



## INDIAN SCHOOL AL WADI AL KABIR



<b>Class: VII</b>	<b>DEPARTMENT OF SCIENCE 2023-24</b>	<b>Date: 16/01/2024</b>
<b>HANDOUT</b>	<b>Topic: WEATHER, CLIMATE AND ADAPTATIONS OF ANIMALS TO CLIMATE</b>	<b>Note: A4 FILE FORMAT</b>
<b>Name of the student:</b>	<b>Class &amp; Section:</b>	<b>Roll no.</b>

**Weather:** The day-to-day condition of the atmosphere at a place with respect to the temperature, humidity, rainfall, wind speed etc and time is called weather.

**Climate:** The average weather condition of a place over a long period is called climate.

### **Difference between weather and climate:**

<b>Weather</b>	<b>Climate</b>
Weather is the atmospheric condition of a place on a particular day.	Climate is the average weather condition of a place over a long period.
Weather changes every day and may change several times a day.	Climate generally remains unchanged for a few days.
Weather conditions generally depend on the temperature, humidity and rainfall of a place. These factors are known as elements of weather.	The climate of a place generally depends on altitude, latitude and distance from the sea and wind.

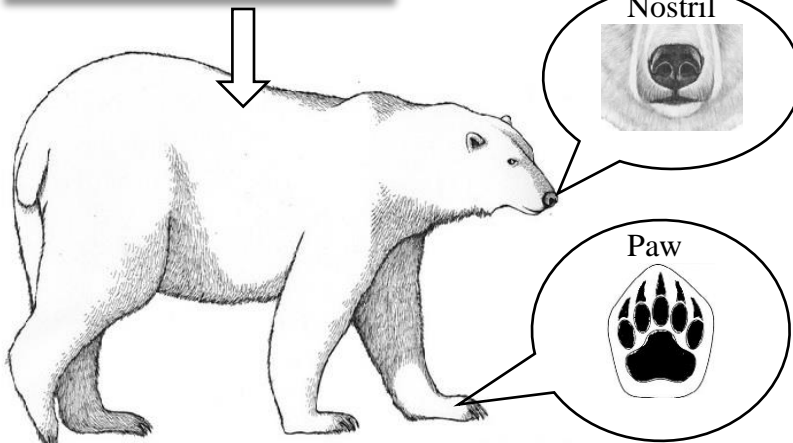
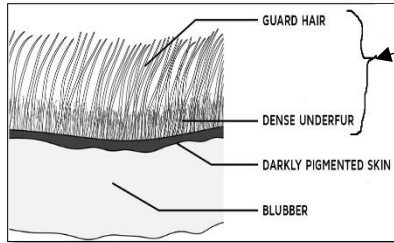
### **Adaptation-**

Features and habits displayed by an organism that help it to live and reproduce successfully in a particular environment.

### **POLAR REGION**

The Polar Regions have extremely cold climatic conditions. These regions are covered with snow for most of the year. In winter, the temperature can dip to as low as  $-37^{\circ}\text{C}$ .

## Adaptations in Polar Bear



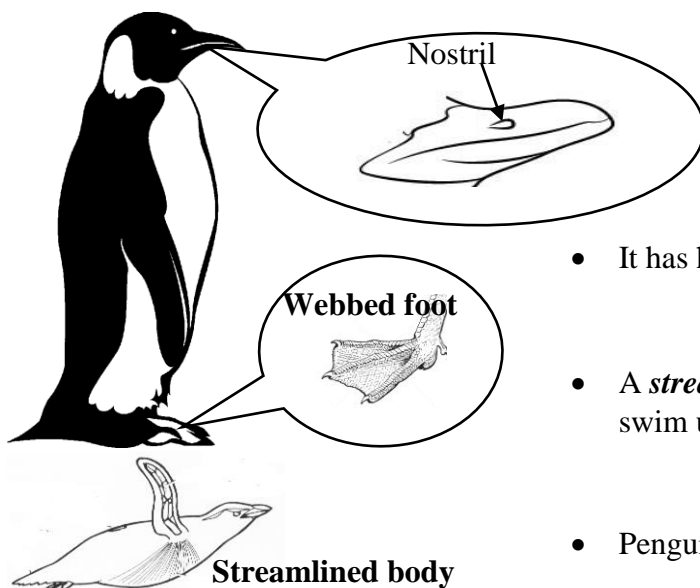
- Polar bears protect themselves with the thick white fur on their bodies.
- The fur provides warmth and also helps to **camouflage** with the snow. It also helps them to catch their prey.
- Thick layer of fat is present under its skin which acts like an **insulator**.

- The polar bear often goes for a swim to cool off on warm days.
- The polar bear can keep its **nostrils** closed for a very long time while swimming.
- The polar bear has strong sense of smell and can catch its prey's smell from as far as one kilometer.

- It has **wide and large paws** that help in swimming and walking on snow.

## Adaptations in Penguins

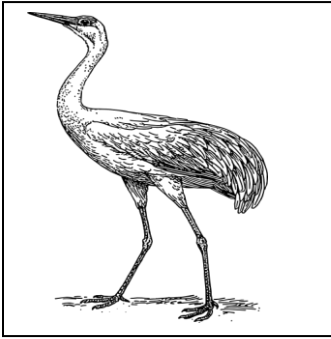
- The penguin has thick layers of stiff and densely packed feathers that block the cold Antarctic waters from reaching its skin while swimming.
- A thick layer of fat is present under its skin to keep it warm.



- It has special nasal passage that prevents loss of heat during exhalation.

- It has heavy solid bones and hence cannot fly.
- A **stream lined body** and webbed feet help the penguin to swim under water.
- Penguins often huddle together to conserve heat.

### Adaptations in Siberian crane



- They undergo seasonal journey from colder to warmer place in order to cope up with cold weather and shortage of food supply during winter months. This seasonal journey is called **migration**.
- They can accumulate fat as the source of energy.
- They fly in flocks to reduce energy loss and to avoid predators.
- They undergo a process of shedding of feathers after wear and tear once or twice a year.

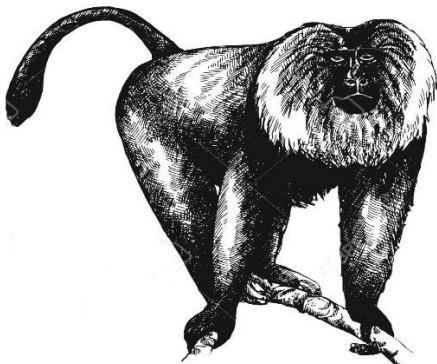
### Migratory birds



- Birds must remain warm to survive, so they migrate to warmer regions when winter sets in. They come back after the winter is over.
- Some birds travel 15000km to escape extreme climatic conditions.
- They fly high where the wind flow is helpful. They have a built-in sense of direction.
- They are guided by the sun during the day and stars at night.
- Some birds use landmarks to guide them.
- Some birds use magnetic field of earth to find direction.

## **TROPICAL RAINFOREST**

The tropical rainforest has a warm and wet climate because of its location around the equator. The summer temperature can cross 40°C and in winter, the minimum temperature does not go below 15°C. The tropical rainforest gets plenty of rainfall. Because of the highly favourable climatic conditions in tropical rainforests, wide varieties of flora and fauna are found here. The days and nights are almost equal in length throughout the year.

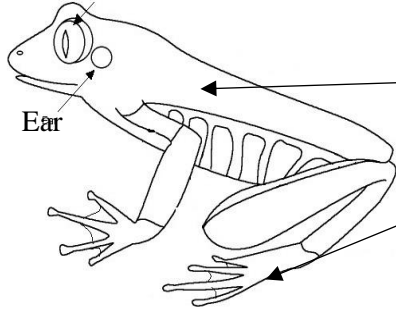


### Adaptations in Lion-tailed Macaque

- Lion- tailed macaque has a characteristic silver white mane around the face.
- It feeds on fruits, seeds, flowers, leaves and some insects.
- It is adapted to grasp the branches with its hand and long muscular tail.

### Adaptations in Red-eyed Frog

- **Large red eyes** with silt-like black pupil scares away predators.



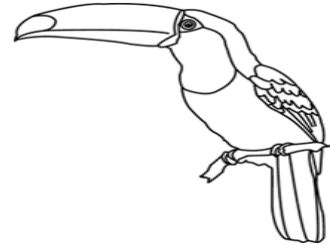
- The red-eyed tree frogs live on treetops, branches and leaves
- It is nocturnal animal and sleeps during the day underside large tree leaves.

**Bright green skin** with blue and yellow markings, helps in camouflaging.

**Feet have sticky pads** on the feet to help stick to the trees. It has powerful legs.

### Adaptations in Toucan

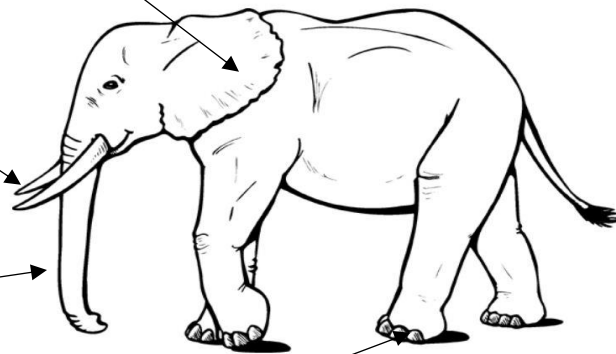
- The toucan has a big, strong and sharp beak to squash many kinds of fruits and berries found on trees.
- It also feeds on small birds and lizards using its beak and narrow leather-like tongue.



### Adaptations in Asian Elephant

Elephants feed on large amounts of food.

- **Large ears** with keen sense of hearing, help them to lose heat from the body to keep themselves cool.
- **Tusks** are modified teeth and are used to tear the barks of trees, which is their favourite food.
- Their upper lip is fused with the nose and is modified in the form of a long **trunk**, which is used for breathing, smelling, feeding, drinking, lifting, grasping and defense.
- **Unique foot** structure, which helps them to walk in uneven surfaces and swampy ground.



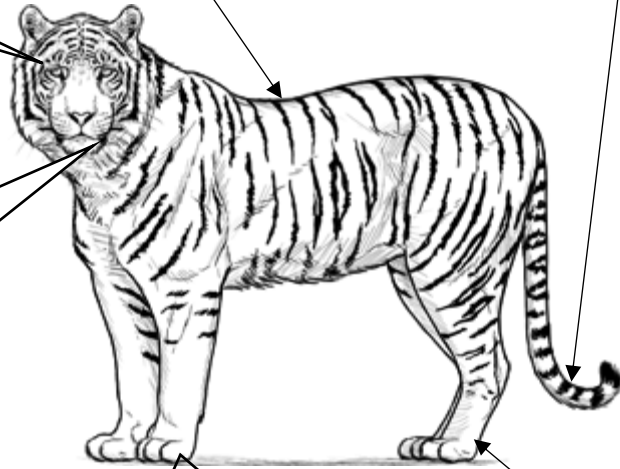
**Adaptations in Big cats (Lions and Tigers)**



Eyes in the front of the head, allows better perception while hunting

Stripes enables camouflage into the wilderness

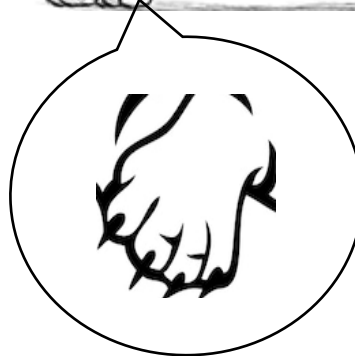
Long, sturdy tail enables balance



Strong jaws help them to consume bigger prey.

Canines to tear flesh of prey

Long legs aid in jumping



Strong, retractable claws to hold prey

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