

Grade : VI

Subject : Science

Characteristics of Living Things

- They need **food** to grow and for life processes.
- The young ones **grow** into adults
- They **respire** Animals breathe in oxygen and breathe out carbon dioxide. Plants take in carbon dioxide and give out oxygen.
- They respond to changes in the surrounding (**stimuli**).
- They all get rid of wastes produced in the body (**excretion**).
- They **reproduce** their own kind.
- They show **movement**.

Living things

Habitat

- Surroundings where organisms live in.
- It has two components: biotic (living things like plants and animals) and abiotic (non-living things like rocks. Soil, air and water)

Types of Habitat

Adaptations

- Presence of specific features or certain habits which enable an organism to live in its surrounding.

Terrestrial Habitat

- Plants and animals live on land.
- Example : Forest, Grasslands, deserts, coastal and mountain ranges.

Aquatic Habitat

- Plants and animals live in water .
- Example : ponds, swamps, lakes, rivers and oceans.

Terrestrial

Aquatic

Ponds

- **Plants with roots Fixed in soil:** Stems are long, hollow and light; leaves float on water.
- **Plants with roots submerged:** Leaves are narrow and thin ribbon-like.

Oceans

- Animals have streamlined body; gills to respire (dolphins and whales have blowholes.).
- Animals like squids and octopus do not have streamlined body and stay deep in water

Deserts

- Small animals stay in borrows deep in sand during day, and come out at night.
- In plants, leaves are either absent or very small as spines; stem has a thick waxy coating; roots go deep into the soil.

Mountains

- Animals have thick skin or fur; mountain goat has strong hooves.
- Trees are cone shaped having sloping branches; leaves are needle-like.

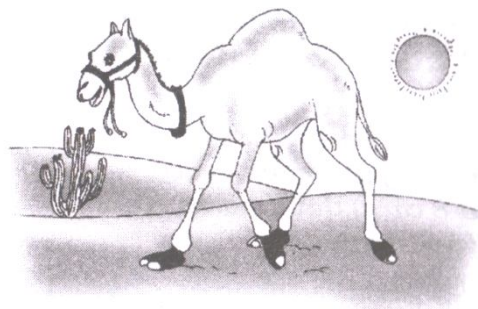
Grasslands

- Animals are light brown in colour;
- **Lion:** long claws in front legs that can be withdrawn inside the toes; eyes in front of face.
- **Deer :** Strong teeth, long ears, eyes on the sides of head .

I. Know the Terms

- **Habitat:** The surroundings or place where organisms live is called their habitat. They depend for their food, water, air, shelter and other needs on their habitat.
- **Terrestrial Habitats:** The habitats of the plants and animals that live on land are called terrestrial habitats.
- **Aquatic Habitats:** The habitats of plants and animals that live in water are called aquatic habitats.
- **Biotic component:** The living things such as plants and animals in a habitat are called biotic components.
- **Abiotic component:** Various non-living things such as rock, soil, air and water in the habitat are called abiotic components.
- **Xerophytes:** The plants which grow in deserts or in very dry places where there is scarcity of water are called xerophytes. For example, cactus, agave, asparagus are xerophytic plants.
- **Aerial (Volant) Habitats:** The habitats of animals that live in air for most of the time are called aerial habitats, e.g. birds.
- **Adaptation:** The presence of specific features in the body which help a plant or animal to live or survive is called adaptation.

Example: Camel is adapted to live in desert condition.



Snow leopards, yak and mountain goats are adapted to live in mountain habitats.



(a) Snow leopards,



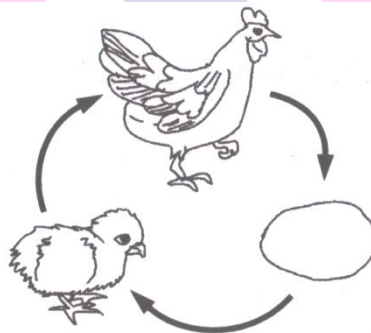
(b) yak



(c) mountain goats

- **Movement:** Change in the position from one place to another is called movement.

- **Respiration:** It is a process in which food taken by an organism combines with oxygen to release energy. In this process carbon dioxide is given out.
- **Excretion:** The process of removal of waste substances from the body of living being is called excretion.
- **Living Things:** Objects which have some characteristics such as need of food, respiration, response to stimuli, movement, growth, and reproduction are called living things.
- **Growth:** An increase in size, height and girth is referred to as growth. Growth seems to be common to all living things. For example, a chicken hatched from an egg grows into a hen or cock.



- **Stimuli:** Changes in us or other organisms caused due to surroundings that makes us or other organisms respond to them are called stimuli.
- **Reproduction:** Reproduction is the process by which living things produce more of their own kind.
- **Hydrophytes:** The plants which grow in watery place or the places which remain very wet throughout the year are called hydrophytes. For example, Hydrilla, Vallisneria, Pistia, Lotus.
- **Mesophytes:** The plants which we see around us, i.e., which grow in moderate conditions of temperature, light, water and oxygen. For example, apple, neem, lime and orange. They are called mesophytes.
- **Amphibians:** Organisms that can live on land as well as in water. Eg:Frog
- **Hibernation:** A condition in which the animals undergo a long sleep in polar regions.
- **Camouflage:** The natural colouring or form of an animal that enables it to blend in with its surroundings. Eg: Chameleon.

I . Multiple choice questions

1. The habitat of living organisms that live in water is called :
- (a) Terrestrial habitat (b) Aquatic habitat
(c) Both (a) and (b) (d) None of the above
2. Which of the following is an amphibian ?
- (a) Man (b) Dove (c) Fish (d) Frog
3. Submerged plants may have leaves that are :
- (a) Modified into spines (b) Narrow thin ribbon like
(c) Floating on the surface of water (d) Broad and spongy
4. The process of ejection of harmful/excess material from the body is known as :
- (a) Respiration (b) Excretion (c) Adaptation (d) None of these
5. Which of the following has strong hooves ?
- (a) Lion (b) Deer (c) Mountain leopard (d) Mountain goat
6. The biggest animal living on the earth is :
- (a) Whale (b) Zebra (c) Elephant (d) Camel
7. Which of the following cannot be called a habitat ? **[NCERT Exemplar]**
- (a) A desert with camels (b) A pond with fishes
(c) A jungle with wild animals (d) Cultivated land with grazing cattle
8. Following are some features of plants : **[NCERT Exemplar]**
- (i) They loss a lot of water through transpiration
(ii) Their leaves are always broad and flat
(iii) They lose very little water through transpiration
(iv) Their roots grow very deep into the soil
- Which of the combinations of above features is typical of desert plants ?
- (a) (i) and (ii) (b) (ii) and (iv) (c) (ii) and (iii) (d) (iii) and (iv)
9. Boojho comes across an animal having a stream-lined and slippery body. What is the habitat of the animal ? **[NCERT Exemplar]**
- (a) Water (b) Desert (c) Grassland (d) Mountain

10. Which of the following are characteristics of living beings ?

- (i) Respiration (ii) Reproduction (iii) Adaptation (iv) Excretion

Choose the correct answer from the options below :

[NCERT Exemplar]

- (a) (i), (ii) and (iv) only (b) (i) and (ii) only
(c) (ii) and (iv) only (d) (i), (iii) and (iv)

11. Earthworms breathe through their :

[NCERT Exemplar]

- (a) Skin (b) Gills (c) Lungs (d) Stomata

12. Which of the following is not an example of response to stimulus ?

[NCERT Exemplar]

- (a) Watering in mouth when we see delicious food items.
(b) Closing of leaves of mimosa plant when touched.
(c) Shutting our eyes when an object is suddenly thrown in our direction.
(d) A chick hatching out of an egg.

13. Which of the following is correct for respiration in plants ?

[NCERT Exemplar]

- (a) Respiration takes place only during day time.
(b) Respiration takes place only during night.
(c) Respiration takes place both during day and night.
(d) Respiration takes place only when plants are not making food.

14. Which of the following is an incorrect statement about excretion ?

[NCERT Exemplar]

- (a) Excretion takes place in plants
(b) Excretion takes place both in plants and animals
(c) Excretion is the process of getting rid of excess water only
(d) Secretion is one method of excretion.

15. Choose the set that represents only the biotic components of a habitat : **[NCERT Exemplar]**

- (a) Tiger, Deer, Grass, Soil (b) Rocks, Soil, Plants, Air
(c) Sand, Turtle, Crab, Rocks (d) Aquatic plant, Fish, Frog, Insect

16. Which one of the following is not associated with reproduction ?

[NCERT Exemplar]

- (a) A new leaf coming out of a tree branch
(b) A dog giving birth to puppy
(c) A seed growing into a plant
(d) Chick hatching from an egg.

17. Choose the odd one out from below with respect to reproduction.

[NCERT Exemplar]

- (a) Eggs of hen (b) Seeds of plants (c) Buds of potato (d) Roots of mango tree

18. Although organisms die, their kind continue to live on earth. Which characteristic of living organisms makes this possible ? **[NCERT Exemplar]**

- (a) Respiration (b) Reproduction (c) Excretion (d) Movement

19. If you happen to go to a desert, what changes do you expect to observe in the urine you excrete ? You would

- (i) excrete small amount of urine
 (ii) excrete large amount of urine
 (iii) excrete concentrated urine
 (iv) excrete very dilute urine Which of the above would hold true ? **[NCERT Exemplar]**
- (a) (i) and (iii) (b) (ii) and (iv) (c) (i) and (iv) (d) (i) and (ii)

20. In the cactus plant, food is prepared by which of the following ?

- (a) Stem (b) Leaf (c) Root (d) Both (a) and (b)

1. (b)	2. (d)	3. (b)	4. (b)	5. (d)	6. (a)	7. (d)	8. (d)	9. (a)	10. (a)
11. (a)	12. (d)	13. (c)	14. (c)	15. (d)	16. (a)	17. (d)	18. (b)	19. (a)	20. (a)

II. Multiple choice questions

1. The living things which cannot manufacture their own food are called.

- a. Heterotropes b. Parasites c. Autotropes d. Saprophytes

2. The removal of waste substance from the body is called.

- a. Reproduction b. Respiration c. Breathing d. Excretion

3. Which of the following is not the characteristic of living thing?

- a. Growth b. Movement c. Do not need food d. Respiration

4. Which of the following comes under the abiotic component?

- a. Temperature b. Plants c. Animals d. Micro-organisms

5. _____ is the structural and functional unit of all living things.

- a. Matter b. Cell c. Organs d. Tissue

1. a	2. d	3. c	4. a	5. b
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Match the following

(I) Column A	Column B
(a) Bird	(i) Desert adaptations
(b) Cockroach	(ii) Terrestrial
(c) Camel	(iii) Xerophyte
(d) Rat	(iv) Volant adaptation
(e) Cactus	(v) Nocturnal

a. iv	b. v	c. i	d. ii	e. iii
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(II) Column A	Column B
a. Excretes small urine	i. Snow leopard
b. Webbed feet	ii. Predators
c. Animal has thick fur, on its body including feet and toes.	iii. Help in swimming in water.
d. Higly divided leaves	iv. Camel
e. Animals which eat other animals	v. Aquatic submerged plant

a. iv	b. iii	c. i	d. v	e. ii
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I. Fill in the blanks

- The presence of specific features which enables a plant or an animal to live in a particular habitat is called _____.
- The habitats of the plants and animals that live on land are called _____ habitats.
- The habitats of the plants and animals that live in water are called _____ habitats.
- Soil, water and air are the _____ factors of a habitats.
- Changes in our surroundings that make us respond to them are called _____.

a. adaptation	b. terrestrial	c. aquatic	d. abiotic	e. stimuli
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II. Fill in the blanks

- The process of breathing involves _____ of gases.
- Oxidation of food is called _____.
- Cells are organised in _____ ways in different organisms.
- Some objects are categorised as living while others as _____.
- _____ take food from plant and animal products.

1. exchange	2. respiration	3. various	4. non-living	5. Animals
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III. Fill in the blanks

- Saline water, hot air and sand are _____ components of a habitat.
- The habitat of plants and animals that live in _____ is called the aquatic habitat.
- _____ enable a plant or an animal to live in its surroundings.
- Plants and animals that live on land are said to live in _____ habitats.

[NCERT Exemplar]

a. abiotic	b. water	c. Adaptations	d. terrestrial
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I. True / False

- The weight varies from object to object.
- Animals grow throughout their life.
- Non-living objects do not carry out respiration.
- All objects around us are made up of matter.
- Plants keep growing throughout their lives.

1. True	2. False	3. True	4. True	5. True
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Quiz Time

1. Name the place where an organism live and gets its food.
2. Write the names of two mountainous plants.
3. Give the names of two organisms which are adapted to live in desert.
4. Name the animal which is called ship of desert.
5. What are various types of habitats?
6. What are the two components of the habitat?
7. Name two animals which live in the aerial habitat.
8. Does the adaptation take place in a short time?
9. How does gills help a fish?
10. Name the habitat in which rats and snakes live in burrows.

1. Habitat	2. i. Pinus, ii. Deodars
3. i. Cactus, ii. Camel	4. Camel
5. i. Terrestrial, ii. Aquatic, iii. Aerial	6. i. Biotic components, ii. Abiotic components
7. i. Birds, ii. Monkeys	8. No, it takes place gradually
9. Gills help fishes to use oxygen dissolved in water	10. Desert.

NCERT Corner

Intext Questions

1. Do the features of a lion help it in any way to survive?

Yes, the following features of a lion help it to survive.

- i. Light brown colour of skin – It helps it to hide in dry grasslands when it hunts for prey.
- ii. Eyes in front of the face – Allow it to have a correct idea about the location of its prey.

2. Do plants also respire?

Yes, the plants also respire through leaves by exchange of gases. The leaves take in air through tiny pores in them and use the oxygen. They eliminate carbon dioxide into the air.

3. Do plants also respond to stimuli?

Yes, plants also respond to stimuli, For example, 'touch-me-not' plant (Mimosa pudica) closes its leaves when someone touches them.

Textbook Questions

1. What is a habitat?

The surroundings where living organisms live are called habitat.

2. How is Cactus adapted to survive in a desert?

- i. The stem of Cactus helps to retain water.
- ii. Its leaves are modified into spines to reduce transpiration.

These adaptations help Cactus to survive in a desert.

3. Which of the things in the following list are non-living?

Plough, Mushroom, Sewing machine, Radio, Boat, Water hyacinth, Earthworm.

Non-living things are _____.

Plough, Sewing machine, Radio and boat.

4. Given an example of a non-living thing which shows any two characteristics of living things.

An example of a non-living thing is **cloud** which shows following characteristics of living things.

- i. Size of cloud increases or decreases.
- ii. It shows movement.

5. Which of the non-living things listed below, were once part of a living thing?

Butter, leather, soil, wool, electric bulb, cooking oil, salt, apple, rubber.

Following non-living things were once part of a living things.

Non-living things	Source
Butter	Milk of animals
Leather	Animal's skin
Wool	Hair of sheep
Cooking oil	Seeds of plants
Apple	Fruit of apple tree
Rubber	Latex of rubber tree

6. List the common characteristics of the living things.

There are following common characteristics of the living things.

- i. Growth
- ii. Movement
- iii. Respiration
- iv. Reproduction
- v. Nutrition
- vi. Excretion

7. Explain why speed is important for survival in the grasslands for animals that live there.

(Hint : There are few trees or places for animals to hide in grassland habitats)

There are few trees or places for animal to hide in grassland habitats. When tiger attacks deer, the deer has to run faster than tiger to survive so to reach a safe place. If it fails, it has to give its life. So speed is important for survival in the grasslands for animals.

Very Short Answer Type Questions

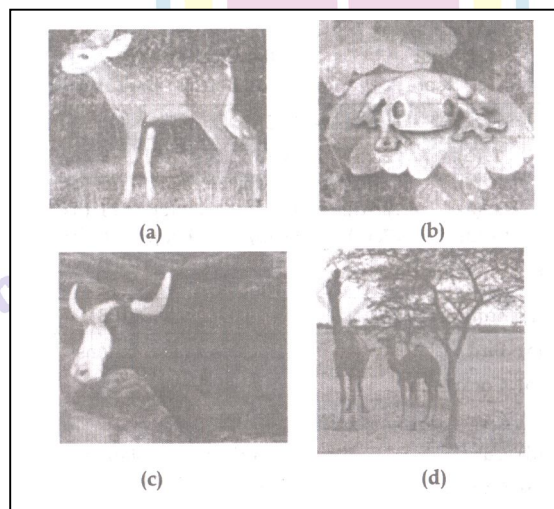
1. Unscramble the words given below to get the correct words using the clues given against them.

- a. Satpadaoint - Specific features or certain habits which enable a living being to live in its surrounding.
- b. Retecoxni - Waste products are removed by this process.
- c. Lumisit - All living things respond to these.
- d. Roucdprentoi - Because of this we find organism

a. adaptation	b. excretion	c. Stimuli	d. reproduction
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2. Using the following words, write the habitat of each animal given in Fig. (a to d).

(Grassland, Mountain, Desert, Pond, River)



- a. The habitat for deer is grassland.
- b. The habitat of frog is pond.
- c. The habitat of yak is mountain.
- d. The habitat of camel is desert.

3. Write one characteristic feature of fish that helps it to live comfortably in water.

Presence of gills for respiration helps a fish to live comfortably in water.

4. What is the name of land habitat in which plants and animals live?

Terrestrial habitat.

5. What is the name of water habitat in which plants and animals live?

Aquatic habitat.

6. Name the components of a habitat.

There are two components named as, biotic and abiotic components.

7. Classify the following habitats into terrestrial and aquatic types.

(Grassland, Pond, Ocean, Rice field)

[NCERT Exemplar]

Terrestrial habitats - Grassland, Rice field

Aquatic habitats - Pond, Ocean

8. Why is reproduction important for organisms?

[NCERT Exemplar]

Reproduction leads to the production of individuals of an organism of the own kind. It helps in continuity of life on earth.

9. What is respiration?

The process of breathing in oxygen and breathing out carbon dioxide along with oxidation of food and release of energy is called respiration.

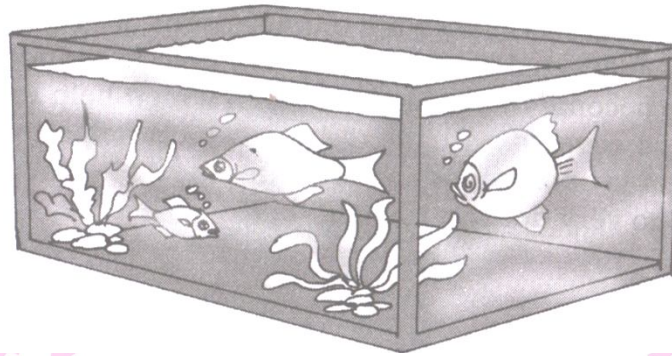
I. Short Answer Type Questions

1. What are the differences in the desert and sea regions?

In the sea, plants and animals are surrounded by salty water. Most of them use the air dissolved in water for breathing. In desert, a very little amount of water is available. It is very hot in the day time and very cold at night. The organisms breathe air from the surroundings.

2. Explain the features of fish which help it to adapt to live in water.

- (i) The shape of the fish body is streamlined which help in the movement.
- (ii) The slippery scales/skin on their bodies to protect them.



(iii) They have flat fins and tails which help them to swim, change direction and to keep the body balanced.

(iv) They have gills which helps in breathing.

3. How are camels adapted to live in desert?

(i) The feet of the camels have thick, flat large soles which help them in the movement on sand.

(ii) They can live without water for a long time. When water is available, it drinks large amount of water at a time.

(iii) They release very little urine to prevent loss of water.

(iv) Their dung is also dry which also helps to prevent loss of water.

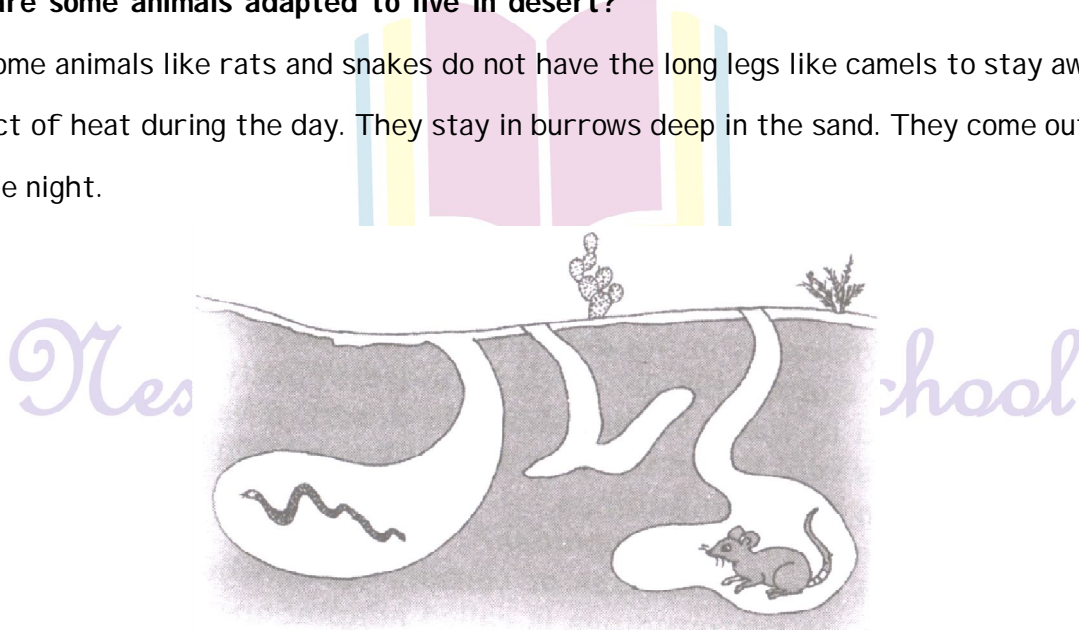
(v) The long legs of camel helps to keep the body away from the heat of the sand.

4. Why do we need abiotic factors?

The abiotic factors like air, water, light and heat are very important for the growth of plants. These abiotic factors are also very important for the growth and the development of animals.

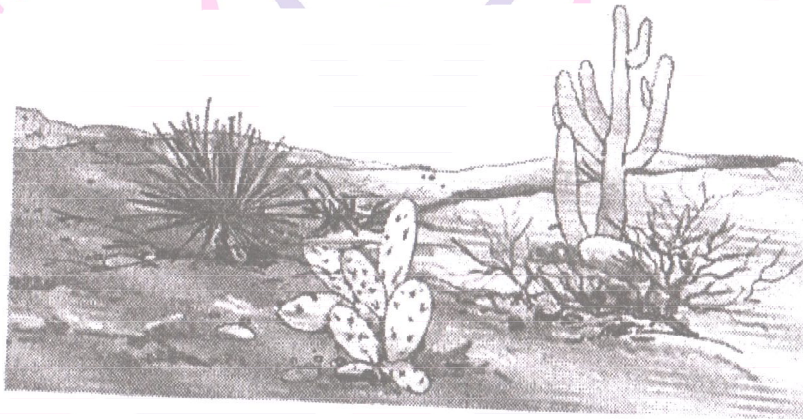
5. How are some animals adapted to live in desert?

Some animals like rats and snakes do not have the long legs like camels to stay away from the effect of heat during the day. They stay in burrows deep in the sand. They come out only during the night.



6. Write the features of desert plants.

- (i) The leaves in desert plants are either absent or very small.
- (ii) Leaves are converted into spines which help to reduce loss of water.
- (iii) The stems become thick, flat and green which help in photosynthesis.
- (iv) The stem is covered with waxy layer which helps to retain water. In some plants stem is spongy and stores water.
- (v) The roots go very deep in the soil to absorb water.



7. Explain the adaptation of trees to live in mountain regions.

- (i) The shape of the trees is of normally cone type.
- (ii) Branches are sloping.
- (iii) The leaves of these trees are needle-like.
- (iv) These structures prevent accumulation of rainwater and snow over them.

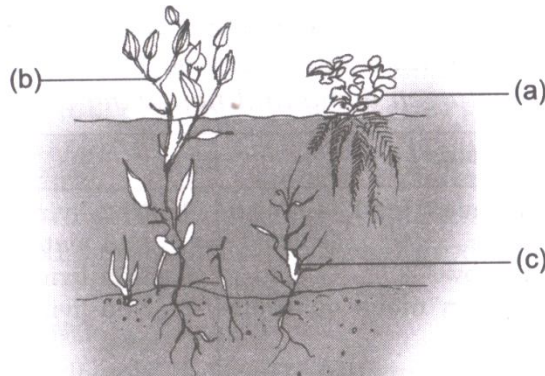


8. Explain the adaptation of animals to live in mountain region.

- (i) The animals have thick skin or fur to protect them from the cold.
- (ii) Some animals have thick fur on their body, feet and toes which protect them from cold on walking in the snow.
- (iii) The goats have strong hooves for running up on rocky slopes.

9. Explain the adaptation of plants to live in water.

- (i) Roots are reduced in size which hold the plant.
- (ii) Stems are long, hollow and light.
- (iii) Stems grow up to the surface of water.
- (iv) Leaves and flowers float on the surface of water.
- (v) The leaves are covered by the waxy layer which protects the leaves from excessive water.



- (a) Some aquatic plants float on water
- (b) Some have their roots fixed in the soil at the bottom.
- (c) Some aquatic plants are completely submerged in water.

10. What kind of movement do we see in plants?

- (i) Opening and closing of a flower.
- (ii) Growth of a stem and leaves.
- (iii) Movement of water, minerals and food from one part of the plant to other.
- (iv) Movement of stem towards sunlight and root towards water in the soil.

11. Frogs can live both on land and in water, name the adaptations seen in these animals.

Frogs have strong back legs that help them in leaping and catching their prey. They have webbed feet which help them to swim in water.

12. Do all organisms live in the same habitat?

No all organisms do not live in the same habitat. Some organisms share the habitat for example lion and deer. Camel can live in deserts only. While frog can survive in fresh water (rain water).

13. What are the difference between biotic and abiotic components?

Biotic components : The living things such as plant and animals in a habitat are called biotic components.

Abiotic components : Various non-living things such as rocks, soil and water in the habitat are called abiotic components. Sunlight and heat also from abiotic components of the habitat.

II. Short Answer Type Questions

1. What are the features in fish that make it suitable for them to live in water ?

Fish have scales all over the body and their body is streamlined also. They can see and breathe in water, thus they are adapted to live in aquatic conditions.

2. What features made crocodiles so adaptable to live on earth for the longest time ?

Crocodile has very strong jaws, very hard back cover and can live on land also. It can live hungry for quite a long time. It is a social animal and does sharing with group.

3. What is an acclimatization ?

The small changes which takes place in the body of a single organism over short period of time to overcome small problems due to changes in the surroundings are called acclimatization.

4. What is an adaptation ?

The presence of specific features or certain habits, which enable a plant or an animal to live in its habitat comfortably, is called adaptation.

5. What do the biotic and abiotic components include ?

Biotic components include living things such as plants and animals. Abiotic components include non-living things such as air, water, soil, rocks, heat and light, etc.

6. How much time does adaptation take to occur ?

Adaptation does not take place in a short time. The abiotic factors of a region change over thousands of years. The animals and plants which cannot change themselves and do not adapt to these changes die out and those who adapt are able to survive.

7. How do rats and snakes escape from the intense heat of the desert ?

Rats and snakes escape the intense heat of the desert by hiding themselves deep into the burrows in the sand during day. They come out during the night when it is cool outside.

8. How do yaks and snow leopard protect themselves from extreme cold ?

Yaks have long hair and leopard has thick fur on its body including feet and toes to prevent them from extreme cold.

9. Write any three features that a deer has to protect itself from its predators.

(i) It has long ears to hear the movements of its predators.

(ii) Its eyes on the sides of its head help it to look in all the directions.

(iii) It has high speed of running which helps to run away from its predators.

10. (a) What type of adaptation is found in a deer, that helps it to see in all the directions ?

(b) How does exchange of gases take place in an earthworm ?

(a) Eyes of the deer are located on the sides of its head. This helps it to see in all the directions.

(b) Exchange of gases in an earthworm takes place through its moist skin.

11. Paheli has a rose plant in her garden. How can she increase the number of rose plants in the garden ? [NCERT Exemplar]

She can increase the number of rose plants in the garden by stem-cutting of the plants. This will lead to reproduction.

12. Why do desert snakes burrow deep into the sand during the day? [NCERT Exemplar]

Since the deeper layers of sand are cooler, so desert snakes burrow deep into the sand during the day. It protects the snakes from heat of the desert.

13. Write the adaptation in aquatic plants due to which.

a. Submerged leaves can bend in the flowing water.

b. Leaves can float on the surface of water.

a. Narrow and ribbon-like leaves of aquatic plants allow them to bend in the flowing water.

b. Long, hollow and light stalks of leaves of aquatic plants allow them to float on the surface of water.

14. Mention one adaptation present in the following animals.

a. In camels to keep their bodies away from the heat of sand.

b. In frogs to enable them to swim.

c. In dolphins and whales to breathe in air when they swim near the surface of water.

[NCERT Exemplar]

a. Long legs in camels help them to keep their bodies away from the heat of sand.

b. Webbed feet in frogs enables them to swim.

c. Blowholes in dolphins and whales to breathe in air when they swim near the surface of water.

15. Some desert plants have very small leaves whereas some others have only spines. How does the benefit the plants?

These are the adaptive features of desert plants for dry condition. These features reduces water plants for by transpiration, as there is scarcity of water in desert habitat.

16. What are the specific features present in a deer that help it to detect the presence of predators like lion? [NCERT Exemplar]

- i. Long ears to hear movement of predators like lion.
- ii. Eyes on the sides of its head which help it to look in all direction.

17. Read the features of plants given below.

- a. Thick waxy stem
- b. Short roots
- c. Cone shaped plants
- d. Sloping branches
- e. Small or spine-like leaves
- f. Hollow stem

Choose the type of plant for every feature given in Aquatic plant, Desert plant, Mountainous plant. [NCERT Exemplar]

a. Thick waxy stem	Desert plant
b. Short roots	Aquatic plant
c. Cone shaped plants	Mountainous plant
d. Sloping branches	Mountainous plant
e. Small or spine-like leaves	Desert plant
f. Hollow stem	Aquatic plant

I. Long Answer Type Questions

1. List the common characteristics of the living Organism.

The characteristic of living things are as follows :

- (i) All living things need food.
- (ii) They all respire.

- (iii) They exhibit growth and die
- (iv) They show response to stimuli
- (v) All living things can reproduce their own kinds.
- (vi) They exhibit movement.
- (vii) All living things excrete waste products.

2. Where is Cactus mostly found ? How is it adapted to survive in such a habitat ?

Cactus is mostly found in the deserts. It has the following special features to adapt itself to survive in the desert :

- (i) Leaves are modified into the spines to reduce the rate of loss of water.
- (ii) Stem becomes green and fleshy to take over the function of photosynthesis.
- (iii) Stem is also covered with a thick layer of wax to retain water.
- (iv) Its roots go deeper into the soil for better absorption of water.

3. Define the following :

- (i) Prey** **(ii) Predators** **(iii) Acclimatization** **(iv) Adaptation**
- (v) Stimuli**

(i) Prey : An animal hunted or caught for food.

(ii) Predator : An organism that lives by preying on other organisms is called a predator.

(iii) Acclimatization : It is the process in which an individual organism adjusts to a gradual change in its environment (such as a change in temperature, humidity, photoperiod, or pH) allowing it to maintain performance across a range of environmental conditions. Acclimation occurs in a short period of time (days to weeks), and within the organism's lifetime

(iv) Adaptation : In biology, an adaptation, also called an adaptive trait, is a trait with a current functional role in the life history of an organism that is maintained or developed by means of natural selection. Adaptation refers to both the current state of being adapted and to be in the dynamic evolutionary process that leads to the adaptation.

(v) Stimuli : An agent, action, or condition that elicits or accelerates a physiological or psychological activity response.

4. Like many animals, although a car also moves, it is not considered as a living organism.

Give 2-3 reasons. [NCERT Exemplar]

- (i) Living organisms move on their own while a car moves by burning of fuel.
- (ii) Like living organisms, car does not exhibit any characteristic of living beings like respiration, digestion, growth etc.

5. What are the adaptive features of a lion that help it in hunting? [NCERT Exemplar]

There are following adaptive features of a lion that help it in hunting :

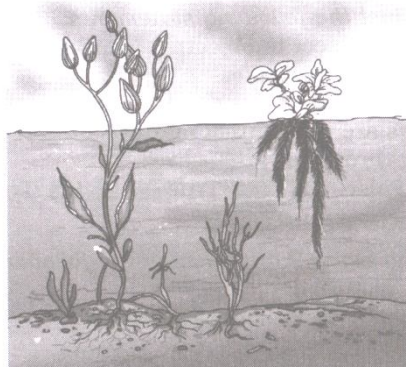
- (i) Light brown colour of skin, which helps it to hide in dry grasslands when it hunts for prey.
- (ii) Eyes in front of face, which help it to know the correct location of its prey.
- (iii) Powerful paws and long claws, which help it to catch and kill the prey.

II. Long Answer Type Questions

1. Write the difference between living and non-living things.

Living things	Non-living things
1. Living organisms need food, air and water.	1. Non-living things do not need food, air and water.
2. Living organisms can grow.	2. Non-living things do not grow.
3. Living organisms can move on their own.	3. Non-living things cannot move on their own
4. Living organisms are sensitive. They respond to changes around them	4. Non-living things are not sensitive. They do not respond to changes around them.
5. Living organisms reproduce themselves.	5. Non-living things do not reproduce.
6. Living organisms respire. They release energy from food.	6. Non-living things do not respire.
7. Living organisms excrete. They get rid of waste materials from their body.	7. Non-living things do not excrete their body.
8. Living organisms have a definite life span after which they die, i.e. they have a definite life cycle.	8. Non-living things do not have definite life cycle.
9. Living things are made up of living cells.	9. Non-living things are not made up of cells.

2. Draw a picture to show different types of aquatic plants. How are they adapted to live in water?



- i. The roots are much reduced in size and their main function is to hold the plant in place.

ii. The stems of these plants are long, hollow and light.

iii. The stems grow up to the surface of water while the leaves and flowers, float on the surface of the water.

iv. Some of these plants have narrow and thin ribbon like leaves.

v. In some submerged plants, leaves are often highly divided through which the water can easily flow without damaging them.

vi. These can bend in the flowing water.

III. Long Answer Type Questions

1. Distinguish between the following.

- Living things and Non-living things (Growth, Reproduction, Respiration, Excretion)
- Biotic components and Abiotic components
- Adaptation and Acclimatisation
- Predator and Prey

a.

	Living things	Non-living things
Growth	They grow	They do not grow
Reproduction	They produce off springs	The do not reproduce
Respiration	They respire	They do not respire
Excretion	They excrete waste	They do not excrete

b.

S.No	Biotic component	Abiotic components
i.	These are the living organisms in an area.	These are non-living things in an area.
ii.	For example, animals and plants present in an area.	For example, rainfall and temperature in an area.

c.

Adaptation	Acclimatisation
The changes made by an individual by which it adjusts to varying conditions.	The small changes that take place in the body of an individual due to changes in the surrounding.

d.

S.No	predators	prey
i.	They kill other animals for food.	They are killed by other animals for food.
ii.	For example, lion	For example, deer.

I. High Order Thinking Skills (HOTS) Questions

1. If an organism fails to adapt to its environment, what could be the possible consequences ?

If an organism fails to adapt to its environment, the possible consequences could be :

- (i) The organism will die.
- (ii) The species will become extinct.

2. Why does a fish die when kept outside the water ?

Fish breathes through gills which take up dissolved oxygen present in water. When it is kept out of the water, it is unable to respire due to difference in pressure of gas. Hence, it dies.

II. High Order Thinking Skills (HOTS) Questions

1. Explain, why speed is important for survival in the grasslands for animals that live there. [NCERT]

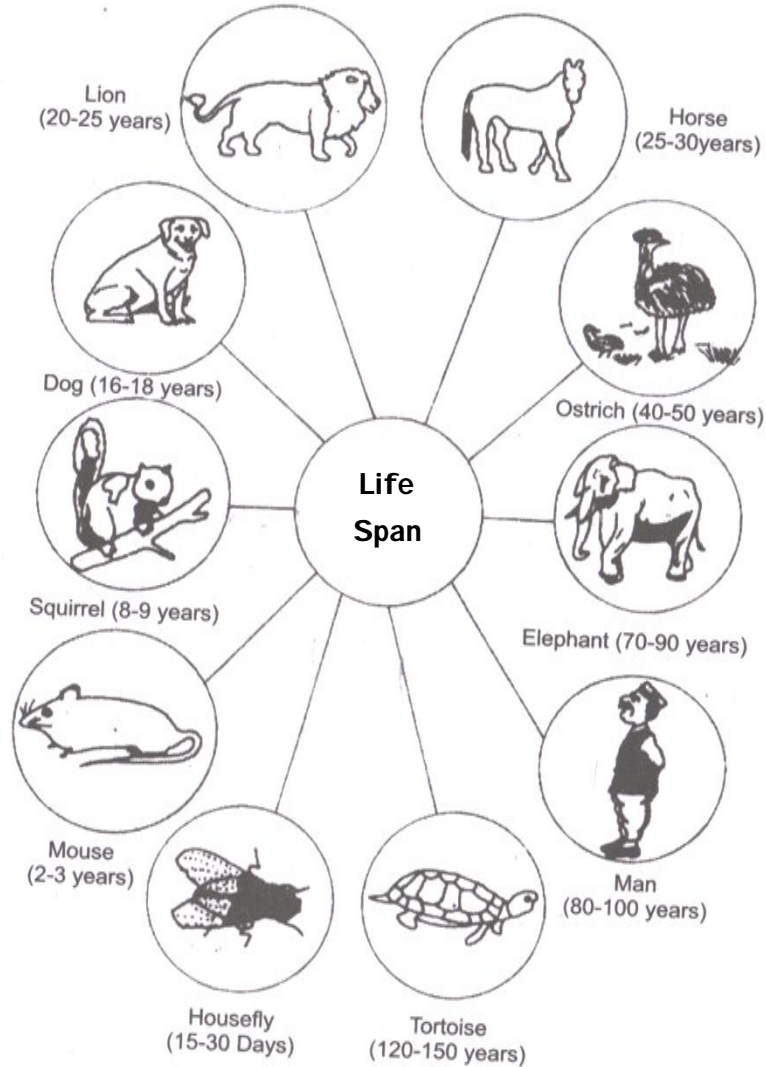
Grassland habitats have few trees. large number of predators are founding this habitat along with other animals which become their prey. Since there is less number of places to hide for both the predators and prey, animals adapt themselves by increasing their speed.

Next Generation School

I. Skill Based Question

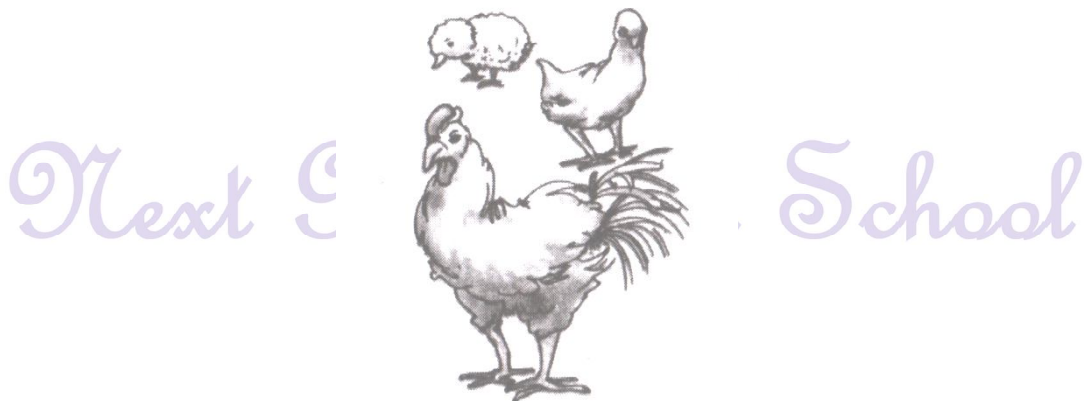
1. Observe the following Fig. 9.9 and answer the following questions.

- What does this picture depicts?
- Which animal survives for longest period?

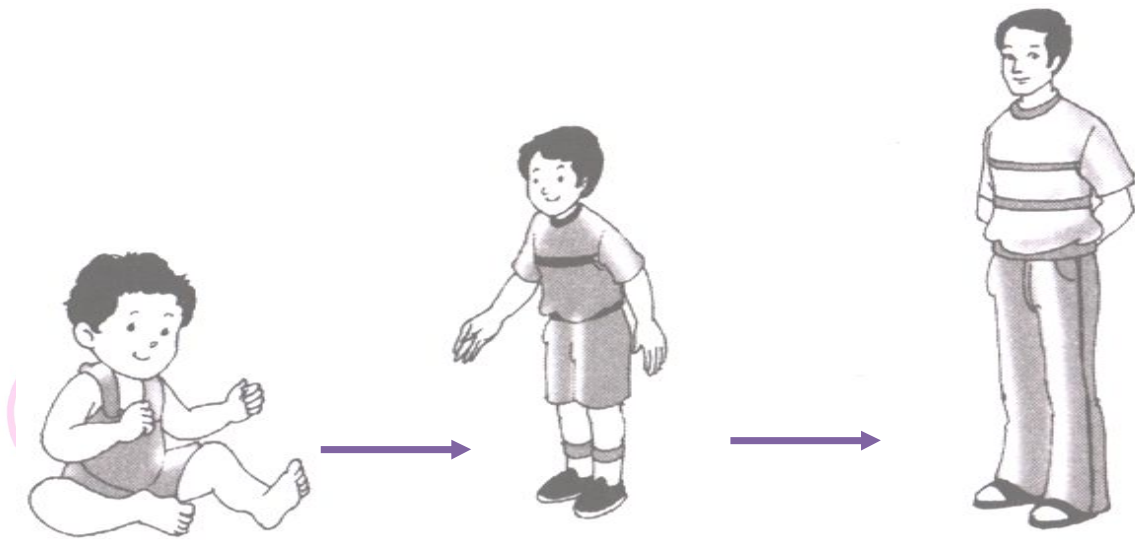


- Life span of some animals.
- Tortoise (120-150 years)

2. Draw a diagram to show the growth of a chicken into an adult.

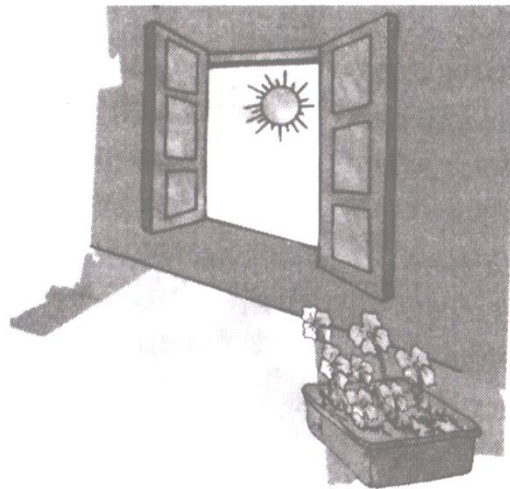


3. a. Observe the following figure and state what does it show.
 b. On the basis of figure tell that human lay eggs or produce young ones.



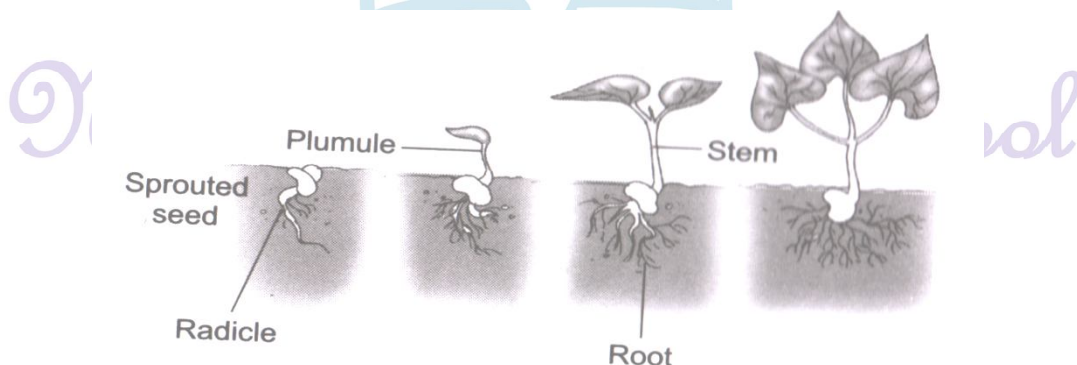
- a. The Fig. 9.11 shows the growth of a baby into an adult.
 b. Human produces young ones.

4. Draw a diagram to show that plants respond to light.



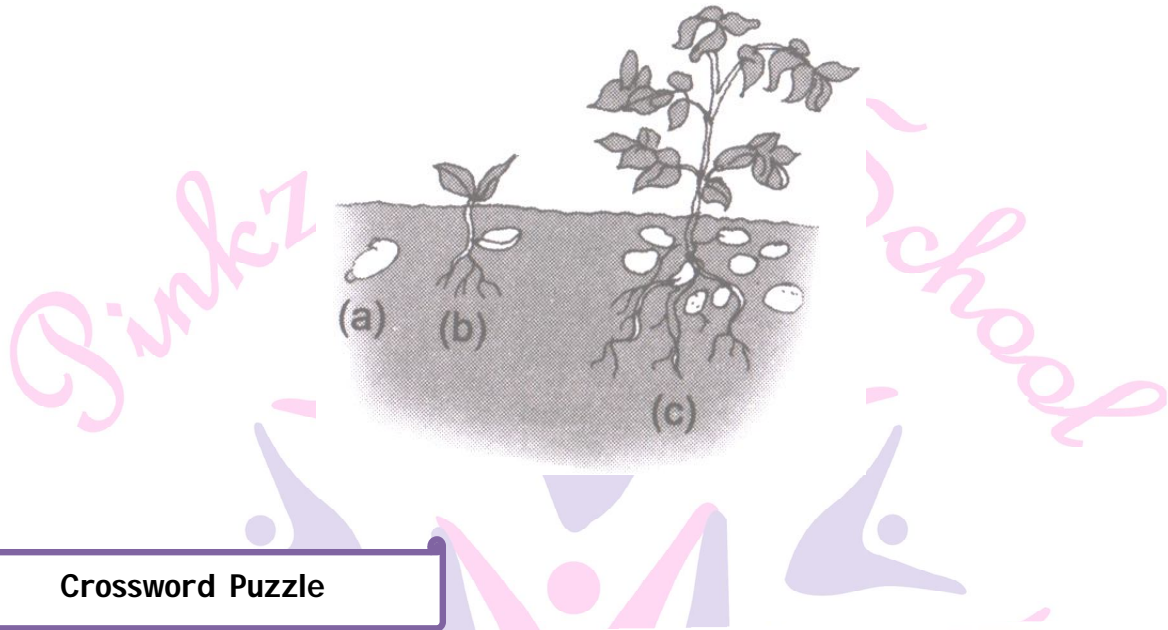
5. Draw a diagram to show various stages of germination in which a seed grows into a new plant. Define the term germination also.

The following figure shows the various stages of germination.

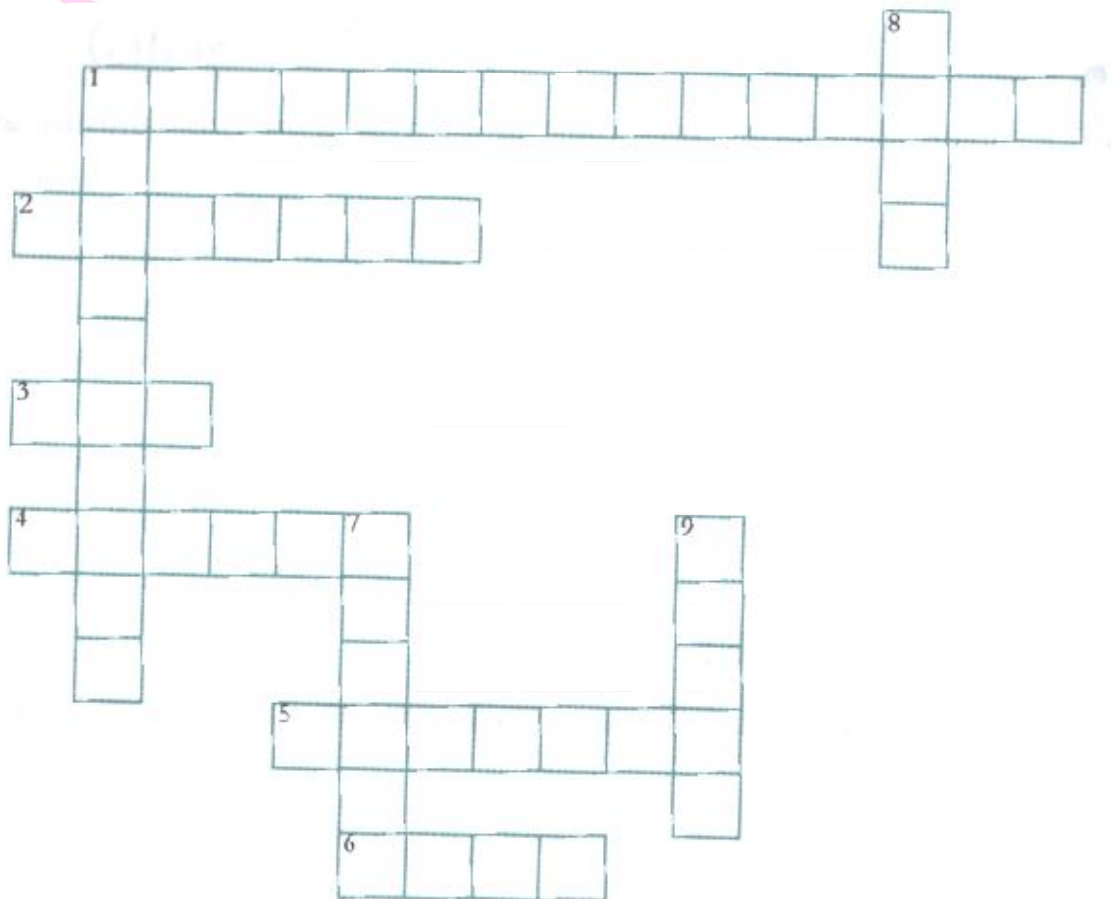


Germination : The process by which a seed is converted into new plant is called germination.

6. With the help of a diagram show how potato plants are grown.



Crossword Puzzle



Across

1. Small changes in animal's body for a short period of time.
2. The natural surrounding in which an animal lives.
3. An animal that lives in the cold mountain region.



4. The living components of the environment.
5. Changes in our surrounding that make us respond to them.
6. Respiratory organ in earthworm.

Down

1. The ability of an organism to adjust to its habitat.
7. A desert plant that makes food in its stem.
8. An animal that lives in the grassland.
9. A sea animal that does not have a streamlined body.

Across

1. acclimatisation
2. habitat
3. yak
4. biotic
5. stimuli
6. skin

Down

1. adaptation
7. cactus
8. lion
9. squid

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