

Delhi Public School, Gandhinagar
Class 5
Subject : EVS
Name of Book: New Science Ahead
CHAPTER 1:Food and Health

Learning objectives: Students will be able to-

1. Identify the nutrients in food groups.
2. Understand the importance of a Balanced diet.
3. Explain methods of food preservation.
4. Identify the deficiency diseases due to lack of nutrients in diet.
5. Explain that germs cause infectious diseases.
6. List the ways of preventing infectious diseases.
7. Non infectious diseases.

New Words

1. Nutrient	10. Stagnate
2. Proteins	11. Insecticides
3. Carbohydrates	12. Repellents
4. Roughage	13. Immunization
5. Cereals	14. Vaccination
6. Dehydration	15. Vaccines
7. Communicable	16. Immunity
8. Infectious	17. Posture
9. Antiseptic	18. Slouching

Answer The Following Questions:

Q. 1)- Define Nutrients.

Ans.)- Nutrients are substances that our body needs to live grow and be healthy. They provide nourishment to the body.

Q. 2)-Name the five nutrients that our body needs. Also write examples of foods that contain these nutrients

Ans.)- The five nutrients that our body needs are:

(i)**Carbohydrates**- Gives energy to work and play.

Examples:Found in rice, wheat, grains, potato etc.

(ii)**Proteins**- Helps in growth. Makes muscles, bones and skin. Repair body when damaged. **Examples:** Found in pulses, milk, eggs, fish, meat etc.

(iii)Fats- Stored in our body and used by body to get energy when required. Also help to keep the body warm.
Examples: Found in oil, ghee, butter, nuts etc.

(iv)Vitamins- Required by body in small amounts to stay healthy and fit. They are of many kinds like Vitamin A, B, C, D, E and K. **Examples:** Found in fruits and vegetables

(v)Minerals- Required by body in small amounts to stay healthy and fit. Minerals include Calcium, phosphorous, Iron.

Examples:Found in milk products, beans, meat & fish.

Q. 3)- What is a Balanced diet?

Ans.)- A balanced diet is a diet that contains the right amounts of all nutrients along with roughage and water. It includes fruit, vegetables, grains, dairy products, and protein.

Q. 4)- Write the wrong practices of cooking food that destroys nutrients in it.

Ans.)- (i) Overcooking of food destroys nutrients in food.

(ii) Cooking in excess water and later throwing away that water. Hence nutrients get removed.

(iii) Keeping cooked food for longer duration increases the risk of germ growth and rotting of food.

(iv) Washing Fruits and vegetables after cutting, removes nutrients.

Q. 5)- Explain the following methods of preserving foods.

Ans.)-(i) Dehydration: It is removing water by drying in sun. **Examples:** Food items like grains (wheat, Rice) Papad & Chips, Pulses, Dry fruits are dried in sun before storing.

(ii)**Sweetening:** Adding sugar to fruits for making jams or preserving them in sugar syrup.

(iii)**Salting:** adding salt. Example: preserving fish by salting.

(iv) **Canning:**It is packing of food in cans. Examples: Fruits & Baked Beans.

(v) **Pickling:** Adding spices & oil in vegetables.

(vi)**Adding Preservatives:** Preservatives such as vinegar and oil are used to preserve spices and vegetables.

Q. 6)- What is a Disease? Explain their types.

Ans.)- An abnormal condition in an organism resulting from various causes. A person with a disease feels unwell, weak and is unable to work. They are of two types:

(i) Infectious or communicable disease

(ii) Non Infectious or non-communicable disease.

Q. 7)- Explain Infectious diseases with examples?

Ans.)-Infectious diseases spread from one person to other.

- They are caused by germs.
- It spreads when a sick person comes in contact with healthy person.
- Also known as communicable diseases.
- Example: Common cold, conjunctivitis, COVID 19.

Q. 8)- Write the ways by which Infectious disease spread along with examples?

Ans.)-Infectious diseases spread by the following ways:

(i)Through air:When an infected person coughs, sneezes or spits then germs are released in air and if healthy person breathes this infected air he gets infected with germs.**Example:** Common cold, Flu, Measles.

(ii)Through Infected food and water: Germs enter food through dust, dirt, rats or insects (such as houseflies, cockroach) in our food or water.

Example: Diarrhoea, Typhoid, Jaundice.

(iii)Through Insects & Animals: When a blood sucking insect bites an infected person it sucks blood along with germs and then when it bites healthy person, insect passes infection to him.

Example: Malaria spreads by mosquitoes.

Plague spreads by Rats.

(iv)Through direct/ indirect contact: When an infected person comes in contact of healthy person or shares towel or used items with infected person. Then infection gets transferred from sick to healthy person.

Example: Ring worm, Chicken pox.

(v)Through damaged skin: Skin is a protective wall of our body. Germs cannot enter or pass through skin. If the skin is cut or

damaged then infection gets transferred inside our body.

Example: Tetanus, Leprosy

Q. 9)- Write ways to prevent the spread of infectious diseases.

Ans.)- Best is to control the breeding & spreading of germs.

- Keep yourself and surroundings clean.
- Use disinfectants to clean floors, drains and bathrooms.
- Do not let water stagnate to prevent breeding of mosquitoes. Use mosquito repellents and mosquito nets to avoid mosquito bites.
- Boil drinking water for 15-20 minutes to kill germs.
- Spray insecticides to kill insects.
- Stay away from infected people.

Q. 10)-Define and explain the following:

(i) Immunisation(ii) Vaccines(iii) Vaccination

Ans.)(i)Immunisation: It is the process where people are protected against illness caused by infection with micro-organisms. In this process a person is made **immune or resistant** to an infectious disease, by giving a vaccine.

(ii) Vaccine refers to the material used for **immunization** Vaccines are made up of dead or very weak germs of a particular disease.

Vaccines stimulate the body's own immune system to protect the person against infection or disease.

(iii) Vaccination refers to the act of giving a vaccine to a person. **Vaccination** is when a **vaccine** is given to you (usually by injection or orally).

Q. 11)- Explain what are Non-Infectious disease with examples?

Ans.)-Non-Infectious diseases do not spread from one person to other. They are also called non-communicable diseases.

Example: Deficiency diseases, Allergy, Diabetes, Asthma.

Q.12)- What are deficiency disease?

Ans.)-Diseases that are caused by deficiency or lack of nutrients in diet are known as Deficiency disease

Q.13)- In a tabular form write the name of deficiency diseases caused due to lack of vitamins and minerals along with food source.

Ans.)-Deficiency diseases caused due to Vitamins & Minerals:

Vitamin/Mineral	Food Source	Deficiency Diseases
Vitamin A	Carrot, Milk, Yellow Fruits, Liver, Green vegetables.	Night blindness
Vitamin B1	Whole grains, Fish, Beans, Nuts.	Beriberi
Vitamin C	Citrus Fruits like orange, lemon Tomato, Chilli.	Scurvy.
Vitamin D	Sunlight, Milk, Cheese, Fish, Egg.	Rickets
Iron	Green leafy vegetables like spinach Seafood, Beans.	Anaemia
Calcium	Milk & milk products, Egg.	Soft weak bones Bad teeth
Phosphorous	Meat, Fish, Egg, Beans, Milk, Grains	Pain in Joints, Poor Bone Development.

Iodine	Sea food, Iodized Salt	Goitre
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Q.14)-Why do we need exercise and rest?

Ans.)-(i) Exercise makes your muscles and inner organs (like heart and lungs) strong. Lack of exercise makes us overweight and unhealthy.

(ii) Rest- Our body needs rest to recover and repair. We must have 8 hours of sleep every night to wake up fresh and ready for next day.

Q.14)-What is posture? What is slouching?

Ans.)-Posture is position of your body. Always sit, stand and walk straight.

➤ Slouching is hunched or slightly bent body. It is bad for our body.

Delhi Public School, Gandhinagar

Class 5

Subject : EVS

Name of Book: New Science Ahead

CHAPTER 2: Rock and Minerals

Learning objectives: Students will be able to-

1. Understand that rocks are made up of minerals.
2. Identify different types of rocks.
3. Explain the process of formation of Igneous, Sedimentary and Metamorphic rocks.
4. Differentiate between various types of rocks.
5. List the ways in which rocks are useful to us.

New Words

1. Minerals	14. Sandstone
2. Igneous	15. Limestone
3. Magma	16. Calcite
4. Fiery	17. Shale
5. Lava	18. Conglomerate
6. Granite	19. Metamorphic
7. Basalt	20. Marble
8. Obsidian	21. Quartzite
9. Pumice	22. Gneiss
10. Frothy	23. Ores
11. Sediment	24. Magnetite
12. Sedimentary	25. Coal
13. Fossils	26. Petroleum

Answer The Following Questions:

Q. 1)- What are rocks made up of?

Ans.)- Rocks are made up of tiny grains called **minerals**.

Q. 2)-How are the Igneous rocks formed?

Ans.)- Process of formation of igneous rocks:

- Deep inside the Earth temperature is very high due to which rocks melt. These molten rocks are called Magma.
- Magma gets pushed up towards the earth's surface, due to pressure of hot gases, when it comes out it is called lava which cools down to form rocks again.
- These rocks are called **Igneous or Fiery Rocks**.

Q. 3)- Explain the difference between various type of igneous rocks on the basis of cooling of molten magma.

Ans.)- Types of Igneous rock on the basis of cooling of molten magma.

Granite	Magma cools slowly under the Earth's Surface.
Obsidian	Magma cools quickly under the Earth's surface.
Basalt	Volcanic lava cools very fast & hardens quickly above the Earth's surface.
Pumice	Frothy lava cools quickly on the Earth's surface.

Q. 4)- Write uses of following igneous rocks:

(i) Granite (ii) Basalt (iii) Obsidian (iv) Pumice

Ans.)- (i) **Granite:** Used in construction of building and statues.

(ii) **Basalt:** For construction purpose.

(iii) **Obsidian:** For making statues and jewellery.

(iv) **Pumice:** To polish floor & furniture, also used as
as a body scrubber.

Q. 5)- Explain the formation of Sedimentary Rocks.

Ans.)- Formation of Sedimentary rocks:

- ❖ When older rocks break down into small rock pieces.
- ❖ These **broken rocks** are carried by water into rivers, lakes, and oceans.
- ❖ In rivers, lakes, and oceans they sink to the bottom to form **sediments**.
- ❖ As the layer of sediments build up, the layers lying below due to pressure get crushed and are cemented together.
- ❖ Over millions of years they turn into sedimentary rocks.

Q. 6)- Explain the following sedimentary rocks along with uses. Ans.)- (i) **Sandstone:** It is formed when grains of sand get compressed and are cemented together. Consist of mineral Quartz. It is used in construction of buildings.

(ii) **Limestone:** It is formed from shells and skeleton of tiny sea animals. Consist of mineral Calcite. It is used to make cement and bricks.

(iii) **Shale:** It is formed when layer of clay and silt hardens .It is used in to make cement, tiles and bricks.

(iv) **Conglomerates:** It is formed when pebbles get cemented together with minerals.It is used in construction and making ornaments.

Q. 7)- What are Fossils? How are they useful?

Ans.)- Fossils are the remains of dead organisms (like shell and bones) found preserved between layers of sedimentary rock.

➤ They are used to learn about type of living beings that lived on earth millions of years ago.

Q. 8)- What are Metamorphic rocks?

Ans.)- Metamorphic rocks- They were originally sedimentary or igneous rocks. But deep inside the Earth, heat and pressure caused changes in their minerals. Thus changing their appearance and turning them tougher and harder.

➤ Its name is from 'morph' (meaning form), and 'meta' (meaning change).

Q. 9)- Name the parent rock of following Metamorphic rock given in the table below:

Ans.)-

S.No.	Metamorphic Rock	Parent Rock
1.	Gneiss	Granite (Igneous Rock)
2.	Marble	Limestone (Sedimentary Rock)
3.	Quartzite	Sandstone (Sedimentary Rock)
4.	Slate	Shale (Sedimentary Rock)

Q. 10)- How are rocks useful to us?

Ans.)Rocks are used as:

(i) **Building materials:** (a) Marble & granite are used in construction of buildings. (b) Limestone is use to make cement. (c)Slate is used to make roof tiles.

(ii) **Metals:** Many minerals that make up rocks contain metals,that can be extracted from their ores. Example Magnetite is an ore of Iron metal.

(iii) **Gemstones:** Minerals are also found in form of crystals which can be polished as beautiful stones called Gemstones to make jewellery.

(iv) **Fuels:** Coal (a sedimentary rock) and petroleum(sticky liquid found between sedimentary rocks) are used as fuels.

Q. 11)- How are Coal and petroleum formed? Write their uses.

Ans.)-(i) Coal: (i)It is formed from dead remains of plants that got buried in swamps under water and dirt.(ii)Heat & pressure turned the plants into coal.

Use of Coal:(a) As fuel for cooking

(b) To heat houses.

(c) To generate electricity in power houses

(d) To run machines in factories.

(ii) **Petroleum:** (i) It is formed from dead remains of plants and animals that sank in the sea bottom. (ii) Sediments build upon them. (iii) Heat & pressure changed the dead remains into dark sticky liquid called **crude oil** or petroleum.

Use of Petroleum:(a) Petrol and diesel obtained from petroleum are used to run vehicles and machines.

(b) We also get plastic, paints, fertilizers, cosmetics from it.

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Class 5
Subject : EVS
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CHAPTER 4: Living Things

Learning objectives: Students will be able to-

1. Understand the characteristics of living things.
2. Differentiate between living things and non-living things.
3. Differentiate between plants and animals.
4. List the importance of classifying things.

New Words

1. Living	8. Spores
2. Chlorophyll	9. Reproduce
3. Photosynthesis	10. Surroundings
4. Cell	11. Groups
5. Microscope	12. Similar
6. Amoeba	13. Environment
7. Respond	14. Scientist

Answer the Following Questions:

Q. 1)- Why do scientists group things?

Ans.)- To study characteristics of things, similar ones are grouped together. This grouping makes the study easier.

Q. 2)- Write the important characteristic of living things.

Ans.)-Characteristic of living things:

i) Living things move on their own.

ii) Living things need, air, water and food.

iii) Living things are made up of cells.

iv) Living things grow and change.

v) Living things respond to change.

vi) Living things reproduce.

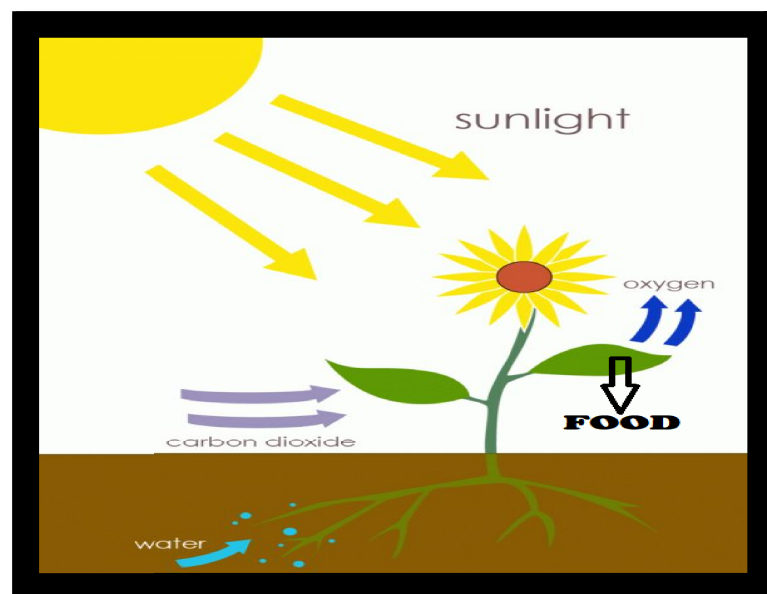
**Q. 3)-Plants are fixed at one place then how do they get food?
Explain in detail.**

Ans.)-Plants make food by the process of photosynthesis.

Plants have green substance called chlorophyll in their leaves. It helps plants to make food using sunlight, carbon dioxide from air and water from soil.

Q-4) Draw a labelled diagram to show the process of photosynthesis in leaves of green plants.

Ans.)-Diagram of Photosynthesis



Q. 5)-What are cells? Name a single celled animal.

Ans.)-A cell is the smallest living part of living things. Cells are very small and they can be seen with the help of microscope.

➤ Amoeba is a single celled animal.

Q. 6)-Plants do not have sense organs. Explain with examples how do plants show response towards changes.

Ans.)-(i) Touch me not plant closes its leaves when touched.

(ii) The bud of a sunflower plant moves to face sun.

Q. 7)-Why do living things reproduce?

Ans.)-Living things produce their young ones so that life can continue on Earth.

Q. 8)-How do animals and plants reproduce?

Ans.)-**Animals** reproduce by:(i) giving birth to babies. (ii)by laying eggs.

Plants reproduce by (i)producing seeds or spores. (ii) Some plant can grow from plant parts like root, stems or leaves.

Q-9) If a stone breaks into little pieces, can we say that it has reproduced? Why or why not?

Ans.)- No, the stone has not reproduced because the broken pieces cannot reproduce new ones.

Q. 10)- Differentiate between plants and animals

Ans.)- Difference between plants and animals:

Plants	Animals
Plants are fixed at one place hence they cannot move.	Animals move in search of food and shelter.
Plants make their own food by the process of photosynthesis.	Animals depend on plants for other animals for food.

Delhi Public School, Gandhinagar
Class 5
Subject : EVS
Name of Book: New Science Ahead
CHAPTER 4: Plant Life

Learning objectives: Students will be able to-

1. Understand that plants reproduce through seeds and body parts such as root, stem and leaves.
2. Describe the structure of seed.
3. List the necessary condition for germination.
4. Explain the need for dispersal of seed.
5. List the various ways of seed dispersal.
6. Explain crops and their types.
7. Describe various methods and techniques adapted by farmers to grow healthy crops and get good yield from them.

New Words

1. Seed coat	8. Rabi crops
2. Cotyledon	9. Irrigation
3. Embryo	10. Ploughing
4. Seedling	11. Insecticides
5. Dispersal	12. Pesticides
6. Explosion	13. Weeds
7. Kharif Crops	14. Harvested

Answer the Following Questions:

Q. 1)- What are the various ways through which plants reproduce?

Ans.)- Ways through which plants reproduce are:

- Through seeds
- Through body parts such as root, stem and leaves.
- Through spores

Q. 2)- Explain the following methods of reproduction in plants:

Ans.)-(i) Reproduction through spores: Some plants have seed like structure called spores, from which new plants develop. Example: Ferns and mosses.

(ii) Reproduction through underground stem:

(a) Eyes: In potato plant there are several small depressions called eyes, where buds develop. Later new plants develop from these buds.

Ginger is underground stems that also grows from buds.

(b) Bulb: The onion is a bulb (underground stem with fleshy leaves). New plants develop from the bulb.

(iii) Reproduction through stem cuttings: Sometimes plants are produced from pieces of stems called stem cuttings. These pieces have one or two buds on them from where new leaves develop while new roots develop from lower part of stem cuttings. Example: Rose, sugarcane, Hibiscus, croton.

➤ Strawberry plant has long stems that run along the ground and hence called Runners. New plants grow from the runner.

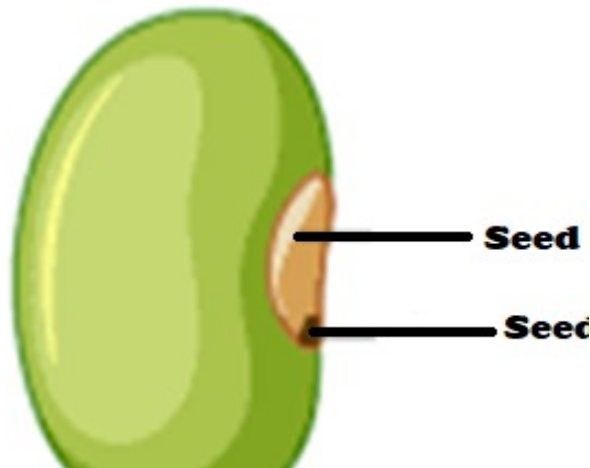
(iv) **Reproduction through leaves**: Buds develop in the notches along the leaf margins, later these buds fall on ground and develop into new plants. Example: Begonia, Bryophyllum.

(v) **Reproduction through roots**: Roots of some plants send up new shoots giving rise to new plants. Example: carrot and sweet-potato

Q. 3)- Describe the structure of a seed with the help of a diagram

Ans.-A) External Structure of a Seed-

When you observe a seed from outside, we can see the following parts:



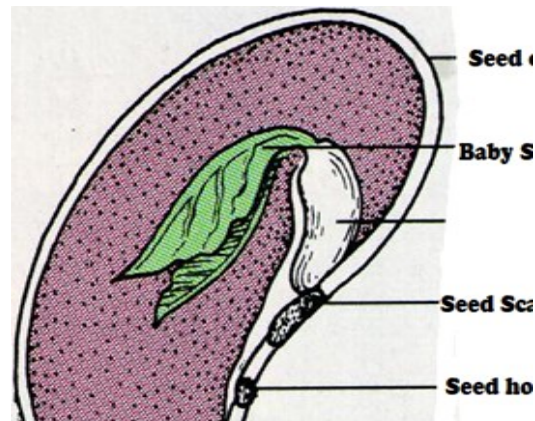
(i) **Seedcoat**: Thick outer covering that protects the seed.

(ii) **Scar**: Point where the seed was attached to the fruit.

(iii) **Small Hole**: It allows water to enter and makes the seed swell up. Even exchange of gases takes place through it.

B) Internal Structure of a Seed-

When you observe a seed from inside, we can see the following parts:



(i) Cotyledon-Seeds has two seed leaves called the cotyledons.

➤ Function of cotyledon:

- 1) protects baby plant.
- 2) stores food for the baby plant.

(ii) Embryo: Between the cotyledons is the baby plant called embryo.

It contains the baby Shoot and baby Root.

Q-4) Give example of plants that have (i) one cotyledon and (ii) two cotyledons.

Ans.)-Example of seeds with

(i) One cotyledon: wheat, maize

(ii) Two cotyledons: gram and pea.

Q. 5)-Define germination. What are necessary conditions for seed germination?

Ans.)-Germination-The beginning of the growth of a seed into a seedling is known as germination.

All seeds need water, oxygen and the right temperature to germinate.

Q. 6)-What is dispersal of seed?

Ans.)-Scattering of the seeds away from the parent plant is called dispersal of seeds.

Q. 7)- Why dispersal of seed is necessary?

Ans.)-If plants grow too closely together, they have to compete for light, water and nutrients from the soil and eventually they will die due to overcrowding.

- Seed dispersal allows plants to spread out from a wide area and avoid competing with one another for the same resources.

Q. 8)-Name three agents of dispersal. Explain them briefly with examples.

Ans.)-Various agents for dispersal of seeds are:

(i)WIND: Some seeds are so light that they can be easily carried away by the wind.

- Hairy structures, wings, light weight, small size help the seeds to disperse by wind.
- Example: Drumsticks, maple, dandelions

(ii)WATER: Some plants make use of water to disperse their seeds.

- Such seeds have spongy seed coats & have air spaces that give the seeds buoyancy to float in the water and carried away to different place.
- Example: water lily, lotus and coconut.

(iii)Animals:(a) Some plants have hooks & spines that get tangled in animal fur or feathers, and are then carried to new sites.

- Example: Xanthium and Urena

(b) Other plants produce their seeds inside fleshy fruits that then get eaten by an animal which is later excreted. Now seed can grow into a new plant.

- Example: Mango, Berries, guava

Q-9) Explain “explosion of fruit” mechanism found in plants for seed dispersal.

Ans.)-Exploding of fruit pods in plants disperse their seeds with high pressure bursts.

- Example: Pea, balsam, Violets, poisonous squirting cucumbers, and touch-me-nots.

Q. 10)- What are crops? Explain their types.

Ans.)-Crops are plants that grown in fields to provide us food & other useful things.

- Crops are of many types:
 - Food Crops (example: Wheat, Rice & Maize)
 - Fibre crops (example: Jute & Hemp)
 - Oil producing crops (example: Peanut mustard Linseed)

Q. 11)- Differentiate between summer and winter crops with examples.

Ans.)- Difference between summer and winter crops:

Summer crops	Winter crops
The crops which are sown at the beginning of the rainy season, e.g. between April and May.	The crops that are sown at the end of monsoon or at the beginning of winter season, e.g. between September and October.
Also known as Kharif crops .	Also known as Rabi crops .
<u>Example of Summer crops:</u> -Rice, maize, groundnut, cotton, garlic	<u>Example of Winter crops:</u> - Wheat, barley, oats, mustard, chickpea/gram, Cauliflower

brinjal,Litchi, plum, apricot, mango, melon.	carrot, radish,apple, banana, berry.
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Q. 12)- What are the practices that farmers follow to increase the yield of their crops?

Ans.)-To grow healthy crops and have a better yield the farmers keep the following in mind:

- ✓ The soil must be suited to the kind of crop grown for healthy growth of plant and better yield.
- ✓ Fields must be ploughed to allow aeration in soil.
- ✓ Manure & fertilizers must be added to keep the soil fertile (to enhance the quality of soil) for better crop production.
- ✓ Good quality seeds must be sown.
- ✓ Crops must be irrigated at right time.
- ✓ Crops must be protected against diseases, insect, birds and small animals like rodents by spraying insecticides & pesticides.
- ✓ Unwanted weeds must be removed.
- ✓ The harvested crop must be protected against moisture, pests, and rodents.
- ✓ Must be stored in dry place to prevent getting spoilt due to fungal or bacterial attack.

CLASS 5, EVS
LESSON NO 7
BONES AND MUSCLES

OBJECTIVES

Students will learn about

- Function of the skeletal system.
- Types of joints.
- How muscles help in bones movement.
- Different types of muscles and their functions.

NEW WORDS

1. Skeleton
2. Collapse
3. Bone marrow
4. Vertebrae
5. Vertebral column
6. Spinal cord
7. Femur
8. Ribs
9. Breast bone
10. Sternum
11. Humerus
12. Hinge
13. Ligament
14. Ball and socket
15. Gliding
16. Triceps
17. Voluntary
18. Cardiac
19. Pivot

ANSWER THE FOLLOWING QUESTIONS.

Q1. Write the functions of the skeletal system.

Ans. Our skeletal system

1. Gives shape and strength to our body.
2. Helps in all type of movement.
3. Protects soft internal organs like brain, heart, lungs.
4. Bones have bone marrow where the blood cells are produced.

Q2. Answer the following in one or two words.

1. Number of bones in
 - Skull- 22
 - Upper part of skull(head)- 8
 - Our face- 14
 - In backbone (vertebrae) – 33
 - Pair of ribs- 12 pair
2. Organs protected by
 - Skull- brain
 - Rib cage- heart, lungs, liver
 - Backbone- spinal cord
3. The other name of the backbone- spine or vertebral column
4. Thin, flat, curved bones that form a cage around the heart and lungs- ribs
5. The other name of the breast bone- sternum
6. Pair of ribs that are not attached to sternum- floating bones.

Q3. Name the following.

1. Bone present at the upper half of the leg- femur
2. The longest bone in our body- femur
3. Bone present at the lower half of the leg-
 - shin bone- tibia

- calf bone- fibula
- 4. Bone present at the upper arm- humerus
- 5. The stretchy bands that hold the bones at joints- ligament
- 6. The tough band of tissues that attach muscles to bones- tendons.
- 7.

Q4. Define joints. Name the four types of joints and give two examples of each.

Ans. Joints are place where two bones are joined together.

The four types of joints are

1. Ball and socket joint- eg. hip joint, shoulder joint
2. Hinge joint- eg. Knee joint, elbow joint
3. Pivot joint- joint between the first two vertebrae of the backbone.
4. Gliding joints- eg wrist and ankle joints.

Q5. Write the difference between voluntary and involuntary muscles. Give one example of each.

Ans.

Voluntary Muscles	Involuntary Muscles
These muscles are in our control.	These muscles are not in our control.
Eg. Muscles in arms and legs.	Eg. Muscles in heart and stomach

Q6. Why are atleast two muscles needed to move a bone in the body?

Ans. Muscles can only pull at the bones. They cannot push so atleast two muscles are needed to move a bone in our body.

Eg. To move our lower arm up and down, there are biceps and triceps muscles.

- To raise the arm, biceps contract and pulls up the arm.
- To lower the arm, triceps contract and pull the arm down.

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CHAPTER 8: Nervous System

Learning objectives:

Students will be able to-

1. Identify that Brain is the control center.
2. Describe how messages are communicated to and from brain.
3. Describe how sense organs help us to know about the world around us.

New Words

- | | |
|----------------|-------------------|
| 1. nervous | 14. co-ordination |
| 2. nerve | 15. eyelid |
| 3. respiration | 16. iris |
| 4. cerebrum | 17. pupil |
| 5. Spinal cord | 18. lens |
| 6. cerebellum | 19. funnel |
| 7. brain stem | 20. molecules |
| 8. sensory | |
| 9. motor | |
| 10. mixed | |
| 11. reflex | |
| 12. vibration | |
| 13. Voluntary | |

Answer the Following Questions:

Q. 1)- What is a Nervous System? Name its parts.

Ans.)-The nervous system is a complex network of nerves, that carry messages to and from the brain and spinal cord to various parts of the body

It consists of following main parts-

- i) Brain**
- ii) Spinal cord**
- iii) Nerves**

Q. 2)-Explain the functions of Nervous system.

Ans.)- Functions of Nervous system:

- (i) It is the control centre of the entire body.**
- (ii) It controls all the system in our body.**
- (iii) It sends messages to body and receives messages from body.**
- (iv) It controls our sense organs.**

Q. 3)- Describe the parts of Nervous system.

Ans.)- Parts of Nervous system:

Brain: It is protected by the skull, and is the organ of thought and memory. It studies the messages, decides the

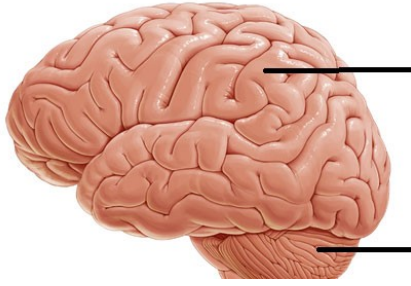
action and sends the instructions to other parts of the body. It is the control centre of the entire body.

- (i) **Spinal cord:** It is a thick bundle of nerves, arising from the brain stem, running through the vertebral column of the backbone. It carries messages from the brain to different parts of the body and vice versa.
- (ii) **Nerves:** They arise from the brain and spinal cord and branch out to every other part of the body. They carry messages from the sense organs to our spinal cord and brain and vice versa.

Q-4) Explain the regions of the brain with the help of a diagram.

Ans.)- The three regions of the brain are:

- A. Cerebrum:**
 - i) It is the largest part of the brain.
 - ii) Controls memory, thoughts, intelligence, learning, speech and sense organs.
- B. Cerebellum:**
 - i) It is located at the back of the brain below cerebrum.
 - ii) It controls the movement of muscles. It helps to keep our body balanced
- C. Brain Stem:**
 - i) It is the lower portion of our brain. It connects the brain to spinal cord.
 - ii) It controls involuntary actions such as swallowing, breathing and circulation.



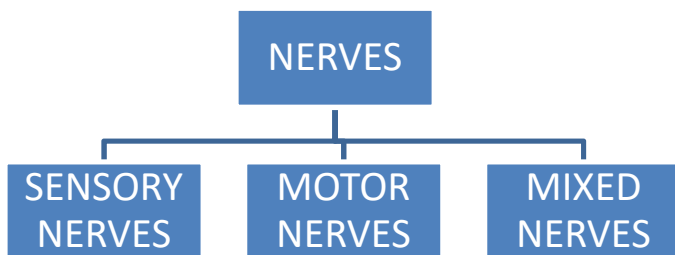
Q. 5)- Explain the three types of nerves.

Ans.)- (i)Sensory nerves: carry messages from sense organs to the brain and spinal cord.

(ii)Motor nerves: carry messages away from the brain and spinal cord to muscles and glands.

(iii)Mixed Nerves: carry messages from sense organs to the brain and spinal cord as well as away from the brain and spinal cord to muscles and glands.

❖ Carry messages in both the directions.

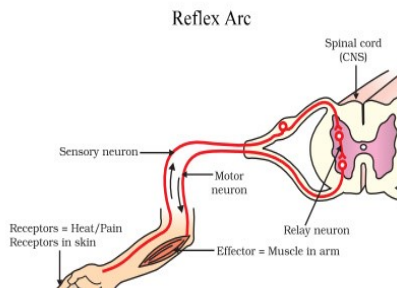


Q. 6)-What is Reflex action?

Ans.)-A reflex action, is an automatic and immediate action in response to a stimulus.(a sudden external change)

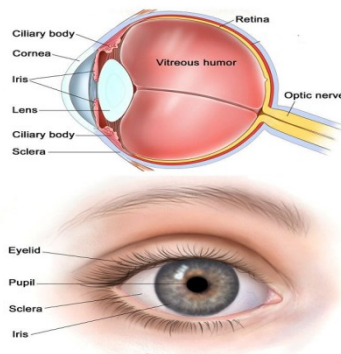
➤ They are automatic actions which are controlled by spinal cord.

- **The brain is not involved.**
- **Spinal cord senses the danger and takes action immediately, to avoid any damage to the body.**



Q. 7)- Explain the structure of eye with the help of a diagram.

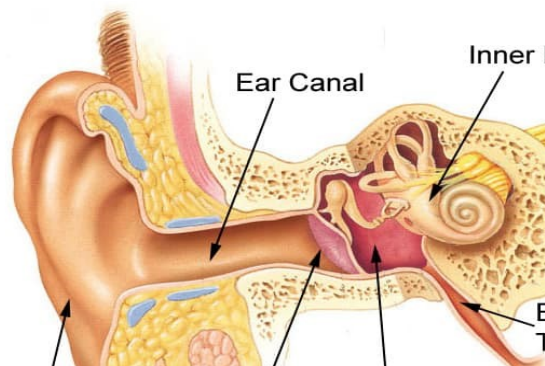
Ans.)- Eyes are the organs of sense of sight. It works with brain, together they enable us to see things differentiate colours, shapes, sizes and distances of objects around us.



- **Cornea:** It is the transparent covering present in the front.
- **Iris:** It is the coloured part of the eye. The colour of the iris actually indicates the colour of the eye.
- **Pupil:** The **pupil** is the small hole. Light enters the eye through pupil.
- **Lens:** Behind the pupil, there is a transparent structure called a lens. It helps to bend the light rays and focus on Retina.

- **Retina:** It is a light-sensitive layer that consists of numerous nerve cells. It converts images formed by the lens into electrical messages. These messages are then sent to the brain through optic nerves.
- **Optic nerve:** The messages are sent to the brain through optic nerves.

Q. 8)-Explain the structure of ear with the help of a diagram.



Ans.)-The ear is the organ of hearing and balance.

- The outer ear consists of the pinna and the ear canal.
- The sound waves are gathered by the outer ear and sent down the ear canal to the eardrum.
- The sound waves cause the eardrum to vibrate, which sets the three tiny bones in the middle ear into motion.
- The motion of the bones causes the fluid in the inner ear or cochlea to move.
- These vibrations are changed into signals in internal ear and passed to brain through nerves.

Q-9) Explain the following as sense organs.

Ans.)- (i)The nose: The ability to smell comes from specialized sensory cells (nerves), which are found inside the nose.

- **These cells connect directly to the brain which takes messages to the brain.**

(ii)The tongue: Tongue allows us to experience tastes that are sweet, salty, sour, and bitter.

- **Taste buds are sensory organs that are found on our tongue.**

(iii) The skin: The skin acts as a sense organ because it contains specialized sensory nerve endings that detect touch, heat, pressure, pain and cold.