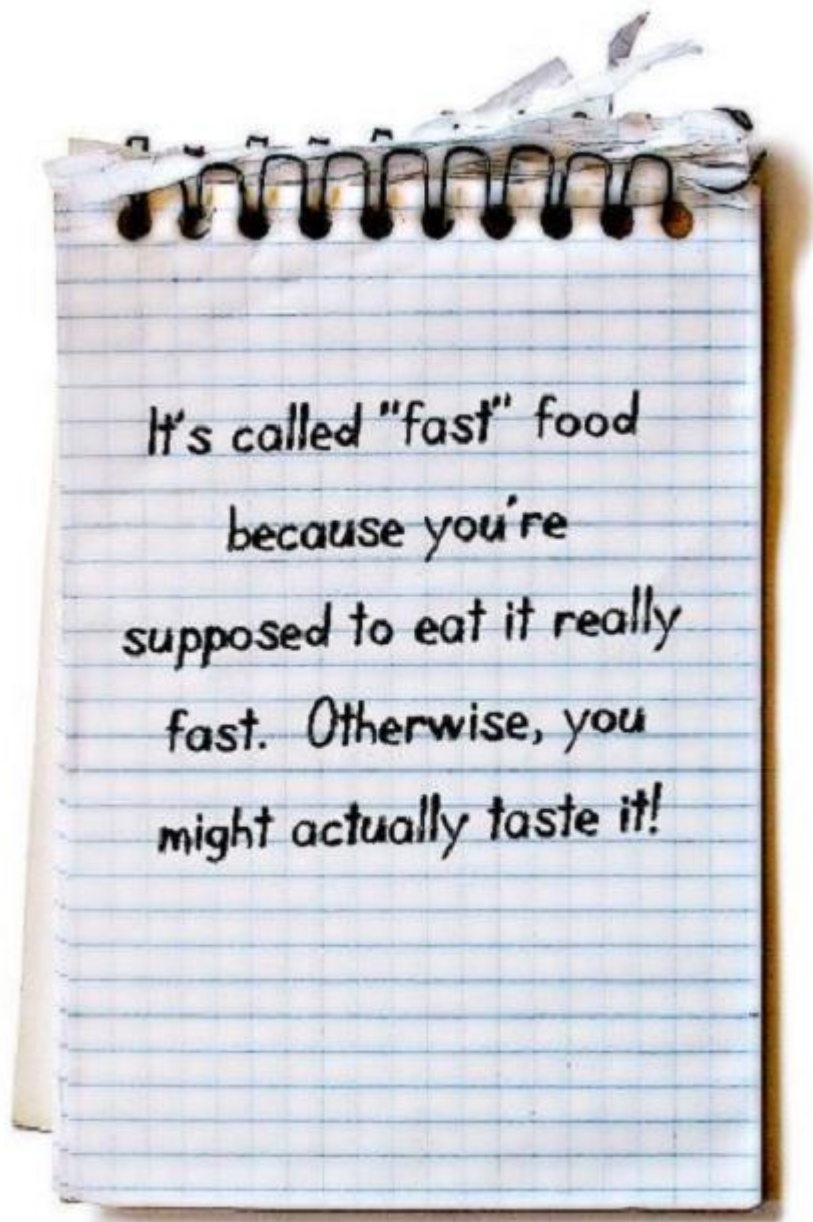


# Chapter 18

## Food webs



It's called "fast" food

because you're

supposed to eat it really

fast. Otherwise, you

might actually taste it!

# Day One:

Today, you and your child will:

1. Read the text
2. Review the text with your child
3. Complete the student worksheets
4. Collect the materials you will need for days two and three

## National Science Education Standards covered this week:

All animals depend on plants. Some animals eat plants for food. Other animals eat animals that eat the plants.

Food webs are more realistic models of how energy is passed between predators and prey in a habitat.

The balance of a habitat's carrying capacity is monitored by individuals who work in the area of conservation.

# Definitions

<b>Food web</b>	a group of food chains linked together
<b>Predators</b>	animals that eat other animals for food; also known as a carnivore
<b>Prey</b>	animals that are eaten by predators
<b>Carrying capacity</b>	a balance of predators and prey in a habitat

## Sample questions to ask your child after completing the weekly reading.

**What is another name for carnivores? Predators**

Which type of organism is usually larger...predators or prey? Most of the time, predators are much larger than prey.

**What do you think would happen if there were no predators in the environment?**

Without predators, the prey would eventually eat up all of their resources.

**What is the field of science that protects our natural resources?**

Conservation

# Answers to worksheet questions:

## Page 1:

"A food chain is a collection of many food webs joined together."

This is an incorrect statement. A food web is a collection of food chains joined together.

## Page 2:

- 4 - food web
- 1 - predators
- 2 - prey
- 3 - carrying capacity

## Page 3:

Draw a picture of a food web. Label your drawing with the following types of organisms: producer, herbivore, and carnivore.

*Answers will vary*

# Day Two:

Today, you and your child will:

1. Review Day One using the following text
2. Run the first activity this week

**The following text will give you the most important items to review for your activity today.**

The ability of an organism to blend into its surroundings is known as camouflage.

Camouflage is an effective tool for both predators and prey.

This trait helps to balance the carrying capacity within most food webs in the environment.

# Where did you go?

## Objective:

Children will explore the importance of camouflage as a form of protection as they act as predators.

## Materials:

one full piece of newspaper

several dozens of small cutouts from colored paper and from a newspaper

Data Chart (see attached)

## Procedure:

Inform the child that he/she will be acting as a predator hunting its prey. The prey will be the cutouts which will be located on top of its habitat (the full piece of newspaper).

Spread an equal amount of cutouts of each type all over the newspaper.

The child will have one minute to collect as many cutouts as possible. Only one dot can be picked up at a time.

Allow the child one minute to collect the cutouts. Have the child count each color they picked up and record this number on their chart. Put these dots back onto the newspaper.

Repeat this same procedure at least two more times.

## Explanation:

As a predator, your child probably noticed the brightest colored cutouts on the newspaper first. It is unlikely that they picked up many of the newspaper cutouts as they blended into their habitat. Being able to blend into a habitat so as not to be seen (this is known as "camouflage") gives prey an advantage over the predators. The ability to survive by hiding from predators helps to balance the carrying capacity in any food web. If too many prey exist in the food web, they are more easily found by the predators and their numbers will start to drop. If the food web can support more prey, then their camouflage will help this species to reproduce further.

# Where did you go? Data Chart

	Trial One	Trial Two	Trial Three
<b>Numbers of dots</b>			
<b>Newspaper cutouts</b>			
<b>Red</b>			
<b>Orange</b>			
<b>Yellow</b>			
<b>Green</b>			
<b>Blue</b>			
<b>Purple</b>			
<b>White</b>			
<b>Grey</b>			
<b>Black</b>			
<b>Brown</b>			

# Day Three: Lab Activity

Today, you and your child will:

1. Review Day One using the following text
2. Run the first activity this week

**The following text will give you the most important items to review for your activity today.**

The carrying capacity of any food web is a balance of the numbers of predators, prey, birth rates, death rates and several other variables.

When the birth rate of a population within a food web exceeds its death rate, the carrying capacity of the habitat may be in jeopardy.



# The stork and the grim reaper

## Objective:

Children will explore the concept of carrying capacity through a simulation where the birth rate of a species exceeds its death rate

## Materials:

empty one quart container  
old towel/paper towels  
masking tape  
bucket of water  
measuring cups (1 cup and 1/3 cup)

## Procedure:

Fill the one quart container until it is about 1/4 full, and place it on top of the towel/paper towels.

Ask your child to be the "stork" while you play the part of the "grim reaper." Inform the child that the one quart container will represent the world and the water in the bucket will represent people. The "Stork" will be adding people to the world by pouring water into the container from the bucket. The parent will act as the "Grim Reaper", who will be taking people from the world by taking water out of the container and pouring it back into the bucket.

*Inform the child that out of 1000 people in the world at this time, we can expect 22 people to have a child and 9 people to reach the end of their lives over the course of a year.*

Because of this rate, the Stork will receive a larger measuring cup because of the larger amount of water (people) that is to be added to the one quart container (the world). The Grim Reaper is not removing as many people (water) as the stork, so this person will use a smaller measuring cup.

Give the 1-cup to the Stork and the 1/3-cup to the Grim Reaper.

Take turns adding and removing water from the one quart container. For every cup-full the Stork adds, the Grim Reaper subtracts one.

Continue adding and removing water. Periodically, ask the child if they see any change in the one quart container (world)? When it becomes clear that the water level is steadily rising (which is to symbolize the growing population of people in the world), stop moving the water and explain what is happening.

**Explanation:**

Population growth occurs when a species' birth rate exceeds its death rate. Every habitat has a carrying capacity, which is a limit to the number of members of a certain species it can support. Usually we think of carrying capacity in terms of animals or plants (how many frogs can live in a pond), but it applies to humans, too. The rapid population growth of humans may exceed its carrying capacity of this planet.