

Shelby County Schools
Extended Learning Packet



Science
Grade 4

Munchtime for animals

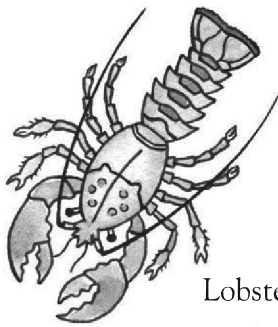


Background knowledge

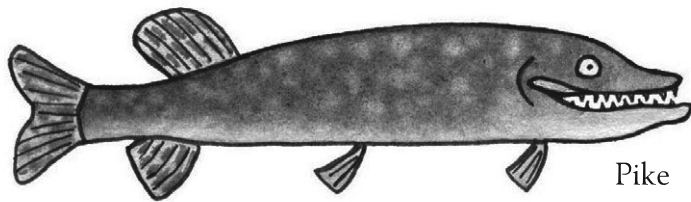
Many animals get the proteins, fats, and carbohydrates they need by eating plants. These animals are called *herbivores*. Some animals catch and eat other animals. These meat eaters are called *carnivores*. Carnivores have special features to help them catch and kill their prey. For example, hawks and owls have excellent vision that lets them see their prey from a distance.

Science activity

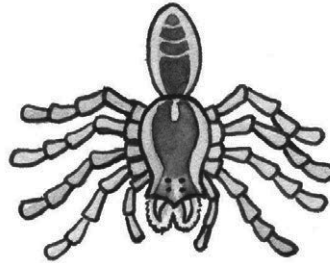
The animals below are all carnivores. Draw a ring around the parts of each animal that help it catch and kill its prey.



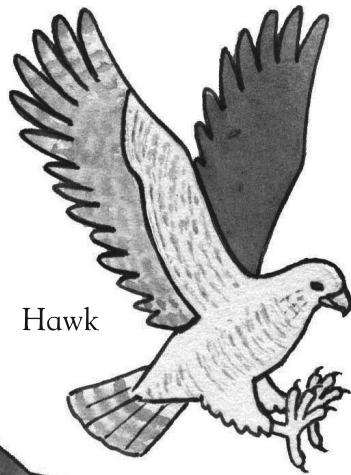
Lobster



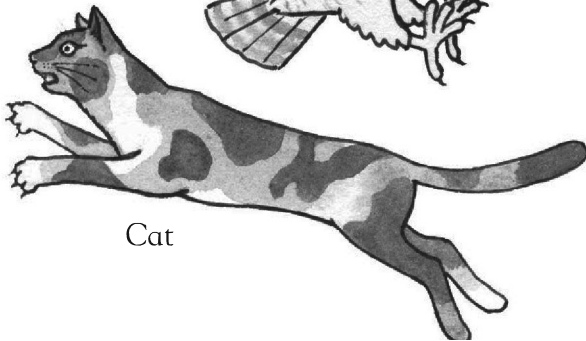
Pike



Spider



Hawk



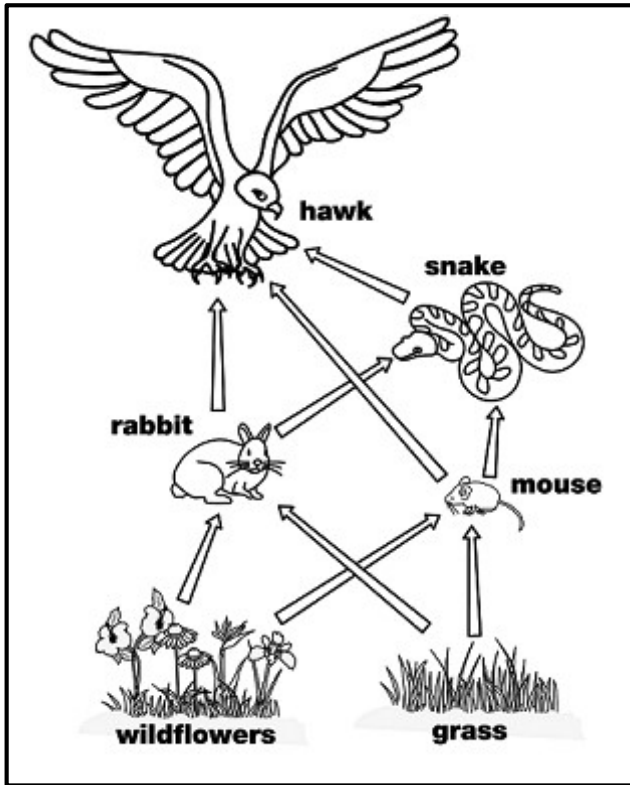
Cat

Science investigation

Make a scrapbook or poster of 10 different animals: 5 carnivores and 5 herbivores. Write what carnivores eat and how they catch their prey. Explain what herbivores eat and how they get their food, as well as who eats them! You might include pictures from magazines.

Name: _____

Food Web



A **food web** shows how energy is passed on from one living thing to the next. It shows the feeding habits of different animals that live together in an ecosystem.

In the food web pictured on the left, energy is passed from the grass to the mouse to the snake to the hawk.

Producers are living things that make their own food with sun and air. The producers are pictured at the bottom of the food web.

Consumers are living things that eat other living things.

Use the food web in the picture above to answer the questions.

1. Name the living things in the food web that are producers. _____

2. Name the living things in the food web that are consumers. _____

3. Which living things does the snake eat? _____

4. Which living things does the hawk eat? _____

5. What is eaten by the rabbit? _____

Dinnertime for animals

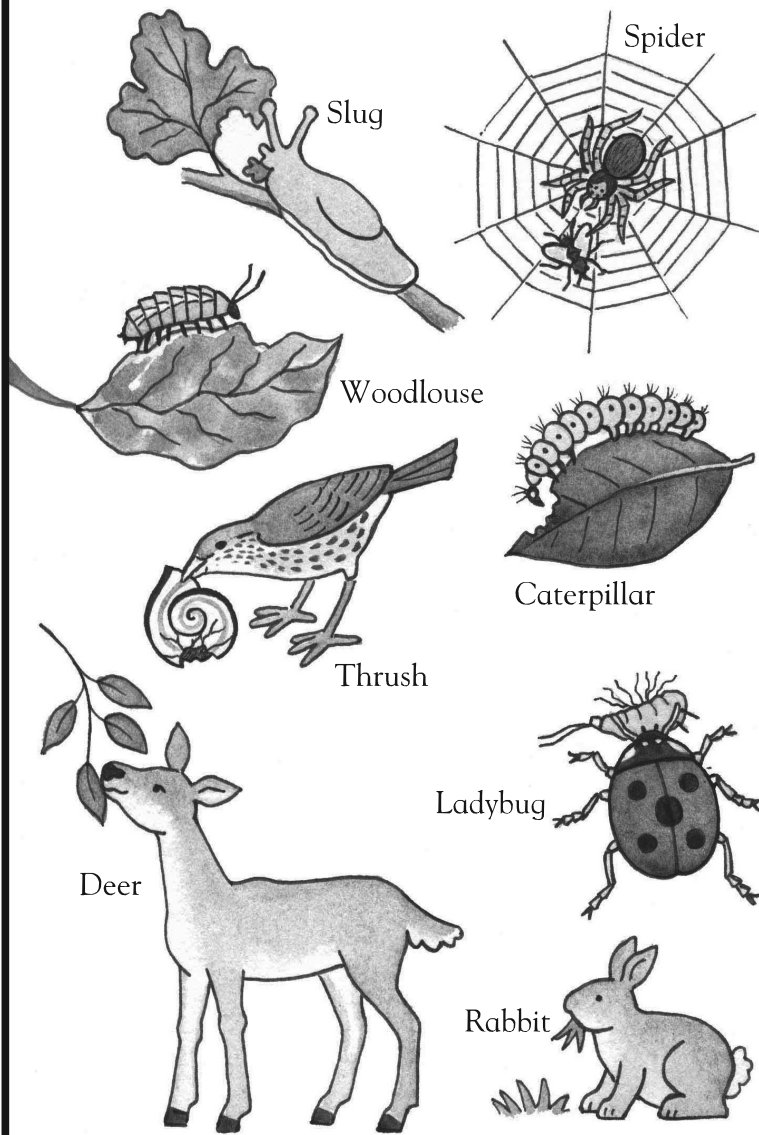


Background knowledge

When animals feel hungry, they need to eat. Food provides the animals with carbohydrates, faats, and proteins, which are important nutrients they need to grow and live. Some animals have to hunt for their food while other animals eat mostly plants. Plants can make their own food using sunlight and gases from the air and water. Animals that eat plants are called *herbivores*. Animals that eat herbivores are called *carnivores*.

Science activity

Can you spot the herbivores in this group of animals? Write their names in the box.



Herbivores

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.....

.....

.....

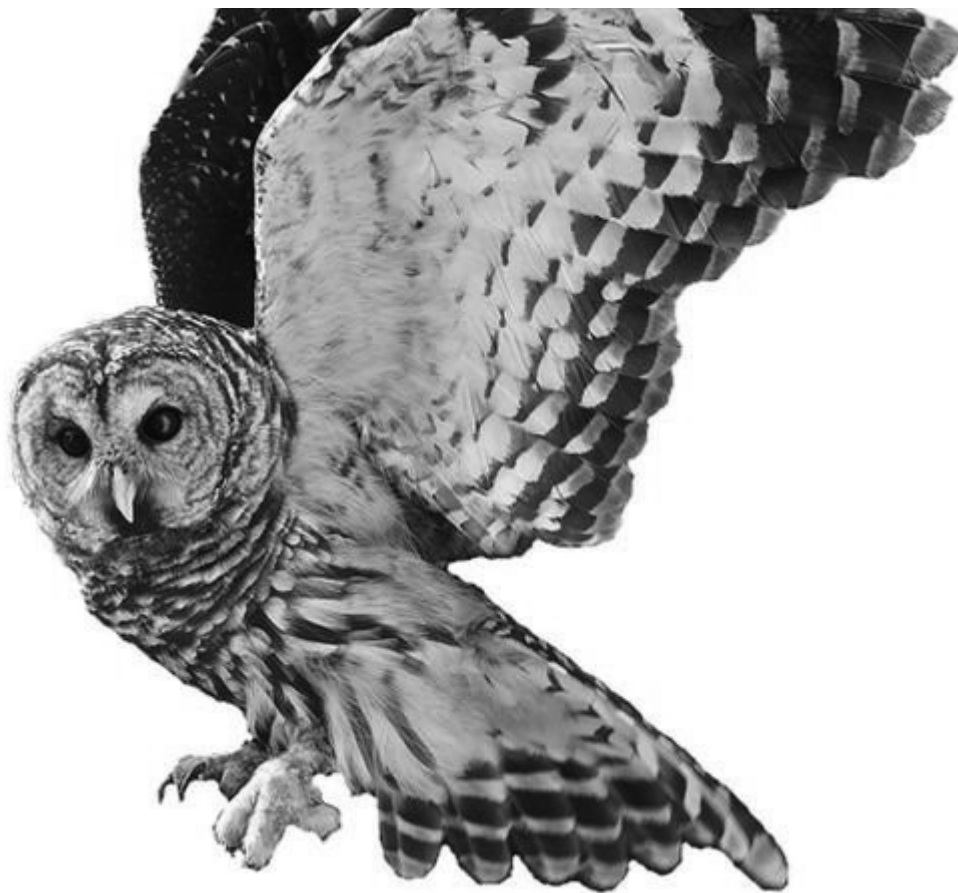
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Science investigation

Find some pictures to compare the skull and teeth of carnivores and herbivores. How do they differ? Draw a picture that compares their teeth. Make paper puppets of carnivore and herbivore dinosaurs and act out a play that shows how dinosaurs eat.

Owl Prowl

This text is provided courtesy of the National Audubon Society.



Jennifer MaHarry/Audubon Photography Awards

When you hear the word "owl," what comes to mind? Do you picture a mysterious big-eyed bird of the night? Maybe you think about a symbol of wisdom or a character in books. Clearly, people are fascinated by owls. The best way to understand them is to learn as much as possible about them.

Owls, along with hawks, eagles, and falcons, are birds of prey, or raptors—birds that hunt other animals for food. . . . [O]ne thing that's special about owls is that most of them do their hunting at night. Their special soft feathers mean they can fly silently. Their big eyes help them see in the dark. Owls have especially good hearing, too. Their ear openings are hidden under thick feathers, but they are larger than those of other birds. Even owls' saucer-shaped faces help them find prey by funneling sounds to those extra-big ear openings.



iStock

Owls are able to turn their heads as much as 270 degrees, but not a full 360 degrees. They can also turn their heads almost upside-down. This is possible because of the bone structure of the owl's neck and the arteries that feed blood to the brain. Owls have more vertebrae-the connected bones that form an animal's backbone-than any other animal.

Owls live almost all over the world. They hunt on the frozen tundra of the Arctic and in the deep forests of the tropics. Most owls are mainly brown or a mixture of brown and gray to blend in with the trees or, in the case of the Burrowing Owl, to match the color of the ground. But the Snowy Owl, which often hunts in the daytime, is an exception. Its white feathers are perfect camouflage against the snow-covered landscape in the northern regions where it lives.

Owls eat a variety of things, from snakes and frogs to skunks and rabbits to grasshoppers and other insects. Mice, shrews (small, molelike rodents), and voles (small, mouselike rodents) are . . . very popular prey. Imagine eating your own weight in mice every evening! Barn Owls polish off one-and-a-half times their weight in prey nightly, and all other owl species have similar huge appetites. That's why farmers are happy to have owls around, because those rodents can do a lot of damage to crops and animal feed. [. . .]

Name: _____ Date: _____

1. What is an owl?

- A. a rodent
- B. a mammal
- C. a bird of prey
- D. a swan

2. What does this text describe?

- A. This text describes the unique characteristics of owls and what they eat.
- B. This text describes the reason owls enjoy eating rodents.
- C. This text describes the destruction that rodents can cause on a farm.
- D. This text describes the many different kinds of birds of prey.

3. Owls have especially good hearing.

What evidence from the text supports this statement?

- A. Most owls are mainly brown or a mixture of brown and gray to blend in with the trees.
- B. Owl ear openings are hidden under thick feathers, but they are larger than those of other birds.
- C. Owls live almost all over the world. They hunt on the frozen tundra of the Arctic and in the deep forests of the tropics.
- D. Owl's special soft feathers mean they can fly silently. Their big eyes help them see in the dark.

4. Read these sentences from the text:

Most owls are mainly brown or a mixture of brown and gray to blend in with the trees or, in the case of the Burrowing Owl, to match the color of the ground.

What is the definition for how the word "blend" is used in the text above?

- A. to jumble together
- B. to stand out
- C. becoming unnoticeable
- D. to divide

5. What is the main idea of this text?

A. The snowy owl is the only owl that hunts during the daytime because its white feathers are perfect camouflage against the snow-covered landscape in the northern regions where it lives.

B. Farmers are happy to have owls around, because they can prey on the rodents that do a lot of damage to their crops and animal feed.

C. People everywhere are fascinated by owls. The best way to understand owls is to learn as much as possible about them.

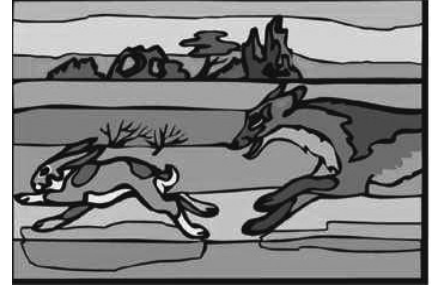
D. Even though different kinds of owls live all over the world, they all have similar unique characteristics such as hunting at night, having good hearing/eyesight, and eating their own weight in rodents everyday.

Name: _____

Predator and Prey

A **predator** is an animal that hunts other animals for food.

Prey is an animal that is hunted and eaten for food.



Identify the predator and prey for each scenario below.

1. **A snapping turtle in a pond eats a small perch.**

predator - _____ prey - _____

2. **A shrew is eaten by a barn owl.**

predator - _____ prey - _____

3. **A seagull lands near an alligator and the alligator eats it.**

predator - _____ prey - _____

4. **A gray wolf hunts and eats a rabbit.**

predator - _____ prey - _____

5. **A blue whale swallows krill.**

predator - _____ prey - _____

6. **A penguin is captured and eaten by a leopard seal.**

predator - _____ prey - _____

7. **A robin pulls an earthworm from the lawn and eats it.**

predator - _____ prey - _____



See-through materials

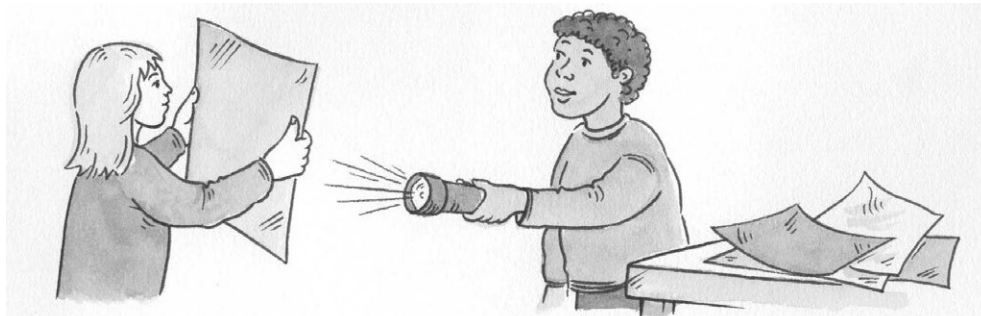
Background knowledge

Materials that you can see through, such as glass, are called *transparent* materials. They allow light to pass through them. Materials that you cannot see through, such as steel or concrete, are called *opaque*. Light cannot pass through these materials. Some materials allow some light to pass through them, but the objects on the other side do not appear very clear. These materials are called *translucent*. Wax paper is one translucent material.

Science activity

Fill in the missing words in the table.

Material	Can you see through it?	Can you see the flash-light's light through it?	Scientific description
Aluminum kitchen foil	No	.....	Opaque
Kitchen film-wrap	Yes	Yes	.....
Greaseproof paper	No	Yes	.....
Tissue paper	.....	.....	Translucent
Cardboard	No	No	.....
Polythelene bag	.....	.....	Translucent



Science investigation

⚠ **Take extra care - ask an adult to supervise you.**

First, design and conduct an experiment to see what happens to the transparency of water when it freezes. Next, design and conduct an experiment to classify materials found around your home as transparent, translucent, or opaque. Use data tables to summarize your findings.



A whale of a story



Background knowledge

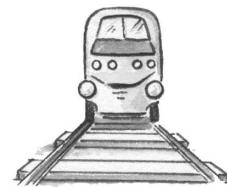
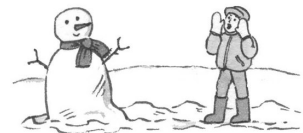
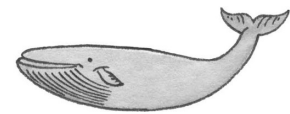
In air, sound travels more than 300 meters every second (about 750 miles per hour). In water, it travels five times faster, at about 1,500 meters every second. Whales use their vocal cords to make sounds. They also have a very good sense of hearing. The sounds that they make travel for thousands of kilometers through the oceans and can be heard by other whales far away.

Science activity

The figures in the table on the right show how many meters sound travels every second in different materials. Use the information in the table to decide which of the statements below are true and which are false. Place a check mark (✓) beside the statements that you think are true.

Material	Speed of sound (meters per second)
Cold air	330
Warm air	350
Fresh water	1,410
Ocean water	1,540
Steel	5,060
Granite rock	6,000

- Whales in the ocean hear sounds more quickly than goldfish in a lake.
- It is easier to hear sounds in winter than in summer.
- Railway workers hear the horn of an approaching express train before they hear the vibrations it makes in the steel rails.
- You hear sounds more quickly in gases than in liquids.
- It is possible to hear sounds through rocks.



Science investigation

⚠ Take extra care - ask an adult to supervise you.

Using two balloons, one filled with water and the other with air, design and conduct an experiment to see if you can hear better through air or water. Make sure the balloons are the same size.

