

Winter

HOW DO ANIMALS SPEND THE WINTER?

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 flies 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.

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Website: <http://210.3.43.253/~lck/science/spt0910/spt0910.htm>

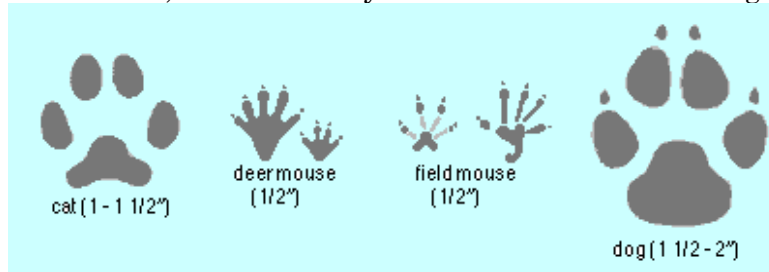
ADAPT

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, skunks, chipmunks, and some bats hibernate.

AND MORE

Cold-blooded animals like fish, frogs, snakes and turtles have no way to keep warm during the winter. Snakes and many other reptiles find shelter in holes or burrows, and spend the winter inactive, or dormant. This is similar to hibernation.

Water makes a good shelter for many animals. When the weather gets cold, they move to the bottom of lakes and ponds. There, frogs, turtles and many fish hide under rocks, logs or fallen leaves. They may even bury themselves in the mud. They become dormant. Cold water holds more oxygen than warm water, and the frogs and turtles can breath by absorbing it through their skin.

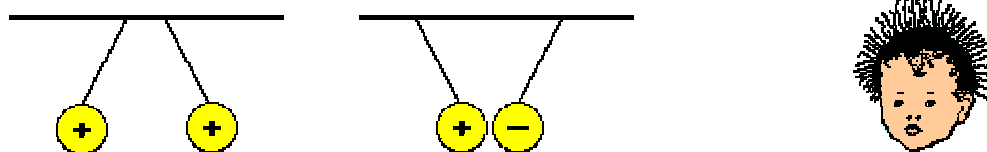
Insects look for winter shelter in holes in the ground, under the bark of trees, deep inside rotting logs or in any small crack they can find. One of the most interesting places is in a gall. A gall is a swelling on a plant. It is caused by certain insects, fungi or bacteria. They make a chemical that affects the plant's growth in a small area, forming a lump. The gall becomes its maker's home and food source.

Every type of insect has its own life cycle, which is the way it grows and changes. Different insects spend the winter in different stages of their lives. Many insects spend the winter dormant, or in "diapause." Diapause is like hibernation. It is a time when growth and development stop. The insect's heartbeat, breathing and temperature drop. Some insects spend the winter as worm-like larvae. Others spend the winter as pupae. (This is a time when insects change from one form to another.) Other insects die after laying eggs in the fall. The eggs hatch into new insects in the spring and everything begins all over again.

WHAT IS STATIC ELECTRICITY?

Everything we see is made up of tiny little parts called atoms. The atoms are made of even smaller parts. These are called protons, electrons and neutrons. They are very different from each other in many ways. One way they are different is their "charge." Protons have a positive (+) charge. Electrons have a negative (-) charge. Neutrons have no charge.

Usually, atoms have the same number of electrons and protons. Then the atom has no charge, it is "neutral." But if you rub things together, electrons can move from one atom to another. Some atoms get extra electrons. They have a negative charge. Other atoms lose electrons. They have a positive charge. When charges are separated like this, it is called static electricity. If two things have different charges, they attract, or pull towards each other. If two things have the same charge, they repel, or push away from each other.



So, why does your hair stand up after you take your hat off? When you pull your hat off, it rubs against your hair. Electrons move from your hair to the hat. Now each of the hairs has the same positive charge. Things with the same charge repel each other. So the hairs try to move away from each other. The farthest they can get is to stand up and away from all the other hairs.

If you walk across a carpet, electrons move from the rug to you. Now you have extra electrons. Touch a door knob and ZAP! The electrons move from you to the knob. You get a shock.

Lunch Time Video Shows: 12:20 p.m. @ Chem. Lab. (Room 512)

Date	Name of Program	Phy	Chem	Bio
19/1/2010 (Tue)	Architeuthis dux 大海怪-找尋巨型烏賊 (Part 1)			📁
22/1/2010 (Fri)	Architeuthis dux 大海怪-找尋巨型烏賊 (Part 2)			📁
26/1/2010 (Tue)	Space Mysteries – Comet 太空搜秘-彗星 (Part 1)	📁	📁	
29/1/2010 (Fri)	Space Mysteries – Comet 太空搜秘-彗星 (Part 2)	📁	📁	

Public Seminars

Date	Time	Name	Venue
23/1/2010 (Sat)	2:30-3:10 pm	How radar systems in Hong Kong support aviation	Science Museum
	3:10-3:50 pm	Management of arrival flights for efficient use of airspace and on-time arrivals into HK airport	
	3:50-4:30 pm	Microbiology and chemistry in sewage treatment	
17/1/2010 (Sun)	2:30-4:30 pm	科幻中的外星人與外星文明	Space Museum
24/1/2010 (Sun)	2:30-4:30 pm	科幻中的女性主義	
31/1/2010 (Sun)	2:30-4:30 pm	人類文明展望	

First come first serve! For more details, please refer to the notice board outside Chemistry Laboratory.

Topic of Science Quiz 你知道唔知道? in January

4th, 18/1-29/1: **Plants**

5th, 1/2-10/2: **Move**

Questions are posted on the notice board of Science Promotion Team near the Staff Common Room. Students can find the five questions and get the answer sheets on our board. After filling in your answers, put it into the box provided. Students who can get all the answers correct will be awarded a small gift.

Science Festival 2009-2010

Theme: MOVE

Date	Time	Event	Venue
28/1	After school 4:00 - 5:30pm	“Through the channel down the generals 過關斬將” Workshop	Chemistry Laboratory
29/1	5:30pm	Deadline of enrolling “過關斬將” competition	Notice board of Science Promotion Team
1/2 - 5/2	Opening hours of Library	Book Exhibition	School Library
1/2 - 10/2	School time	Quiz Competition on "MOVE"	Notice board of Science Promotion Team
3/2 - 5/2	Morning Assembly	Prize presentation and sharing on Science topics	Playground
3/2	Lunch time 12:20 - 12:50pm	Talk on "Space Travel"	School hall
3/2	After school 4:10 - 5:10pm	Documentary Program Watching: "Africa's Secret Seven 非洲七怪"	School hall
4/2	After school 4:00 - 5:30pm	1st round / trial of "過關斬將" competition	School hall
5/2	School Assembly	Final round of "過關斬將" competition and prize presentation	School hall

過關斬將比賽規則:

1. 器件起始時的長度、闊度及高度均不得超過 20 cm。用料不限，惟不能直接採用坊間商品及不能帶有危險性。
2. 器件必須通過以下的測試：
 - 在桌面上指定起始位置穿越一通道（長 45 cm，闊 30 cm，高 20 cm），並進入目標區（120 cm x 90 cm）。
 - 器件要推倒目標區內固定位置上的 10 個指標瓶（16 cm）。
 - 推倒指標瓶後，最後器件須在靜止區內完全靜止。
 - 器件須於一分鐘內完成從起始點運行到目標區內完全靜止的過程，超時作廢。
 - 器件可以電動或非電動，唯不得以任何遙控裝置操作或使用爆炸裝置。
 - 以器件靜止後，推倒最多指標瓶數目為優勝。如推倒指標瓶數目相同，則依次以能否在靜止區內完全靜止、器件重量較輕、及以完成時間較短者為優勝。
3. 每組可有 1-3 位成員。參賽者須於 28/1 出席工作坊暨簡介會。詳情將另行通知。
4. 科學推廣小組將保留最終決定權。

