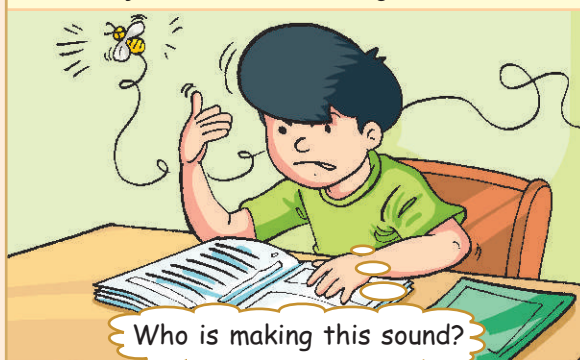


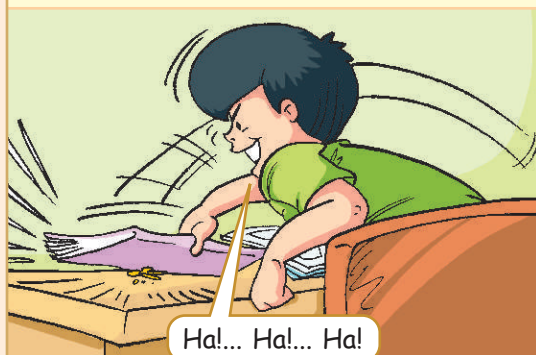
One day, Nitoo was studying in his room. Suddenly, he heard a buzzing sound.



Oh, it's you! Stop or I'll teach you a lesson.



Nitoo picked up a notebook and hit the fly with it.



He started studying again.



After some time, he saw another insect hovering around.



Nitoo tried to hit it too.



But this time, it was a wasp. It at once stung Nitoo.



Nitoo was in great pain. He ran to his elder sister Nita, crying loudly.



Stupid! That must be a wasp. What were you doing to it?

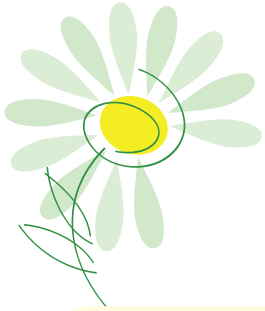


I was trying to hit it.



Now, look at your face. I hope you will never try to harm any animal in future.





## Animals: Protection and Conservation

### BEFORE WE START, LET'S CHECK

#### What you already know

Write 'T' for true statements and 'F' for false ones.

1. Many animals eat other animals. ☐
2. The survival of animals is not important for balance in nature. ☐
3. Man has never been indulged in the hunting of wild animals. ☐
4. Many animals have become extinct and many others are on the verge of extinction. ☐

#### What you will know

How do animals protect themselves from predators?



Why do some animals go for a long sleep?



Why are some animals endangered?



What are the measures for the conservation of wildlife?

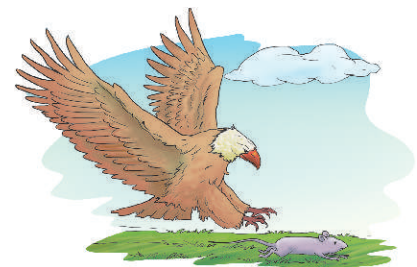
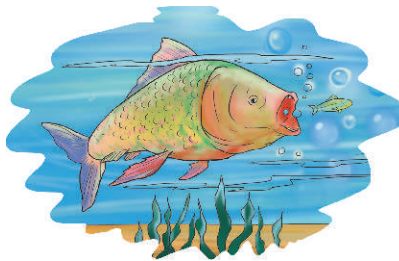
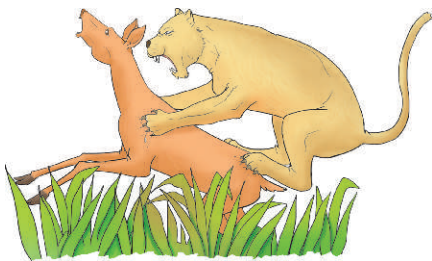


In the previous class, you have learnt how adaptation helps animals to survive. Over the years, animals have developed certain body features that help them to adjust with the environment.

For example, the thick skin of a camel protects it from the hot desert sun and the thick coat of fur on the body of a polar bear protects it from extreme cold.

### PROTECTIVE ADAPTATION OF ANIMALS

Many kinds of animals live on earth. Many of them kill other animals to eat. Generally, larger and more active animals hunt smaller and slower animals. Animals that kill and eat other animals to survive are called **predators**.



With so many predators around, an animal is never really safe. So to protect themselves, animals have developed certain features over the years. These include adaptations that change not only their bodies but also their behaviour.

Let us now read about some such adaptations.



## Size and number

Some animals like elephants, whales, bears and hippopotamuses scare away their enemies by their size.

Some animals like elephants, chimpanzees, fish, etc like to stay in groups to protect themselves. While moving in a group, elephants form a circle to protect the older and weaker members of their families as well as their young.

Penguins make their nests close to each other. They hunt for fish in **packs**. The reason is that if a predator such as a walrus decides to feed on penguins, most will survive. The walrus will be able to eat only one or two.



bear



elephants



penguins

## Use of poison and bad smell

Many small animals produce **venom** in their bodies to protect themselves. Many poisonous snakes like cobras and vipers bite their large predators and inject the venom in their body. Due to this, even the largest of predators die quickly.

Similarly, some insects like honeybees and wasps and animals like scorpions inject their venom in the bodies of their enemies by stinging.

A skunk is a small animal. It produces a chemical having a very bad odour in its body. When an enemy approaches a skunk, it turns its back, raises its tail and shoots the liquid. Besides the foul smell, the spray causes a serious pain and discomfort too.



snake



wasp



skunk

## Escaping from danger



gazelle

Many animals are able to run, swim or fly away very fast when attacked by an enemy. A deer or a gazelle is difficult to outrun even for a strong hunter like a tiger or a lion.

A mountain goat can quickly climb very steep rocks to dodge its hunters.



mountain goat

## Mimicry

Sometimes, an animal copies the appearance, actions or sounds of other animals which are similar to it in appearance but dangerous in nature or less tasty.



The tasty viceroy butterfly (left) mimics the bitter monarch butterfly (right).



A flatworm (left) mimics a sea slug (right), which gives off a smelly, poisonous chemical.



A hawk moth caterpillar (left) defends itself by mimicking a viper snake (right).

## Bluffing

Animals try to bluff other animals by doing something that isn't true.



A frilled lizard has a large, thin frill around its neck. To frighten its enemies, it unfurls the frill and hisses loudly.



When threatened, a pufferfish puffs up to twice its normal size by gulping water. This makes the sharp spines on its body to stand out.

Many animals play dead if they see no escape. It confuses their predators. Look at the following animals pretending to be dead.



possum



bat



hognose snake



lizard

## Armour



lion

Some animals have evolved certain body parts that help them to defend and hunt.

Sharp teeth and claws of lions, tigers and leopards, and the long and strong horns of wild buffaloes, deer, etc. help them in defending themselves.



wild buffalo





A tortoise is a reptile. It has a hard shell on its back. When an enemy approaches it, it pulls its head, legs and tail inside to save itself.



An armadillo is a mammal. It has bony plates that cover most of its body. It can curl up into a ball leaving no soft body parts exposed to danger.

## Camouflage

The colour, shape or markings of some animals help them to blend in with their surroundings. This is called **camouflage**.

Camouflage helps animals to escape predators by becoming harder to spot.

Some examples of colour camouflage are:



The white coat of the Arctic fox living in snowy regions.



The sand-coloured lizard living in desert.



The blue colour of the whale, living in the sea.

The stripes on a zebra, spots on a deer and the markings on the body of a chameleon help them to camouflage. A chameleon can even change its colour to merge with its surroundings.



The shape of some insects also helps them to camouflage.



The walking stick insect looks like a twig.



The walking leaf insect looks like a leaf.



The Malaysian orchid mantis looks like a part of the orchid.

## Migration

**Migration** is the movement of animals in large numbers from one place to another. Animals migrate to find warmer weather, better food supplies or a safe place to give birth to their young ones. Some migrators travel short distances while others go thousands of miles.

Migration is most common in birds. Arctic terns are small birds but they make the longest migration of any animal in the world. They travel a distance of nearly 35,000 km between the Arctic and the Antarctic twice a year.

Migratory fishes like salmon are born in rivers or streams. Young salmon then drift slowly to the sea. There they live for about six years. Then adult salmon again migrate to the river, where they were born, to lay eggs.

Locusts are harmful migratory insects that migrate in swarms. These insects settle on standing crops and destroy them.



Arctic terns



salmons



locusts

## Hibernation

**Hibernation** is some animals' way of dealing with the harshness of winter. Hibernation is a long and deep sleep that helps the animals to save energy and survive in winter without eating much.

During hibernation, an animal's body temperature drops and its heartbeat and breathing slow down so that it does not use much energy.



chipmunk

Squirrels, bats, mice, bees and chipmunks are some of the animals that hibernate.

## Aestivation

**Aestivation** is also known as summer sleep. During aestivation, animals go into a deep sleep when it gets too hot. Frogs, toads, crabs, tortoises and salamanders are some of the animals that go into aestivation.

A lungfish buries itself in the mud formed on the surface of a dried-up lake. First, it forms a **cocoon** of dried **mucus** and then a tube through which it breathes.



lung fish

## CONSERVATION OF ANIMALS

Animals play an important role in the ecosystem. Besides providing various things to us, wild animals also help in maintaining the food chain in nature.

But due to the growing impact of deforestation and hunting, their number is decreasing. Many animals have become **extinct** and many others are on the verge of extinction.

### Endangered animals

Many animals are killed indiscriminately for their valuable skins and other body parts. Due to this, their numbers dwindle considerably and they become **endangered** species.

*Shahtoosh* is a fine material fibre which is obtained from the Tibetan antelope – the chiru goat. It is woven into shawls. These shawls are very expensive. Due to its excessive hunting for *shahtoosh*, the chiru goat is an endangered species today. Now, the government has banned *shahtoosh* shawls.



chiru



mink

Mink and chinchillas are exotic animals whose fur is expensive and considered fashionable to wear. Today, their fur has also been banned. The skins of snakes and crocodiles are used for making leather products.

Elephants' tusks are used to make ivory statues and many other things. Ivory products have been banned now as elephants are killed to obtain their tusks.



elephant's tusk

The one-horned rhinoceros's horn is considered to have medicinal properties and this has led to its massive hunting. The musk deer is famous for its fragrance and is killed to obtain musk.



rhinoceros

Efforts must be made by all of us to conserve wildlife which can be done in the following ways.

### Habitat conservation

Due to the increase in human population, and increase in land use, animals have little space to live. More than half of the earth's open land surface has been occupied by man. Fast deforestation is leading to the extinction of animals.

Animals cannot survive outside their natural habitats. Preserving their habitats is essential for preserving biodiversity.



## Hunting prohibition

In India, wild animals are protected under the Wildlife Protection Act, 1972.

According to the act, hunting, trapping or capturing any wild animal is a punishable offence. It is unlawful to trade any wild animal or its body parts. So the export of skins of snakes, tigers, panthers, crocodiles, etc., horns of rhinoceros and tusks of elephants is prohibited.

## Establishment of protected areas

The Wildlife Protection Act of 1972 marks the beginning of **national parks**, forest reserves and sanctuaries.

They are reserves of land owned by the government and protected from most human development. Gir National Park in Gujarat is the only existing habitat for Asiatic lions in India.

The Kaziranga Sanctuary in Assam is another remarkable example of saving the endangered rhinoceros. Wild elephants are conserved in Periyar Sanctuary located in Kerala and the Kashmir stag is conserved in Dachigam National Park.

## Projects

To create wildlife awareness among people, the government has started various national projects.

**Project Tiger:** Launched on 1st April, 1973, this project aims at the conservation of the tiger in specially constituted tiger reserves in various regions all over India.

**Project Elephant:** It was launched in February 1992. The project, involving 25 elephant reserves, is being implemented in 13 states and union territories in India.

**India Rhino Vision (IRV) 2020:** It aims at protecting rhinoceros. They have been hunted for a long time for their horns used in traditional medicines. This project aims to increase the population of one-horned rhinoceros to 3,000 by the year 2020.



tusks of elephants



Gir National Park



Kaziranga Sanctuary



Project Tiger: a poster made by some children



a poster featuring IRV 2020



## Words to Remember

predator	– an animal that kills and eats other animals
pack	– a group of penguins
venom	– poison produced by some animals and injected into other animals' bodies by biting or stinging
mimicry	– the act of copying appearance, actions or sounds of an animal by another similar animal
camouflage	– colouring or other appearance that enables an animal to blend in with its surroundings
migration	– a mass movement of animals from one place to another
hibernation	– passing the winter in a sleeping or inactive condition by some animals
aestivation	– passing the summer in a sleeping or inactive condition by some animals
cocoon	– a protective covering
mucus	– a gummy substance found in plants
extinct	– no longer in existence
endangered	– animals that may soon get extinct because there are very few of them left now
national park	– an area protected by the government for the preservation of wildlife

## Points to Recall

- ✿ Over the years, animals have developed many protective adaptations.
- ✿ Some animals live and walk around in large groups.
- ✿ Some animals use poison and a bad smell against their enemies.
- ✿ Some animals use their strong legs and horns to dodge predators.
- ✿ Some animals mimic other animals or bluff their enemies to confuse them.
- ✿ Some animals use their strong claws, teeth, outer body parts to attack enemies or defend themselves.
- ✿ The colour, shape and markings of some animals help them to blend in with their surroundings.
- ✿ Some animals migrate to far away places which are safer and warmer and have a better supply of food.
- ✿ Some animals go for a long sleep during winter or summer.
- ✿ Due to excessive deforestation and hunting, many animals have become extinct and many are endangered.
- ✿ The government has taken many measures for the conservation of animals.

## Exercises

### A. Tick (✓) the correct option.

- Which of the following animals sprays a liquid on its enemy?  
 (a) scorpion ☐ (b) skunk ☐ (c) eel ☐ (d) sea slug ☐
- Which of the following animals plays dead if it sees no escape?  
 (a) Arctic fox ☐ (b) hognose snake ☐ (c) armadillo ☐ (d) mountain goat ☐
- Which of the following animals does not use camouflage to protect itself?  
 (a) zebra ☐ (b) chameleon ☐ (c) pufferfish ☐ (d) Arctic fox ☐
- Which of the following animals hibernates?  
 (a) chipmunk ☐ (b) lungfish ☐ (c) crab ☐ (d) salmon ☐
- Which of the following animals is endangered?  
 (a) squirrel ☐ (b) locust ☐ (c) Arctic tern ☐ (d) chiru ☐

**B. Write 'T' for true statements and 'F' for false ones.**

1. Predators are generally larger than their prey.
2. A hawk moth caterpillar defends itself by mimicking a sea slug.
3. A chameleon can change its colour to merge with its surroundings.
4. Shahtoosh is obtained from the mountain goat.
5. In India, the Wildlife Protection Act was introduced in 1992.

**C. Answer in one or two words only.**

1. Which animal, sensing a danger, curls up its body into a ball?
2. Name the animal which makes the longest migration.
3. What do we call a long summer sleep?
4. Name the deer famous for its fragrance.
5. Name the sanctuary in Assam famous for rhinoceros.

**D. Answer in one sentence only.**

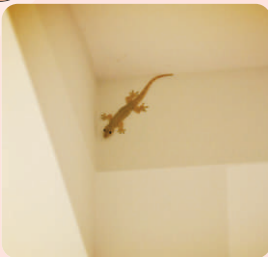
1. Why do penguins hunt for fish in packs?
2. Why does the viceroy butterfly mimic the monarch butterfly?
3. Why are locusts harmful migratory insects?
4. Why do some animals hibernate?
5. What is unique about Gir National Park?

**E. Answer in few sentences each.**

1. How does a frilled lizard bluff its enemy?
2. What is camouflage? Explain with examples.
3. Explain the migratory behaviour of salmon.
4. Differentiate between hibernation and aestivation.
5. What do you know about the IRV 2020?



**BRAINSTORM**



1. Why are lizards usually not seen during winter?
2. Which animal does not belong to the group? Also state the reason.
  - (a) mink, chinchilla, elephant, chiru
  - (b) tortoise, armadillo, bat, whale
  - (c) snake, lizard, scorpion, wasp





## TELL YOUR TEACHER

Like us, animals are also living beings. They also have the right to live in this world. It is our duty to protect them. Read the following and tell your teacher what right or wrong thing each child is doing.

- Pinky lives in London. She has come to India to meet her cousins. Her aunt wants to buy a mink coat for her. But Pinky is refusing.
- While playing with his friends on the sea beach, Surjeet suddenly sees a turtle of a rare species near the coast. Surjeet catches the turtle and puts it in his bag.

## FIND OUT



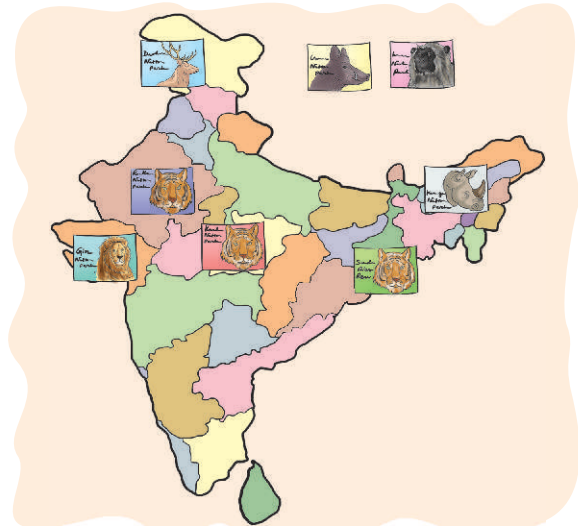
What is the name of the organisation whose logo is shown here? What is its mission?



Migratory birds like ducks and geese, often fly in V-shaped formations. Why?

## Project

- Collect the pictures of the following animals: tiger, Asiatic lion, Kashmir stag, rhinoceros, langur and wild boar.
- Now find the name of the national park or sanctuary famous for each of these animals.
- Take some colourful slips, write the names of the national parks and paste the pictures of related animals on them.
- Take a map of India. Paste these slips on the states where the national parks are located.
- Present it to your teacher.



## Wordsearch

The names of 15 animals about which you have learnt in this chapter are hidden in this wordsearch. Find them and write them here.

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

C	H	I	R	U	A	W	G	O	A	S
P	C	H	I	M	P	A	N	Z	E	E
L	H	L	B	A	D	L	I	O	G	C
U	A	E	C	O	B	R	A	M	A	H
N	M	O	R	S	K	U	N	K	Z	I
G	E	P	O	T	P	S	R	T	E	P
F	L	A	T	W	O	R	M	I	L	M
I	E	R	D	F	S	D	U	G	L	U
S	O	D	I	I	S	O	N	E	E	N
H	N	K	L	S	U	B	C	R	C	K
W	A	S	P	K	M	I	N	K	S	P