# SCIENCE QUEST GAZETTE

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## PROJECTS TO DO TOGETHER

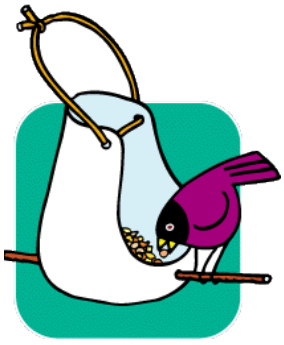
### PROJECT 1 - Feed and observe winter birds and animals

**What you need:**

- Some or all of the following: popcorn, peanuts in shells, apples, cranberries, pears, oranges, kiwi, peanut butter, suet (from butcher)
- String, needle and strong thread, scissors, knife
- Pine cone (to use with peanut butter), onion bag (to use with suet)

**What to do:**

- String the popcorn and cranberries on a long, doubled piece of thread. String the whole peanuts on another thread.
- Slice the fruit crosswise, about 1/4-1/2 inch thick. Poke a hole about 2/3 of the way across each slice, thread a 12 inch piece of string through it and tie the ends together.
- Put peanut butter or suet into the holes in a pine cone. Tie a string to it.
- Cut suet into large pieces and put it into an onion bag.
- Hang the food from trees and bushes in sheltered areas, where you can see it. Be patient. It takes time for birds and animals to find the food. Try different locations.
- Note: If you choose to begin feeding the birds regularly, try to do it throughout the winter. They start to depend on you and may have trouble finding other sources of food later in the winter.



### PROJECT 2 - Build a Bird Feeder

**What you need:**

- An empty plastic milk or water bottle, or a milk carton
- Scissors, string, bird seed

**What to do:**

- Wash the bottle or carton and rinse it well. Cut several small (2-3") holes in the sides, about 2" from the bottom. Cut or poke two small holes near the top and thread a long piece of string through them.
- Fill the bird feeder with seeds and hang from a tree or shrub. Scattering some seeds on the ground can help the birds find the feeder. Watch the birds. Be patient. Try different types of seeds and different locations. Record your observations.

### Here are some plans for you to try!

**Build A Better Birdhouse**

- http://www.sunset.com/sunset/Premium/Home/1999/03-Mar/Birdhouses0399/Birdhouses.html

**License Plate Birdhouse**

- http://www.runnerduck.com/lpbirdhouse.htm

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# HOW DO ANIMALS SPEND THE WINTER?

**As the weather gets colder, days get shorter and leaves turn color and fall off the trees. Soon, winter is here. Snow covers the ground. People live in warm houses and wear heavy coats outside. Our food comes from the grocery store. But what happens to the animals?**

## MIGRATE:

Animals do many different, amazing things to get through the winter. Some of them "migrate." This means they travel to other places where the weather is warmer or they can find food. Many birds migrate in the fall. Because the trip can be dangerous, some travel in large flocks. For example, geese fly in noisy, "V"-shaped groups. Other kinds of birds fly alone.

**How do they know when it is time to leave for the winter?** Scientists are still studying this. Many see migration as part of a yearly cycle of changes a bird goes through. The cycle is controlled by changes in the amount of daylight and the weather. Birds can fly very long distances. For example, the Arctic tern nests close to the North Pole in the summer. In autumn, it flys south all the way to Antarctica. Each spring it returns north again.

Most birds migrate shorter distances. But how do they find their way to the same place each year? Birds seem to navigate like sailors once did, using the sun, moon and stars for direction. They also seem to have a compass in their brain for using the Earth's magnetic field.

Other animals migrate, too. There are a few mammals, like some bats, caribou and elk, and whales that travel in search of food each winter. Many fish migrate. They may swim south, or move into deeper, warmer water. Insects also migrate. Some butterflies and moths fly very long distances. For example, Monarch butterflies spend the summer in Canada and the Northern U.S. They migrate as far south as Mexico for the winter. Most migrating insects go much shorter distances. Many, like termites and Japanese beetles, move downward into the soil. Earthworms also move down, some as far as six feet below the surface.

## ADAPT:

Some animals remain and stay active in the winter. They must adapt to the changing weather. Many make changes in their behavior or bodies. To keep warm, animals may grow new, thicker fur in the fall. On weasels and snowshoe rabbits, the new fur is white to help them hide in the snow.

Food is hard to find in the winter. Some animals, like squirrels, mice and beavers, gather extra food in the fall and store it to eat later. Some, like rabbits and deer, spend winter looking for moss, twigs, bark and leaves to eat. Other animals eat different kinds of food as the seasons change. The red fox eats fruit and insects in the spring, summer and fall. In the winter, it can not find these things, so instead it eats small rodents.

Animals may find winter shelter in holes in trees or logs, under rocks or leaves, or underground. Some mice even build tunnels through the snow. To try to stay warm, animals like squirrels and mice may huddle close together.

Certain spiders and insects may stay active if they live in frost-free areas and can find food to eat. There are a few insects, like the winter stone fly, crane fly, and snow fleas, that are normally active in winter. Also, some fish stay active in cold water during the winter.

## HIBERNATE:

Some animals "hibernate" for part or all of the winter. This is a special, very deep sleep. The animal's body temperature drops, and its heartbeat and breathing slow down. It uses very little energy. In the fall, these animals get ready for winter by eating extra food and storing it as body fat. They use this fat for energy while hibernating. Some also store food like nuts or acorns to eat later in the winter. Bears,