

**SUBJECT:- SCIENCE**

**CLASS:- 4<sup>th</sup>**

**SOLVED ASSIGNMENT**

**FA-1& FA-2**



| EXAM | NAME OF CHAPTER  |
|------|--|
| FA-1 | 1. Plants: preparing and storing food<br>2. Plants: living and surviving |
| FA-2 | 1. Animals: how life goes on<br>2. Animals: living and surviving         |

**NOTE:- Maintain interleaf copy for science.**

**Always Draw/Paste on the left side of the notebook**

## CHAPTER NO-1

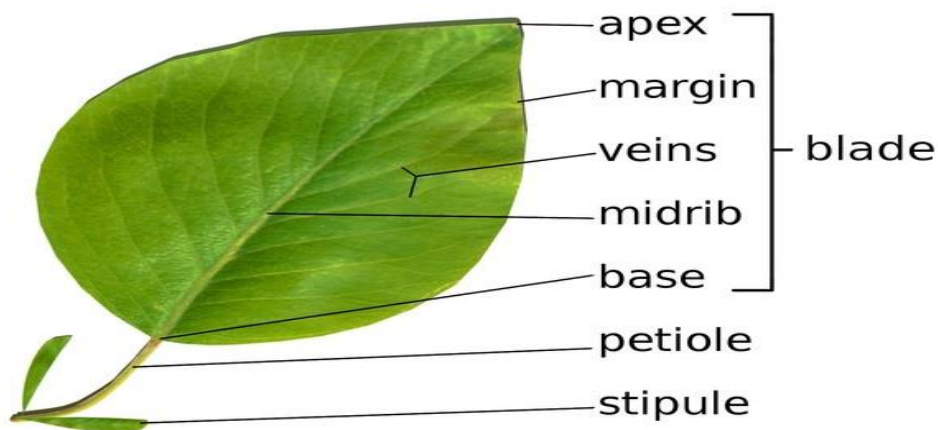
### Plants: Preparing and storing food

#### LEARNING OBJECTIVES

1. Describe the parts of a leaf.
2. Describe how green leaves produce food
3. Knowing about some unusual plants.
4. Describe the interdependence between plants and animals.

#### THINGS TO REMEMBER

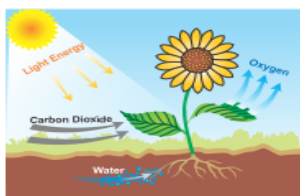
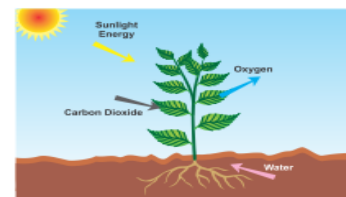
##### 1. Parts of a leaf



##### 2. Functions of a leaf

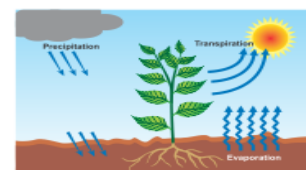
###### **Functions of leaves**

1. **Manufacturing food** – Leaf is called the kitchen of the plant. It prepares food using carbon dioxide and water, in presence of chlorophyll and sunlight. This process is called **photosynthesis**.



2. **Exchange of gases** – Leaves have openings called **stomata**, which helps in exchange of gases. During day they take in carbon dioxide and give out oxygen for photosynthesis. During night, they take in oxygen and gives out carbon dioxide for respiration.

3. **Transpiration** – The loss of water through stomata. It helps in cooling and absorption of water and minerals.



3. How do plants make their food?

### **What is photosynthesis?**

- Plants make their own food by **photosynthesis**. This process is a chemical reaction that uses light energy.



- The word photosynthesis comes from the Greek language:

“**photo**” means “light”

“**synthesis**” means “putting together”

Photosynthesis just means “putting together with light”.  
What do green plants “put together” to make their food?

4. Food prepared by plants is present in the form of simple sugar that is glucose. They use it to obtain energy for the growth and development of plants while extra glucose is stored as starch in the different parts of the plants.

5. Unusual plants

- Non- green plants
- Insectivorous plants

6. Relation between Plants and Animals

## **INTERDEPENDENCE**

Animals and plants could not survive in the desert without each other. The relationship between plants and animals is one of interdependence. Animals seek food and shelter through the desert plants and plants need animals to help them pollinate and grow flowers. According to scientist, animals are used in both fertilizing and spreading plant seed throughout the desert. These animals help to maintain diverse plant life within the desert.

**Note: Read the chapter thoroughly and do the bookwork by yourself.**

### **Solved question answers**

#### **Answer the following questions**

#### **Short Answer Questions**

Q1. Provide the names of the different parts of a leaf?

Ans- The names of the different parts of a leaf are

1. Leaf blade or lamina
2. Apex
3. Petiole
4. Mid rib
5. Side veins

Q2. What is chlorophyll? Explain its significance in plants?

Ans- Chlorophyll is a substance which makes a leaf appears green. It further helps green leaves to make food for the plant.

Q3. Define the term 'photosynthesis'?

Ans- The process by which green plants make their own food is called photosynthesis.

Q4. What are insectivorous plants?

Ans- Insectivorous plants are those plants which derive their food by trapping and consuming insects.

Eg- Venus flytrap, pitcher plant and sundews.

Q5. What are fungi? Give two examples?

Ans- Fungi are the non-green plants that cannot produce food on their own and are entirely depend on dead and decaying plants and animals

Eg- Moulds and mushrooms.

#### **Long Type Questions**

Q1. Write short note on functions of a leaf?

Ans- Functions of a leaf are-

1. It prepares food for the plant
2. It helps in the transpiration of water.
3. It helps a plant to perform gaseous exchange of carbon dioxide and oxygen through stomata.

Q2. What are the functions of stomata?

Ans- The functions of stomata are-

1. It helps gaseous exchanges of carbon dioxide and oxygen.
2. It also helps in the process of transpiration i.e. losing water in the form of vapours.

Q3. Explain the process by which leaves make food for plants?

Ans- Green leaves use sunlight to prepare their food from water and carbon dioxide. Since the entire process takes place in the presence of the sunlight, it is called photosynthesis, (photo= light, synthesis= putting all together).

Q4. Carbon dioxide is necessary for the plants to prepare food. Prove this statement with the help of an example?

Ans- Do it yourself.

Q5. Describe how plants use the food made by leaves? What happens to the extra food?

Ans- Plants use the food to obtain energy for the growth and development of plants while extra glucose is stored as starch in the different parts of the plants.

This starch stored in them is used as food sources for humans and animals.

Q6. Explain how a pitcher plant obtains its food?

Ans- In a pitcher plant, the leaf is shaped like a pitcher with a small lid. The pitcher of the plant has a deep cavity that is filled with a digestive fluid. Insects such as flies get attracted to the brightly coloured pitcher and sit on it. As soon as the lid of the pitcher closes, the insect is trapped.

Q7. How are plants and animals interdependent on each other? Justify this statement with the help of an example?

Ans- Do it yourself.

## CHAPTER NO-2

### Plants: living and surviving

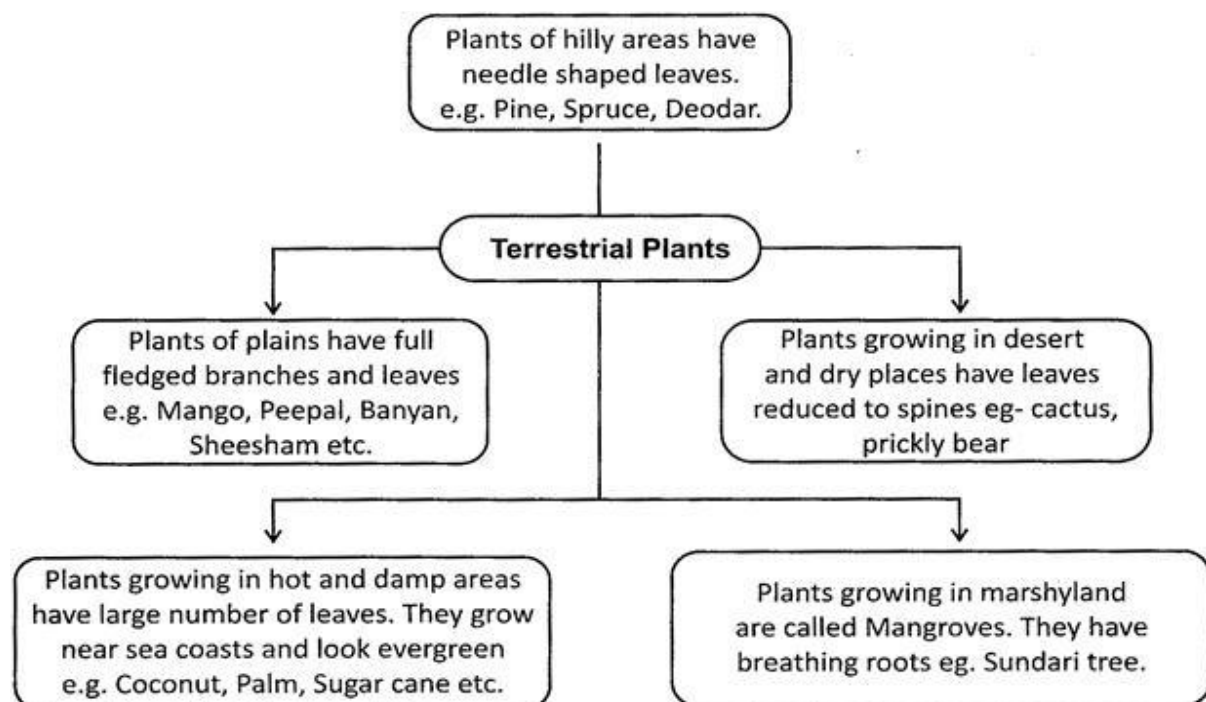
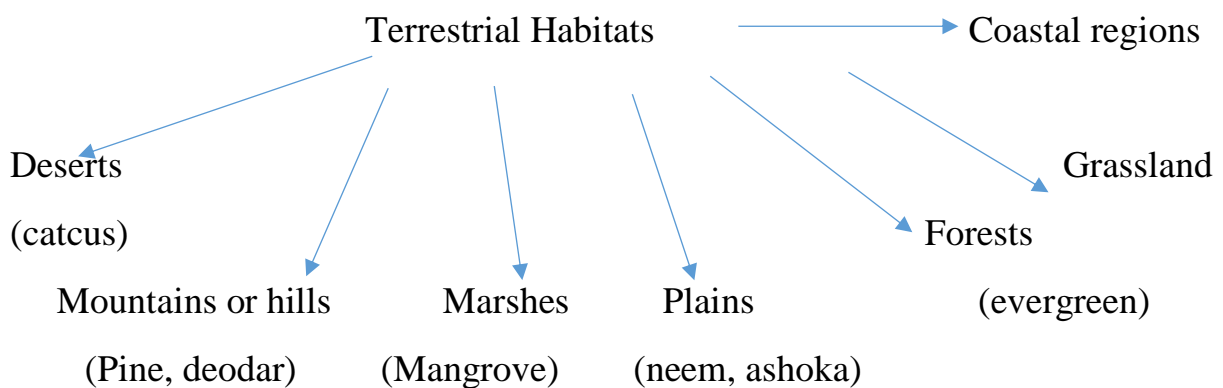
#### LEARNING OBJECTIVES

**1. Describe the need for and importance of adaptation in plants.**

**2. Classify plants according to their habitat**

#### THINGS TO REMEMBER

1. Adaptations in Plants

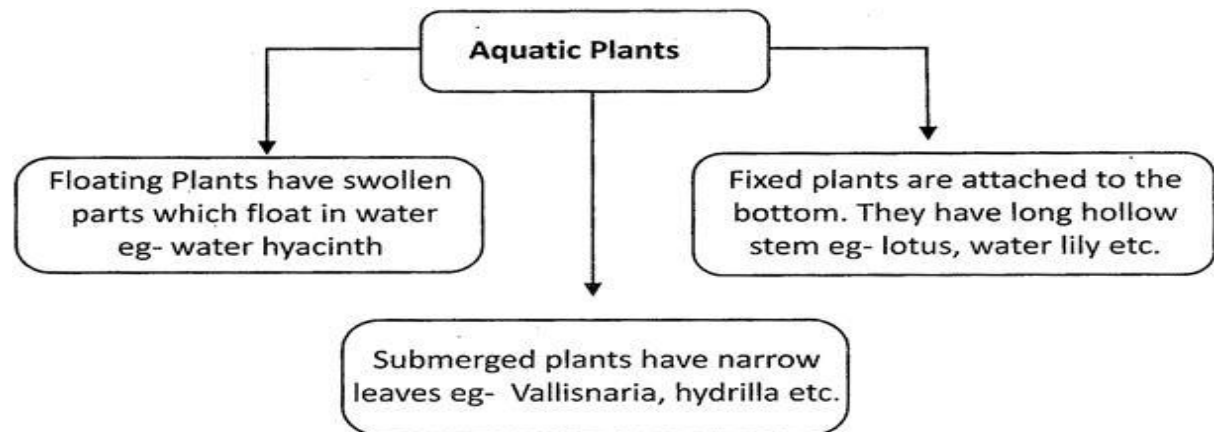


## 2. Aquatic Plants

### 1. Floating Plants

### 2. Fixed Plants

### 3. Underwater Plants



## 3. Plants of the grass family



Cereals, Rice, corn, millet etc.

## 4. Some unusual plants

- Non- green plants
- Insectivorous plants

## 5. Rainforests



Rainforests are forests that receive high rainfall of at least 80 inches (160-660 centimetres) per year.

**Note: Read the chapter thoroughly and do the bookwork by yourself.**

**Solved question answers**

**Answer the following questions**

**Short Answer Questions**

Q1. Define the term habitat. Name the different land habitats?

Ans- The environment in which a plant grows is referred to as its habitat. Deserts, forests, coastal and mountain regions are all land habitat.

Q2. What are terrestrial plants?

Ans- Plants that grow on land are called terrestrial plants.

Q3. What is transpiration?

Ans- Transpiration is the process of losing water in the form of vapours through the stomata of the leaves.

Q4. How are plants growing in plains different from plants growing on mountains?

Ans-

| Plants growing in plains                                    | Plants growing on mountains                       |
|---|---|
| They grow in moderate temperature.                          | They grow in extremely cold environment.          |
| They have more space to spread of their branches and trunk. | They are tall and have shape like that of a cone. |

Q5. Provide two examples each of evergreen trees, deciduous trees and aquatic plants?

Ans – Do it yourself.

**Long Type Questions**

Q1. What are the two adaptations needed by cactus plants to survive in deserts?

Ans- The two adaptations needed by cactus plants are-

1. It stores water in its thick, green and fleshy stems. It uses that stored water to survive when there is no rain.



2. The leaves of a cactus plant are modified into thin, sharp spines. These spines reduce the loss of water through transpiration.

Q2. Describe with an example the kind of plants that can survive in marshy areas?

Ans- Plants like mangroves are found in marshy areas. As the soil in marshy area is generally waterlogged, the roots of mangrove tree grow above the soil to take in air to breathe and survive.

Q3. Discuss the adaptations present in the fixed aquatic plants?

Ans- The adaptations in the fixed aquatic plants are-

1. They have thin, hollow and flexible stems that help the plants to stay afloat and bend with the flow of water.
2. They have flat and broad leaves with a waxy coating on the surface to prevent.
3. They have stomata present on the upper surface of the leaves.
4. They have flat and broad leaves with a waxy coating on the surface to prevent them from rotting and get sufficient air and sunlight.

Q4. What are rainforests? In India, where can we find these forests?

Ans- Rainforests are forests that receive high rainfall. In India, the rainforests are found in the areas of Arunachal Pradesh, Assam, Meghalaya, Nagaland, Tripura, West Bengal and Andaman and Nicobar islands.

Q5. What are grasslands? Explain why grasslands are suitable for farming?

Ans- Grasslands are large areas of land covered with grasses and wild flowers. Trees and large shrubs are absent there. The roots of grasses and small plants bind the soil making it rich and suitable for farming.

## **CHAPTER NO-3**

### **Animals: How life goes on**

#### **LEARNING OBJECTIVES**

**1. Explain the need of reproduction in animals.**

**2. Recognise and recall various ways in which animals reproduce.**

### 3. Describe various stages of an Animal's life cycle.


#### THINGS TO REMEMBER

1.

**WHY DO WE NEED THE PROCESS OF REPRODUCTION ?**

- Each and every organism can live only for a certain period of time.
- The period from birth to the natural death of an organism represents its **life span**.
- In order **to maintain continuity of life** , reproduction becomes essential .

Reproduction enables the continuity of the species, generation after generation.



2. Animals reproduce in these two ways:

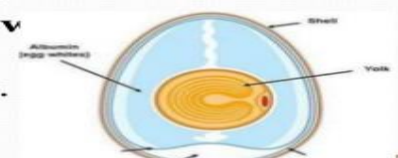
- By giving birth to their young ones- humans, cows
- By laying eggs- birds, reptiles.

3. Animals that lays egg

- Parts of an egg

### Part of an egg

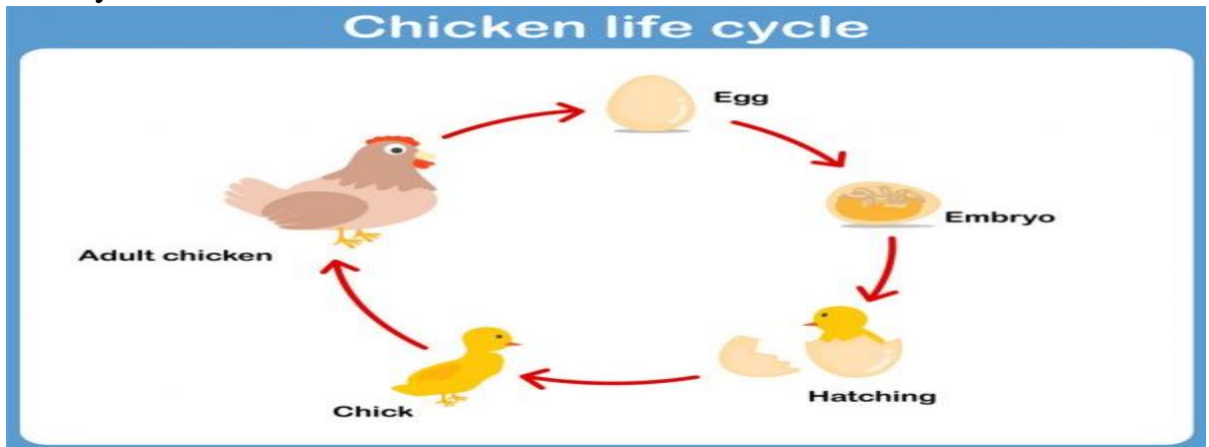
- An egg has a thin protective shell called “**Egg Shell**”.
- Within the egg shell is a white jelly like substance called the **albumen**, which is rich in proteins.
- The yellow inner part of the egg is the **yolk** and it is rich in fats, vitamins and minerals.
- The yolk contains food for the **grov** the **embryo**.
- The embryo develops into a **chick**.



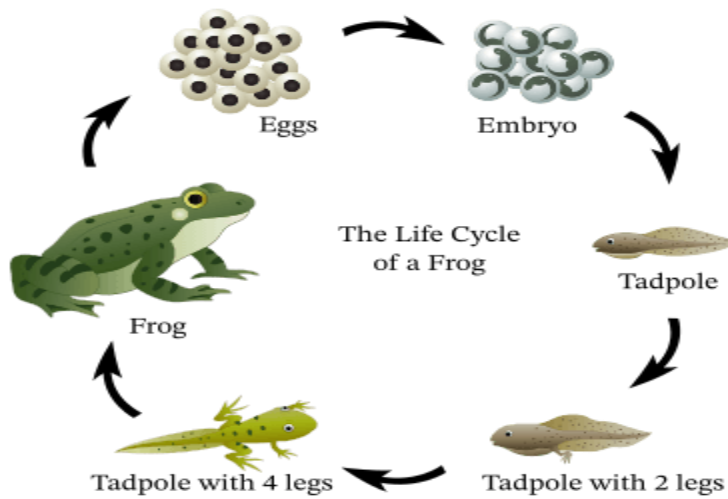
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Parts Of an Egg

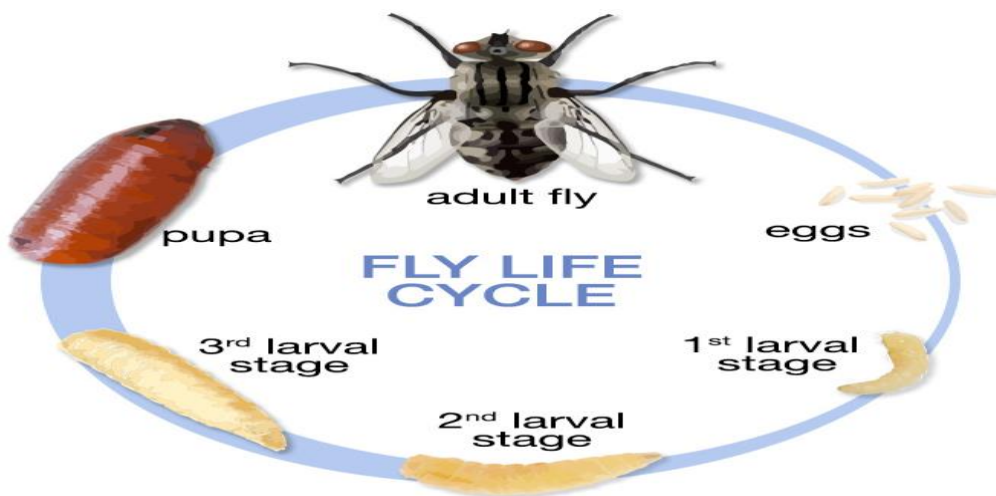
- Life cycle of a hen



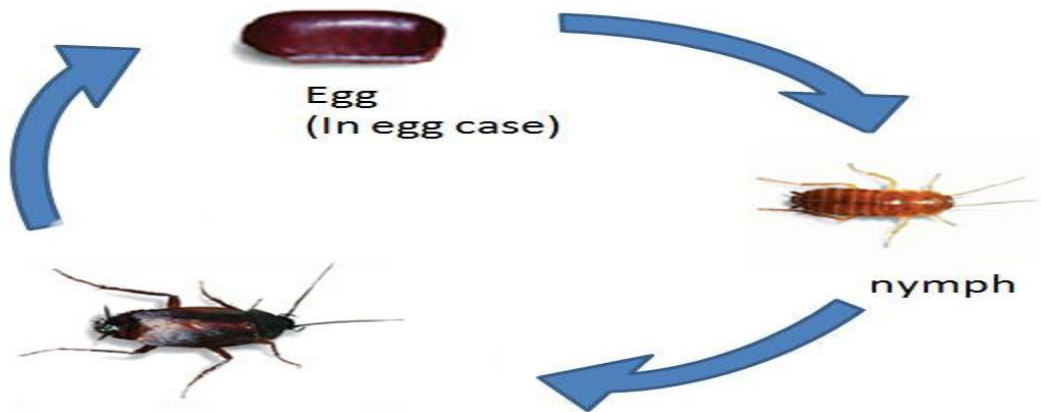
- Life cycle of frog



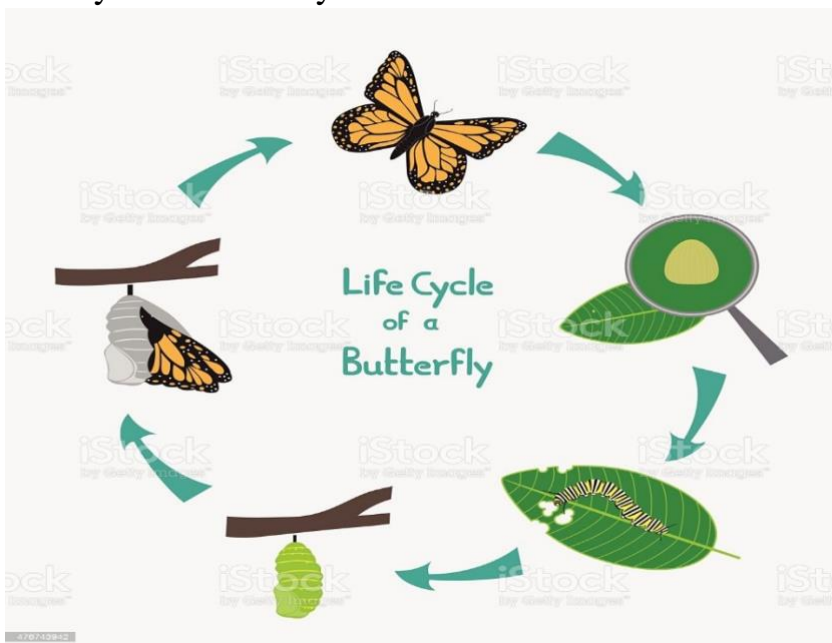
- Life cycle of housefly



- Life cycle of cockroach



- Life cycle of butterfly



4. Animals that give birth to young ones are called Mammals like- cows, goats, sheep, dogs.

5. Care of young ones- like our parents take care of ourselves in same manner animals and birds also take care of their babies.

**Note: Read the chapter thoroughly and do the bookwork by yourself.**

**Solved question answers**

**Answer the following questions**

**Short Answer Questions**

Q1. Define the following

a) Metamorphosis

Ans- It is the process by which some animals go through a series of physical change to become adults.

b) Yolk

Ans- The yellow portion in the centre of the egg is called the yolk.

c) Caterpillar

Ans- The larva of a butterfly is called a caterpillar

d) Spawn

Ans- A female frog lays hundreds of eggs at a time in a lake or a pond. These egg clusters are called spawns.

e) Tadpole

Ans- A tiny young frog which hatches out an egg is called a tadpole

Q2. Why do animals reproduce?

Ans- To ensure that life goes on, animals must produce more of their own kind before they die. This is why they reproduce.

Q3. What is incubation?

Ans- The male or female birds sit on the eggs for a few weeks, in order to keep them warm. This is known as incubation.

Q4. Give three examples of animals that show metamorphosis?

Ans- The three examples of the animal that show metamorphosis are: Hen, fish and frog.

Q5. What is moulting? Name the animals that undergo moulting?

Ans- The process of shedding the old skin in some insects is called moulting. For eg; Cockroach.

Q6. Differentiate between mammals and marsupials?

Ans- Marsupials are the animals that carry their young ones in their pouch. Whereas, mammals keep their young ones in their habitats.

### Long Type Questions

Q1. Define reproduction. What are the ways in which animals reproduce?

Ans- Living things give birth to their young ones of their own kind. This is called reproduction. Animals reproduce in these two ways:

- By giving birth to their young ones- humans, cows
- By laying eggs- birds, reptiles.

Q2. Differentiate between life cycle and lifespan?

Ans-

| Life cycle   | Lifespan   |
|--|--|
| The stages which a living thing goes through during its development from an embryo to an adult is called life cycle. | The period of time during which a human being, plant or animal is expected to live is called lifespan. |

Q3. Explain the different parts of a hen's egg?

**Part of an egg**

- An egg has a thin protective shell called "**Egg Shell**".
- Within the egg shell is a white jelly like substance called the **albumen**, which is rich in proteins.
- The yellow inner part of the egg is the **yolk** and it is rich in fats, vitamins and minerals.
- The yolk contains food for the **grow** the **embryo**.
- The embryo develops into a **chick**.



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Parts Of an Egg

Q4. Discuss the life cycle of a frog?

Ans- A female frog lays hundreds of eggs at a time in a lake or pond. These egg clusters are called spawns. The eggs are surrounded by a jelly like substance that protects the eggs. After about 6 weeks the tadpole begins to grow organs and limbs. Slowly the tail begins to disappear. In about 12 weeks, it transforms into a fully developed fish.

Q5. What are the stages in the life cycle of a housefly? Explain?

Ans- Do it yourself.

Q6. Draw, label and colour the life cycle of a cockroach?

Ans- do it yourself.

Q7. A frog has lungs for breathing, it can survive on land, but a tadpole cannot. Why?

Ans- A frog can survive on land and breathe with the help of lungs. Whereas, a tadpole is more like a small fish. It doesn't have lungs but has gills instead. It therefore, swims in water and cannot survive on land.

## **CHAPTER NO-4**

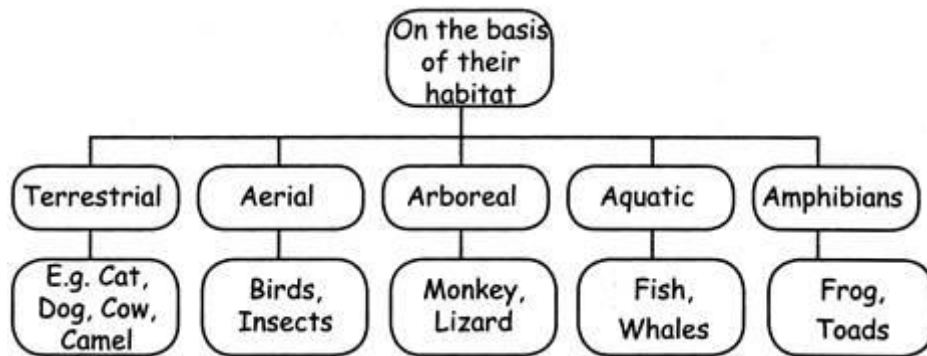
### **Animals: living and surviving**

#### **LEARNING OBJECTIVES**

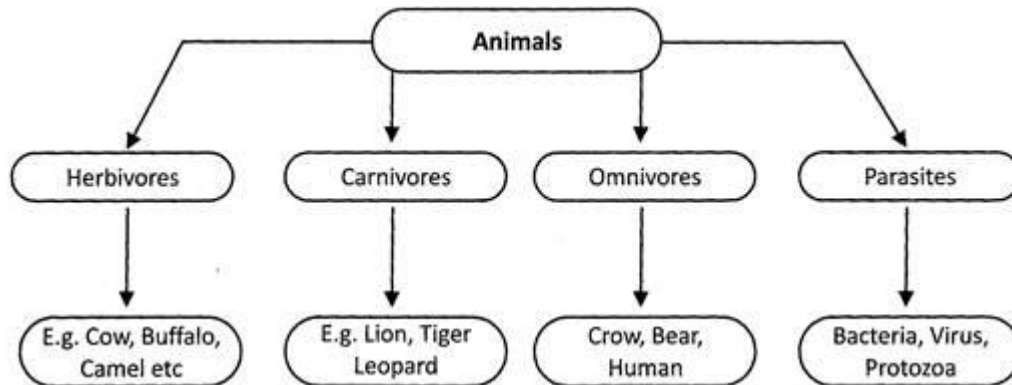
- 1. Identify types of animals.**
- 2. Describe different habitats of animals.**
- 3. Categorise animals according to their diet.**
- 4. Demonstrate the importance for animals to adapt to their environment.**

## THINGS TO REMEMBER

### 1. Animals on basis of their habitat



### 2. What animals eat?



### Feeding Habits of Animals

## Scavengers



**Scavengers** feed on dead animals and plant materials present in their habitats.



### 3. Adaptation for protection

#### Adaptations for protection

- Many animals have adapted themselves to the environment and to protect themselves from their enemies.
  1. Animals like elephant and hippopotamus have thick skin to protect themselves from the hot climate.
  2. Some animals have very strong legs and are able to run very fast and can easily run away from danger. For example, deer and gazelle
  3. Some animals like chameleon, zebra, arctic fox, polar bear, and frog can trick their enemies because their body colour easily blends with their surroundings, thus confusing their enemies. This is known as camouflaging.
  4. A chameleon can also change its body colour according to the surroundings. Grasshopper and the stick insect are other examples of animals that show perfect camouflage.

### 4. Adaptation in behaviour

#### Migration

- This is when behavioral adaptation that involves an animal or group of animals moving from one region to another and then back again.
- Animals migrate for different reasons.
  - better climate
  - better food
  - safe place to live
  - safe place to raise young
  - go back to the place they were born.



#### Hibernation

- Hibernation is an instinctive behavior.
- It is a response to cold weather.
- Animals go into a sleep state to survive the cold winter.



**Note: Read the chapter thoroughly and do the bookwork by yourself.**

**Solved question answers**

**Answer the following questions**

**Short Answer Questions**

Q1. What are terrestrial animals? Give two examples?

Ans- Animals that live on land are called terrestrial animals. Eg- cow, goat.

Q2. Name two animals that live in desert. How are they adapted to their surroundings?

Ans- Animals that live in desert are camels and kangaroo rats.

To survive in their surrounding, they need to:

- Conserve water in their bodies.
- Survive without food and water for many days.

Q3. Name two aquatic animals that breathe through their lungs?

Ans- Whales and Dolphins.

Q4. Differentiate between parasites and scavengers?

Ans-

| Parasites   | Scavengers   |
|---|--|
| Living organisms that live in or on other living organism for food.                         | Animals that feed mostly on dead animals and plants.   |
| They have adaptive features such as suckers or sucking tubes to suck blood from their host. | They have adaptive features such as powerful jaws and sharp teeth to tear and eat flesh of dead animals. |
| Eg- ticks, fleas  | Eg- jackal, wolves   |

Q5. Differentiate between hibernation and aestivation?

Ans-

| Hibernation   | Aestivation  |
|---|--|
| Some animals cannot survive in the cold winter months. So, when winter arrives they sleep in caves or underground. This is known as hibernation.<br>Eg- frogs and snakes. | Some animals cannot survive in drought and heat conditions. So, they go to sleep for a long time in summer months. This is known as aestivation.<br>Eg- crocodiles and lungfish. |

Q6. How do tortoises and snails protect themselves from danger?

Ans- Tortoises and snails have a hard shell on their bodies. When they sensed with any danger, they go into the shell.

### **Long Type Questions**

Q1. Define the term 'adaptation'. Show some examples to support the definition?

Ans- The process by which living beings develop some features to suit their surroundings is called 'adaptation'.

Eg- like camels have humps on their backs as a place to store fat. It is this fat that helps them to survive for longer duration in a desert without food and water.

Q2. Describe the three main adaptive features of terrestrial animals. Give three examples each of domestic and wild animals?

Ans- Do it yourself.

Q3. What are the adaptations present in the animals living in mountainous regions?

Ans- The animals living in mountainous regions have developed following adaptations-

1. long, thick, coarse and wavy coats of fur that protects them from low temperature.

2. larger hearts and lungs, which allow them to live and breathe.

Q4. What are the adaptations present in arboreal animals? Where are they mostly found?

Ans- Do it yourself.

Q5. How do aquatic animals adapt themselves to live in water?

Ans- Aquatic animals have following adaptations present in them-

1. They have respiratory organs such as gills that help them to breathe under water.

2. Locomotory organs as the fins to swim easily in the water.

3. Some aquatic animals such as whales and dolphins have lungs for breathing underwater.

Q6. Discuss the features of a bat. How are these features different from the features of a bird?

Ans- Bats have wings made of thin layers of skin. These are stretching across the arms and fingers, like cloth in an umbrella. They also have very long fingers. However, they are different from the birds as they do not have feathers on their wings.

Q7. Define the term 'camouflage'. How do Zebras, leopard and tigers Camouflage themselves?

Ans- The process by which animals protect themselves by looking similar or merging with their immediate surroundings is called Camouflage. Zebras, tigers and leopards have stripes or spots on their bodies which help them to merge with their immediate surroundings.