

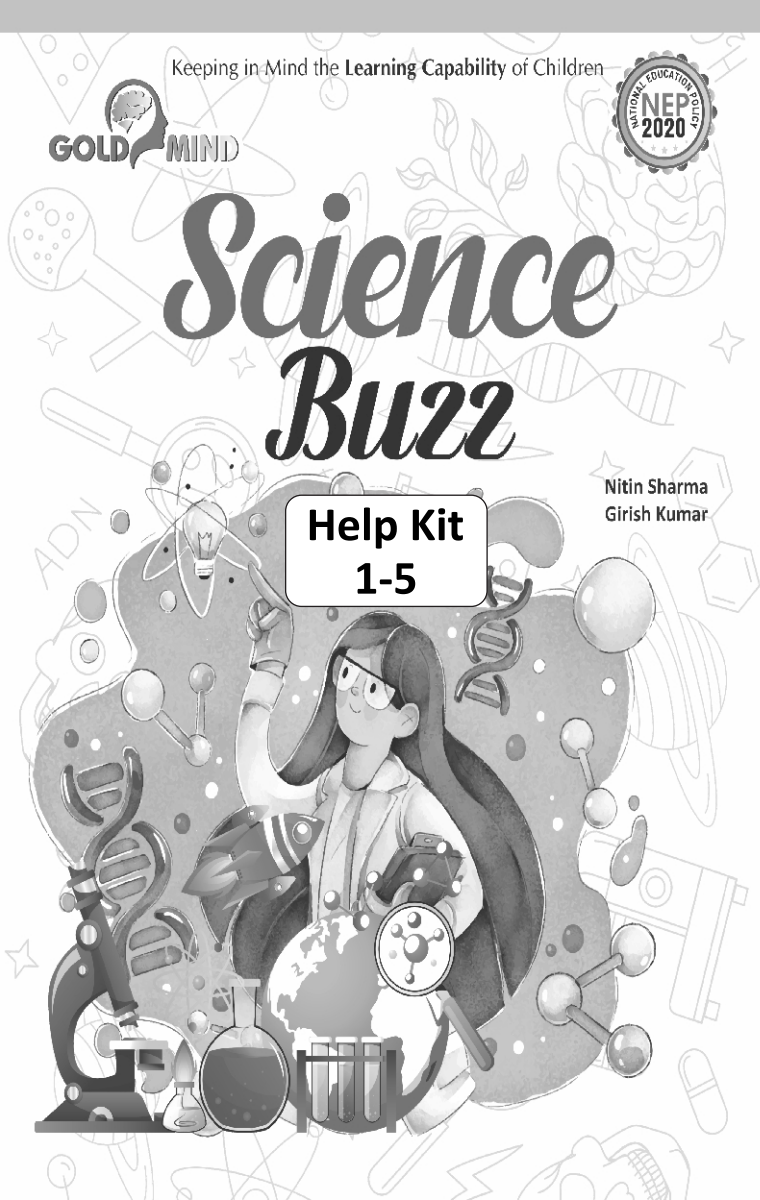
Keeping in Mind the Learning Capability of Children



Science Buzz

**Help Kit
1-5**

Nitin Sharma
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Teacher's Manual

Science Bullet (Class-1)

UNIT 1 : THE WORLD AROUND US

CHAPTER 1 : LIVING AND NON-LIVING THINGS

A. 1. (a) 2. (b) 3. (b) 4. (b) **B.** Do it yourself. **C.** 1. living 2. nature 3. man 4. grow **D.** 1. false 2. false 3. true 4. true **E.** 1. living things need food to live. 2. Plants, Sun, Moon 3. All plants, animals and human beings are living things. **F.** Do it yourself.

UNIT 2 : PLANT LIFE

CHAPTER 2 : PLANT WORLD

A. 1. (a) 2. (b) 3. (c) **B.** 1. plants 2. trees 3. shrubs 4. Climbers 5. Animals **C.** 1. coconut tree, Neem tree 2. Henna, Rose 3. Mint, coriander 4. Grape, Pea 5. Pumpkin, watermelon 6. Rose, Cactus **D.** Do it yourself. **E.** Do it yourself. **F.** Do it yourself.

CHAPTER 3 : FOOD FROM PLANTS

A. 1. (c) 2. (a) 3. (c) **B.** 1. (d) 2. (a) 3. (f) 4. (c) 5. (b) 6. (e) **C.** Do it yourself. **D.** Do it yourself.

UNIT 3 : ANIMAL LIFE

CHAPTER 4 : ANIMAL WORLD

A. 1. (c) 2. (b) 3. (a) **B.** 1. ducks and swans 2. insects 3. land 4. land, water 5. Insects **C.** 1. Parrot, Crow 2. Ostrich, emu 3. Butterfly, Cockroach 4. Cow, Horse 5. Fish, Octopus 6. Frog, Crocodile. **D.** Do it yourself. **E.** Do it yourself.

CHAPTER 5 : FOOD AND SHELTER FOR ANIMALS

A. 1. (a) 2. (a) 3. (c) **B.** 1. True 2. False 3. True 4. True **C.** 1. Animals need food to live. 2. Cows and goats eat plants 3. Bees live in hive. 4. Do it yourself. **D.** Do it yourself **E.** Do it yourself **F.** Do it yourself.

UNIT 4 : OUR BODY

CHAPTER 6 : MY BODY

A. 1. (c) 2. (a) 3. (b) **B.** 1. (c) 2. (e) 3. (a) 4. (b) 5. (d) **C.** 1. Ears helps us to hear a bell. 2. Eyes help us to read a book. 3. Nose help us to smell. 4. Hands, Legs, Ears, and Eyes **D.** Do it yourself **E.** Do it yourself **F.** Do it yourself.

CHAPTER 7 : OUR NEEDS

A. 1. (a) 2. (a) 3. (b) **B.** 1. food 2. fruits and vegetables 3. cotton 4. Doors and windows **C.** 1. We need food to stay alive. 2. We wear woollen clothes in winter. 3. House keep us safe from heat, cold and rain. 4. rain coat. **D.** Do it yourself **E.** Do it yourself

CHAPTER 8 : KEEPING FIT

A. 1. (b) 2. (b) 3. (b) **B.** 1. False 2. True 3. True 4. False 5. true **C.** Do it yourself. **D.** Do it yourself.

CHAPTER 9 : KEEPING SAFE

A. 1. Accidents 2. road 3. knife 4. elder **B.** 1. footpath 2. traffic lights 3. bus 4. flowers **C.** Do it yourself. **D.** Do it yourself.

CHAPTER 10 : GOOD HABITS

A. 1. (a) 2. (c) 3. (c) **B.** 1. food 2. soap, water 3. oil 4. Flush **C.** 1. We must use soap and water to wash away dirt. 2. We must brush our teeth to stay healthy. 3. We must trim our nails because they can carry germs. 4. Sweeping and mopping. 5. We use handkerchief. **D.** Do it yourself **E.** Do it yourself

UNIT 5 : OUR EARTH

CHAPTER 11 : AIR

A. 1. (b) 2. (a) 3. (c) **B.** 1. True 2. False 3. True 4. True 5. False **C.** 1. We need air to stay alive. 2. Drying clothes, flying kites and lighting fire. 3. Fast-moving air can turn blades of a windmill. 4. Do it yourself **D.** Do it yourself **E.** Do it yourself

CHAPTER 12 : WATER

A. 1. all 2. cannot 3. off 4. clean **B.** 1. False 2. True 3. False 4. True **C.** 1. Drinking, cooking and bathing 2. Living things need water to stay alive. 3. We must drink pure water to stay healthy. 4. Distilled water is tasteless and not contain any mineral. Though it is harmless to drink you will not like it. Mineral water content mineral, it is better for health and taste to drink.

CHAPTER 13 : WEATHER

A. 1. (a) 2. (a) 3. (c) **B.** Do it yourself. **C.** 1. We wear raincoats and gumboots to go out in the rain. 2. We wear woollen clothes like sweaters and coats to protect ourselves from the cold in winter. 3. (i) We like to sit near a cooler

or a fan. (ii) We like to have cold drinks and ice cream. 4. he faced on the way rain and before sleep he change his clothes. **D.** Do it yourself. **E.** Do it yourself.

UNIT 6 : OUR UNIVERSE

CHAPTER 14 : UP IN THE SKY

A. 1. (a) 2. (c) 3. (b) **B.** 1. fire 2. west 3. smaller 4. stars **C.** 1. Sun helps plants to make food and grow well. 2. Sun rises in the East. 3. The stars appear small in size because they are far away from us. 4. Do it yourself. **D.** Do it yourself. **E.** Do it yourself.

MODEL TEST PAPER – I

A. 1. Cactus 2. Insects 3. plant 4. legs 5. nose **B.** 1. True 2. True 3. False 4. True 5. False **C.** 1. Coconut, Neem 2. Grape, Pea 3. Wheat, Corn 4. Parrot, Crow 5. running, skipping **D.** 1. Plants that spread along the ground are called creepers. 2. Animals need a home to live in. 3. We need food to stay alive. 4. We wear cotton clothes in summer. 5. We must sleep eight hours every night.

MODEL TEST PAPER – 2

A. 1. footpath 2. adult 3. lighting 4. Water 5. everyday. **B.** 1. (c) 2. (a) 3. (e) 4. (b) 5. (d) **C.** 1. Safety means staying away from harm. 2. Moving air is called wind. 3. The Sun is a big hot ball of fire. 4. Earth is surrounded by a thick blanket of air known as atmosphere. **D.** 1. (i) Do not light a matchstick on your own. (ii) Do not play with sharp things like knife, blade etc. 2. Good habits help us to stay healthy and to become strong. 3. Fast and strong wind can cause a storm. Storms can cause damage to houses, crops and trees. 4. We must drink clean water to stay healthy. 5. Stars appear small in size because they are far away from us.



Teacher's Manual

Science Bullet (Class-2)

UNIT 1 : PLANT LIFE

CHAPTER 1 : PLANT WORLD

A. 1. (a) 2. (c) 3. (a) **B.** 1. Sizes, shapes 2. bark 3. shrubs 4. herb 5. climbers
C. 1. Trees are tall and big plants 2. Creepers– They creep along the ground to spread out. Climbers– They climb on other plants, fences, wall, sticks, etc, for support. 3. The plants that grow in water are called water plants. 4. Mint and Spinach. 5. Shrubs are smaller, bushy, woody and hard plants. **D.** Do it yourself, **E.** Do it yourself.

CHAPTER 2 : USES OF PLANTS

A. 1. (b) 2. (c) 3. (c) 4. (b) 5. (c) **B.** 1 False 2. True 3. True 4. False 5. False **C.** 1. Potato, Sugarcane 2. Spinach, Cabbage 3. Wheat, Rice 4. Tomato, Brinjal 5. Mustard oil, Sunflower oil 6. Banana, Mango 7. Broccoli, Cauliflower **D.** 1. Plants give us fruits, vegetables, wood, gum, paper, rubber, medicines, oils and perfumes. 2. Fibres such as cotton are used to make clothes. 3. We make furniture such as cupboard, table, chair, sofa and doors with different kinds of wood. 4. Trees such as teak and sesame give us wood. 5. Amla and aloe vera are medicinal plants. 6. All flowers cannot be used to make perfumes as all flowers do not have a good smell. **E.** Do it yourself, **F.** Do it yourself. **G.** Do it yourself.

UNIT 2 : ANIMALS LIFE

CHAPTER 3 : ANIMALS : OUR FRIENDS

A. 1. (a) 2. (a) 3. (c) 4. (a) **B.** 1. pet 2. domestic 3. hens, ducks 4. honey & wax 5. Leather **C.** 1. Animals that are kept in farms are called farm animals. Example – Cow, horse. 2. Animals that are kept at home are called pet animals. Example – dog, cat. 3. Sheep gives us wool. 4. Silkworms gives us silk. 5. Yak is the milk giving animal in mountains. **D.** Do it yourself, **E.** Do it yourself.

CHAPTER 4 : WILD ANIMALS

A. 1. (c) 2. (b) 3. (c) 4. (c) **B.** 1. (c) 2. (a) 3. (f) 4. (b) 5. (e) 6. (d) **C.** 1. Wild animals live on land, trees and in water. 2. Tigers and crocodiles 3. Hyenas eat the flesh of dead animals and help to keep the jungle clean. 4. Animals that may soon no longer exist are called endangered animals. 5. Zebra are generally social animals that live in small harems to large herds. **D.** Do it yourself, **E.** Do it yourself.

Science Bullet (1-5)

UNIT 3 : OUR BODY

CHAPTER 5 : BONES AND MUSCLES

A. 1. (b) 2. (c) 3. (c) 4. (c) **B.** 1. False 2. True 3. True 4. True 5. True **C.** 1. Bones and muscles help us to move. 2. We can develop our muscles by doing regular physical exercise. 3. Muscles and bones help a swimmer to swim. 4. The way in which we hold ourselves when we sit, stand or move is called posture. 5. Football increases muscle and bone strength. **D.** Do it yourself, **E.** Do it yourself.

CHAPTER 6 : FOOD FOR HEALTH

A. 1. (b) 2. (a) 3. (c) **B.** 1. plants and vegetables 2. water 3. fibres 4. milk **C.** 1. We need food to grow big and strong. 2. We use energy for work and play. 3. We must wash our hands before and after everyday meal. 4. Juice, Juices are rich in anti-inflammatory compounds that may boost the immune system and help a person feel more energetic. **D.** Do it yourself, **E.** Do it yourself.

CHAPTER 7 : HOUSING AND CLOTHING

A. 1. (b) 2. (c) 3. (b) 4. (b) 5. (b) **B.** 1. True 2. False 3. True 4. False 5. True **C.** 1. We need a house to live in 2. Temporary houses can be moved from one place to another while permanent houses are made of bricks, cement, iron, wood and glass. 3. By keeping it clean. 4. Roofs have different shapes at different places, climate conditions determine the type of roof a house may have. 5. We wear clothes to cover our body. 6. Rajasthan is plains and dry areas. **D.** Do it yourself, **E.** Do it yourself.

CHAPTER 8 : SAFETY RULES

A. 1. (c) 2. (c) 3. (a) **B.** 1. safe 2. subway 3. footboard 4. construction 5. adult **C.** 1. (i) Do not disturb the driver. (ii) Do not stand on the footboard of the bus. 2. (i) Do not leave your toys on the floor. (ii) Do not run in the house, as you may slip. 3. (i) Do not swim in the deep. (ii) Do not go for swimming alone. 4. You should tell an adult. 5. It can hurt and burn you. **D.** Do it yourself, **E.** Do it yourself.

UNIT 4 : OUR EARTH

CHAPTER 9 : THINGS AROUND US

A. 1. (b) 2. (b) 3. (b) **B.** 1. Solid, liquid or gas 2. hard 3. cannot 4. liquids, gases **C.** 1. False 2. True 3. True 4. True 5. False **D.** 1. oxygen, fuel, building materials, medicine, fabric, papers and food for human and animal. 2. Milk, meat and eggs are the food products we get from animals. 3. We get crops and water on the ground. 4. Which are made by man and not found naturally are called man-made things. 5. Three states of matter—solid, liquid or gas.

CHAPTER 10 : AIR EVERYWHERE

A. 1. (b) 2. (a) 3. (b) 4. (a) **B.** 1. True 2. False 3. True 4. True 5. False **C.** 1. Air contains water vapor, smoke, dust and germs. 2. Moving air is called breeze. 3. Storms can blow away roofs of kutcha houses and even damage the crops. 4. A weathercock tells us the directions of the wind. 5. (i) The wind dries clothes on a clothesline. (ii) The wind makes a sailboat move on water. 6. Because the air has a lot of water vapour on it and it cannot accommodate the water vapour created by the wet clothes. **D.** Do it yourself, **E.** Do it yourself. **F.** Do it yourself.

CHAPTER 11 : WATER

A. 1. (b) 2. (a) 3. (b) 4. (a) **B.** 1. True 2. False 3. True 4. False 5. False 6. True **C.** 1. Rain, Ponds and wells. 2. The water on the surface of the earth is called surface water. 3. It is not safe to drink river water because the waste of factories mixes in rivers. 4. (i) We must turn off taps after use. (ii) When it rains, buckets and tanks can be filled with rainwater. 5. In nature, water keeps changing its form. This is called the water cycle. 6. Because in winter the temperature is less, air is cool. **D.** Do it yourself, **E.** Do it yourself.

CHAPTER 12 : SUN, LIGHT AND SHADOW

A. 1. (c) 2. (b) 3. (b) **B.** 1. cloudy 2. Sun 3. opposites 4. long **C.** 1. The sun looks small because it is very very far from the earth. 2. The heat of the Sun dries wet clothes evaporates water and help to ripen fruits. 3. Shadow is formed when an object comes in the path of light. 4. Shadows are formed on the side opposite to the source of light. 5. If a plant doesn't get sunlight it won't make food. After a few days it will start turning yellow. If it doesn't make food it will eventually dry up and die. Remember that this is only in green plants. **D.** Do it yourself, **E.** Do it yourself.

UNIT 5 : OUR UNIVERSE

CHAPTER 13 : GOING TO THE MOON

A. 1. changing 2. Sun 3. Spaceman 4. Neil Armstrong **B.** 1. Moon 2. Neil Armstrong, Edwin Aldrin and Michael Collins 3. A rocket can take us to the moon. 4. Spacesuit 5. If we cannot see it during the day, it's either because it is on the other side of the earth at that time.

CHAPTER 14 : ROCKS AND MINERALS

A. 1. (a) 2. (b) 3. (c) 4. (b) 5. (c) 6. (c) **B.** 1. Coal 2. Slate 3. Silica 4. Talc 5. Gemstone **C.** 1. Granite 2. Coal 3. Silica 4. China clay 5. jewellery **D.** 1. Marble and granite 2. Slate 3. Rocks are made of different types of minerals. 4. (i) Diamond is used to make beautiful jewellery. (ii) Diamond is also used to cut glass. 5. Talc is the softest mineral. 6. Chalk is very fragile and soaks water which is not good for making buildings

MODEL TEST PAPER - I

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A. 1. Shrubs 2. Babul or acacia 3. Posture 4. Houseboat 5. Tent **B.** 1. trunk
2. Rice and wheat 3. firewood 4. Dogs 5. Skin **C.** 1. Pea and Grapevine 2.
Carrot, Radium 3. Dogs, Cats 4. Deer, elephant 5. Hut, tent **D.** 1. Shrubs
are woody and hard plants while a herb is a small leafy plant with a soft
stem. 2. Plants give us fruits, vegetables, nuts, food grains, medicines etc.
3. Animals that are kept at home are called pet animals. 4. A good posture
helps us to stay healthy and strong. 5. (i) We must eat clean and fresh food.
(ii) We must eat our meals at a proper time. (iii) We must wash our hands
before and after the meals.

MODEL TEST PAPER - 2

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A. 1. Air 2. Sun 3. Spaceman 4. Marble 5. Salt **B.** 1. Accidents 2. holi 3.
Wind-vane 4. germs 5. spacesuit **C.** 1. (c) 2. (e) 3. (a) 4. (b) 5. (d) **D.** 1. Storm
can uproot trees, blow away roofs of Kutcha houses and damage the crops.
2. Shadow is formed when an object comes in the path of light. 3. A rocket
can take to the moon. 4. Rocks are made of different types of minerals. 5.
(i) Do not leave your toys on the floor. (ii) Do not climb onto shelves and
window-sills.



Teacher's Manual

Science Bullet (Class-3)

UNIT 1 : FOOD

CHAPTER 1 : FOOD AND FEEDING HABITS OF ANIMALS

A. 1. (a) 2. (c) 3. (b) 4. (a) **B.** 1. herbivores 2. insects 3. Gnaw 4. elephant 5. ,milch **C.** 1. Animals need food to grow, to get energy to do work and to stay healthy and strong. 2. Herbivores have flat and broad front teeth to bite off the leaves and grass and they use their strong grinding teeth at the back to chew their food. 3. A frog has a long and sticky tongue. It shoots out its tongue to catch insects. The insect that gets stuck on the tongue makes a tasty meal for the frog. 4. Plant-eating animals are called herbivores whereas flesh eating animals are called carnivores. 5. An elephant has a long thick trunk which helps it to eat and drink. 6. Dog has sharp pointed front teeth to tear the meat. **D.** Do it yourself. **E.** Do it yourself.

UNIT 2 : MATERIALS

CHAPTER 2 : SAFETY AND HOME

A. 1. (b) 2. (a) 3. (a) 4. (c) **B.** 1. True 2. True 3. True 4. False 5. True **C.** 1. (i) Do not hit anyone or throw things at them. (ii) Do not climb on to desks. 2. Toys, bags and shoes should not be lift on the floor because someone might trip over them and get hurt. 3. We need a house to live in. It protects us from heat, cold, storm and rain. It also protects us from animals and thieves. 4. (i) A good house should be well-lit. (ii) The rooms should be airy. 5. Mosquitoes breed in dirty, stagnant water. 6. It is better to break your arms than to have something fall on your head or neck, which will probably result in unconsciousness, paralysis, brain damage or death. **D.** Do it yourself. **E.** Do it yourself.

CHAPTER 3 : AIR AND WATER

A. 1. (c) 2. (b) 3. (b) **B.** 1. Smoke 2. Noon 3. Ice **C.** Do it yourself. **D.** 1. Gases 2. Wind 3. Moves 4. Storms **E.** 1. False 2. True 3. True 4. False. **F.** 1. Air contain many gases like : Oxygen, nitrogen, carbon dioxide. 2. Water is very important thing for us. We use it to drink, bathe, wash clothes and for many other purpose. About 70% of our body weight is water. 3. **Evaporation** : When the earth gets warm, the water turns into water vapour. **Condensation** : When water vapour changes into water. 4. evaporation takes place, water vapour condense to from clouds and the condensation take place all the time. 5. Do it yourself.

CHAPTER 4 : SOIL

A. 1. (b) 2. (a) 3. (a) 4. (c) **B.** 1. Soil 2. plants and animals 3. Clayey 4. Loam
C. 1. The action of the Sun, the rain and the wind broke up the rocks to make soil. 2. No, the size of the particles are different in different types of soil. 3. By heating a container containing soil and covered with a lid over a low flame. You will see drops of water on lid. This proves that soil contains moisture. 4. Sandy soil, clayey soil and loam are the three kinds of soil. 5. (i) Plants take in water from the soil for growth. (ii) We get many useful minerals from the soil. (iii) Soil is home to many animals. 6. Loam soil. **D.** Do it yourself. **E.** Do it yourself.

UNIT 3 : THE WORLD OF THE LIVING

CHAPTER 5 : LIVING AND NON-LIVING

A. 1. (c) 2. (a) 3. (b) 4. (a) **B.** 1. True 2. True 3. True 4. False 5. True **C.** 1. Things made by humans are called man-made things. Example– table, chair, car. 2. Things given by nature are called natural things. Example– trees, animals, birds. 3. Living things eat to stay alive. 4. Plants prepare their own food with the help of air, water and sunlight. 5. Living things breathe to stay alive. They use lungs, gills or air – tubes to breathe. 6. Tree is a living thing It can transform materials from the environment into energy to grow and reproduce. A wood table is non-living thing, it is man made thing by taking a wooden piece convert into table. It cannot use the energy from sunlight to grow, produce seeds, and make more pieces of wood. **D.** Do it yourself. **E.** Do it yourself. **F.** Do it yourself. **G.** Do it yourself.

CHAPTER 6 : ANIMALS AND PLANTS

A. 1. (a) 2. (b) 3. (a) 4. (b) **B.** 1. Animals move from one place to another in search of food. 2. Green plants make their own food with the help of air, water and sunlight. 3. Crocodile didn't have gills, they have lungs. 4. Animals have sense organs. 5. Animals produce eggs. **C.** 1. Animals move from one place to another in search of food. 2. Animals like cows and buffaloes eat grass, elephants eat sugarcane and so on. Animals like lions, tigers and cats eat other animals. 3. Non-green plants get their food from dead and rotting matter. 4. (i) Some animals like birds and snakes lay eggs. (ii) Some animals like cats and dogs give birth to their young ones. 5. Most plants produce seeds. The seeds give rise to new plants. Some new plants grow from a part of the plant like stem and roots. 6. The biggest benefit that live plants provide for your aquarium is that they produce oxygen (O_2) and absorb the carbon dioxide (CO_2) and ammonia (NH_3) that your fish generate. Plants provide shelter and security for the fish. Because they compete with algae for nutrients, they can help to reduce algae growth. **D.** Do it yourself. **E.** Do it yourself.

CHAPTER 7 : PARTS OF A PLANT

A. 1. (c) 2. (a) 3. (a) 4. (c) 5. (c) **B.** 1. (c) 2. (a) 3. (e) 4. (b) 5. (d) **C.** 1. The part of the plant under the ground is called root of a plant whereas the part of the plant above the ground is called shoot of a plant. 2. (i) The root fixes the plant in the soil. (ii) Root stores the food of the plant. 3. The main function of the stem is to carry water and minerals to the leaves. 4. Green leaves in the presence of sunlight change water and carbon dioxide into food. This process of making food is called photosynthesis. 5. When the seed gets enough air. Water and warmth, the body plant starts growing. 6. After flowers are pollinated, fruit begins to develop. **D.** Do it yourself.

CHAPTER 8 : BIRDS

A. 1. (b) 2. (a) 3. (a) 4. (b) **B.** 1. (c) 2. (b) 3. (d) 4. (a) **C.** 1. The strong and sharp claws of flesh-eating birds are called talons. Talons have them to tear the flesh of their prey. 2. (i) Down feathers (ii) Flight feathers 3. Ducks have broad and flat beaks, with tiny holes at the sides whereas sparrows have short, hard and horny beak. 4. Birds build nests mostly to lay eggs in them. 5. There is a tunnel – like opening at the bottom of the nest through which the bird enters its nest. 6. Webbed feet are useful on land as well as on water because they allow birds to walk more easily on mud. **D.** Do it yourself. **E.** Do it yourself.

CHAPTER 9 : THE HUMAN BODY

A. 1. (b) 2. (a) 3. (a) 4. (c) 5. (c) **B.** 1. It protects the internal organs of our body. 2. Muscles are attached to the bones which help them to move. 3. It helps in digestion of food. 4. It helps in the circulation of blood. 5. It supplies oxygen to various parts of our body. 6. It controls all our actions like thinking, walking, talking, seeing, hearing etc. 7. It helps in the removal of waste from our body. 8. It enables a mother to bear young ones. **C.** 1. All the sense organs are connected to the brain through the nerves. 2. The hair in the nose prevent dust and germs from entering our body. 3. A group of organs together performing a task in a living body forms an organ system. 4. The organs in the digestive system are small intestine, large intestine, liver, stomach and anus. This system helps in digestion of food. 5. The reproductive system enables a mother to bear young ones. 6. Do it yourself.

UNIT 4 : MOVING THINGS, PEOPLE AND IDEAS

CHAPTER 10 : MEASUREMENT

A. 1. (a) 2. (c) 3. (b) 4. (b) 5. (c) **B.** 1. hundred 2. grams 3. milliliters and litres 4. second 5. clinical **C.** 1. Hand span, cubit and foot span. 2. Physical balance and spring balance. 3. Capacity is the quantity of a liquid which a vessel can hold. 4. The unit of capacity is milliliters and litres. 5. degree centigrade ($^{\circ}\text{C}$) or degree Fahrenheit ($^{\circ}\text{F}$). 6. Do it yourself.

CHAPTER II : LIGHT, SOUND AND FORCE

A. 1. (a) 2. (b) 3. (b) 4. (c) **B.** 1. Light 2. non-luminous 3. Moon 4. noise 5. moves **C.** 1. Objects that give us light are called luminous objects, for example – Bulb, candle etc, whereas objects that do not give us light are called non-luminous objects, for example – table, chair etc, 2. When something comes in the way of light a shadow is formed. 3. Sound that is loud and unpleasant is called noise. 4. (i) Force can move an object. (ii) Force can stop a moving object. (iii) Force can change the shape of an object. 5. Increasing effort slightly on uphill and compensating with decreased effort on downhill.

UNIT 5 : NATURAL PHENOMENA

CHAPTER 12 : OUR EARTH AND ITS NEIGHBOURS

A. 1. (b) 2. (a) 3. (b) 4. (c) 5. (b) 6. (a) **B.** 1. Once every 24 hours. 2. 365 $\frac{1}{4}$ days 3. 29.5 days 4. 29.5 days **C.** 1. The shape of the earth is round. 2. Planets are natural bodies while satellites can be man – made or natural. 3. Days and nights are caused by the rotation of earth on its axis. 4. When we cannot see the moon at all. It is called a new moon. 5. Seasons are caused by the revolution of earth round the Sun. 6. Astronomers are people who study the Sun, the moon the stars the planets. 7. It's either because it is on the other side of the earth at that time or because the brightness of the sun is overpowering the sunlight being reflected by the moon.

CHAPTER 13 : GOING INTO SPACE

A. 1. (b) 2. (c) 3. (a) **B.** 1. Neil Armstrong 2. Craters 3. sixth 4. Astronauts 5. Sunita Williams **C.** 1. Space is the region beyond the earth's atmosphere. 2. Life is not possible on the moon because there is no air. 3. Kalpana Chawla died on 1 February 2003, when her space shuttle crashed on the return journey. 4. Do it yourself.

CHAPTER 14 : WEATHER

A. 1. air 2. hottest 3. storm 4. rain **B.** 1. The condition of the air of a place at a particular time is called weather. 2. The weather keeps changing because of the sun, wind, rain and clouds. 3. Sun's rays are blocked by clouds and this makes cloudy days cooler. 4. When wind blows at a very high speed, it is called a storm. 5. Do it yourself.

MODEL TEST PAPER-I

A. 1. Plant eating animals are called herbivores. 2. A food chain is a simple sequence that shows which organism consumes another in a biological community. 3. The first help that an injured person gets is called first aid. 4. Soil is the uppermost layer of the Earth's crust. 5. Stem is the main part of the shoot system and grows above the soil. **B.** 1. elephant 2. Sandy 3. eggs 4. gills 5. nectar **C.** 1. True 2. True 3. False 4. True 5. False **D.** 1. (i) Stay away from gas stoves. (ii) Do not touch electrical gadgets or switches with

wet hands. 2. (i) A good house should be well-lit. (ii) A good house should have a proper drainage system to carry the dirty water. 3. The actions of the Sun, the rain, and the wind broke up the rocks to make soil. 4. (i) Animals move from one place to another whereas plants cannot not from one place to another. (ii) Animals have sense organs whereas plants do not have sense organs. (iii) Animals give birth to young ones or lay eggs whereas plants do not give birth to young ones. 5. Taproot is a long and thick root whereas fibrous root is a bunch of long and thin roots.

MODEL TEST PAPER-2

A. 1. talons 2. tissue 3. capacity 4. Orbit 5. Satellite **B.** 1. woodpecker 2. Tissues 3. metre 4. force 5. special suits **C.** 1. (d) 2. (a) 3. (e) 4. (b) 5. (c) **D.** 1. During the upstroke, the wings move upward and backward whereas during downstroke, the wings move downward and forward. 2. The digestive system helps in the digestion process. 3. Objects that gives us light are called luminous objects whereas objects that do not give us light are called non-luminous objects. 4. The movements of earth round the Sun is called revolution whereas the movements of earth on its axis is called rotation. 5. The condition of the air of a place at a particular time is called weather.



Teacher's Manual

Science Bullet (Class-4)

UNIT I : FOOD

CHAPTER I : FOOD AND DIGESTION

A. 1. (a) 2. (a) 3. (a) 4. (b) 5. (a) **B.** 1. We all need food to survive. Food helps us to grow and stay healthy. 2. Wheat and potatoes. 3. A balanced diet is a diet containing the right amounts of all nutrients. 4. Food is churned in the stomach. 5. Digestion completes in the small intestine. 6. The undigested food pass into the large intestine. 7. Food is cooked because – (i) It makes the food more tasty, (ii) It makes the food soft and easy to digest. (iii) It kills germs present in the food. Boiling, steaming, frying and roasting are different ways of cooking food. 8. The process of treating food in a way that preserves its value for a long time is called preservation. Food can be preserved in various ways – (i) Refrigeration of food item (ii) Boiling milk. **C.** 1. False 2. True 3. False 4. False 5. True 6. True 7. True 8. False **D.** 1. Fats 2. C 3. saliva 4. wash 5. preservation. **E.** Do it yourself.

CHAPTER 2 : TEETH AND MICROBES

A. 1. (b) 2. (a) 3. (c) 4. (a) 5. (b) **B.** 1. Dentine 2. Microscope 3. Protozoa 4. Apples 5. Bacteria **C.** 1. chocolates 2. germs 3. protozoa 4. crown 5. 32, 16, 16 6. dentist **D.** 1. Teeth help to bite and chew our food. 2. Temporary teeth and permanent teeth. 3. Molars – They help in grinding food. Premolars – They act like nutcrackers and help in crushing food. 4. Calcium and Vitamin C are important for healthy teeth and gums. 5. (i) Brush your teeth twice in a day. (ii) Use a dental floss to clean between two teeth. (iii) Avoid eating too many chocolates. 6. Microbes are very small living things that can be seen only through a microscope. There are four kinds of microbes – Bacteria, Virus, Fungi and protozoa. 7. Cholera, typhoid, tuberculosis, malaria. 8. Cold, Chickenpox, German measles, Whooping cough 9. Do it yourself.

UNIT 3 : MATERIALS

CHAPTER 3 : SAFETY FIRST

A. 1. (b) 2. (c) 3. (b) 4. (a) 5. (a) **B.** 1. Accidents 2. mopped, wet 3. matchbox, matchsticks 4. stairs 5. zebra crossing 6. first aid **C.** 1. False 2. True 3. False 4. True 5. True **D.** 1. We should follow safety rules to avoid accidents. 2. (i) Always cross the road at the zebra crossing. (ii) Do not play or run on the road. (iv) Always follow the traffic lights. 3. (i) Make him / her lie with the head lower than the body. (ii) Allow fresh air around the person. It gives blood to his brain. 4. In the bathroom, take care that the floor is dry and there is no shampoo or soap on the floor. 5. The immediate help provided to an injured person before the doctor's arrival is called first aid.

CHAPTER 4 : CLOTHING

A. 1. (a) 2. (c) 3. (b) 4. (a) **B.** 1. False 2. True 3. True 4. True 5. True 6. False

C. 1. We need clothes because they protect our body from heat of sun, dust, cold, rain and insect bites. 2. The fibres are put together by various processes to make broad spreads of clothes called fabrics. 3. Fibres are long, thin strands or threads of materials. 4. A natural fibre is one that is obtained from plants and animals whereas a synthetic fibre is a human – made fibre. 5. We wear woollen clothes in winter because they protect us from cold. 6. We wear socks and shoes to protect our feet from dust, heat, cold, germs and worms. 7. We should jeep mothballs or dried neem leaves between the folds of woollen clothes.

CHAPTER 5 : SOLIDS, LIQUIDS AND GASES

A. 1. (b) 2. (c) 3. (c) 4. (b) **B.** 1. molecules 2. shape, size and volume 3. higher, lower 4. directions 5. freezing. **C.** 1. Anything which has weight and occupies space is called matter. 2. Molecules are the smallest substances in matter that can exist independently. 3. Solids have a definite shape and size because the molecules are packed very closely. 4. The ability of a liquid to dissolve other substances in it is known as solubility. 5. By filling same amount of gas in two balloons of different sizes.

CHAPTER 6 : PLANTS : OUR GREEN FRIENDS

A. 1. (c) 2. (a) 3. (a) 4. (a) 5. (b) 6. (a) **B.** 1. living 2. chlorophyll 3. Main vein 4. Stomata 5. crotons 6. producer – plant **C.** 1. False 2. True 3. True 4. True 5. True **D.** 1. Leaves are called 'kitchen of the plant' because they make food for plants. 2. The process by which green leaves prepare food for the plant using water from the soil and carbon dioxide from the air in the presence of sunlight and chlorophyll is called photosynthesis. Chlorophyll and sunlight are essential for photosynthesis. 3. Oxygen 4. Food chain is a community of organisms where each member is eaten in turn by another member. Example– Plants are eaten by deer and deer is eaten by a lion. 5. Human beings animals need food which they obtain from plants and plants need carbon dioxide which they obtain from animals.

CHAPTER 7 : PLANTS : LIVING AND SURVIVING

A. 1. (b) 2. (c) 3. (b) 4. (a) 5. ?? 6. (c) 7. (c) **B.** 1. everywhere 2. terrestrial 3. aquatic 4. sticky and clayey 5. birds **C.** 1. Breathing roots grow out of the soil and water to breathe. 2. The stem of lotus is light and hollow and lotus plants are fixed to the bed of the pond. 3. Wheat, rice, bajra, jawar, sugar and fodder. 4. Baskets, chairs, tables, brooms, mats and curtains. 5. Venus flytrap, Pitcher plant.

CHAPTER 8 : REPRODUCTION IN ANIMALS

A. 1. (b) 2. (b) 3. (a) 4. (a) 5. (b) **B.** 1. Mammals 2. Yolk 3. Moulting 4. caterpillar **C.** 1. By reproducing, a living thing can be sure that there is

another individual of its kind to take its place when it dies. 2. 21 days 3. Incubation–The development of embryo by the warmth is called incubation. Hatching–When the chick comes out of the egg by breaking the shell, it is called hatching. 4. Tadpole and then frog. 5. Parental care is the care for the babies by their parents for a long period of time. 6. Do it yourself.

CHAPTER 9 : LIVING AND SURVIVING

A. 1. (a) 2. (c) 3. (a) 4. (c) 5. (b) **B.** 1. True 2. False 3. True 4. True 5. True **C.** 1. The natural surroundings where an animal lives is called its habitat. 2. Animals can be classified according to their habitat as terrestrial, aquatic, amphibian, aerial and arboreal. 3. Animals can be grouped according to their feeding habits as herbivores, carnivores, omnivores or parasites. 4. Light bodies of aerial animals help them to fly. 5. Camel has padded feet to move on hot sand which help to walk on sand without sinking into it. 6. Camouflage is the kind of blending into the background.

UNIT 4 : MOVING THINGS, PEOPLE AND IDEAS

CHAPTER 10 : FORCE WORK AND ENERGY

A. 1. (b) 2. (a) 3. (c) **B.** 1. False 2. True 3. True 4. False **C.** 1. (a) Work – Work is done when force moves an object through a certain distance. (b) Force – A push or pull applied on a body is called force. **C.** Energy – Energy is the ability to do work. 2. Work is made easier by using tools. These tools are called simple machines. 3. Solar energy is used in solar cookers and solar heaters for cooking and heating. Plants also use solar energy to make their food. 4. Do it yourself.

UNIT 5 : NATURAL PHENOMENA

CHAPTER 11 : THE EARTH AND ITS NEIGHBOURS

A. 1. (a) 2. (b) 3. (c) 4. (b) **B.** 1. True 2. False 3. True 4. True 5. False **C.** 1. The slow moving bright bodies are called planets while the tiny specks of light that appear in the sky are stars. 2. The Sun and its family of eight planets together is known as the solar system. 3. The movement of earth on its axis is called rotation while the movement of earth, around the Sun is called revolution. 4. The outer layer of the earth is called the crust. The mantle lies below the crust and below the mantle lies the core. 5. Change of season takes place due to the tilt of the earth and its revolution around the Sun.

CHAPTER 12 : AIR, WATER AND WEATHER

A. 1. (a) 2. (c) 3. (c) 4. (b) 5. (b) **B.** 1. thunderstorm 2. faster 3. droplets of water 4. filtrate 5. Hailstones **C.** 1. Air currents are set up when hot air rises and cooler air takes its place, causing wind. 2. Cold air from the land moves towards the sea to take up the space of the Warm air. Such a breeze is called land breeze. 3. When water vapour cools suddenly, it freezes into

tiny snowflakes while when raindrops pass through a very cold region of the atmosphere, they freeze and form hail. 4. The process of water vapour changing to liquid water is called condensation while the process in which water changes its physical form from liquid into gas is called evaporation.

5. Sedimentation, decantation and filtration. 6. (i) Lack of rains and long hot and dry periods destroy the crops. (ii) Hailstones damage the blossoms, fruits, ears grain etc.

CHAPTER 13 : OUR ENVIRONMENT

A. 1. (a) 2. (a) 3. (a) **B.** 1. living, non-living 2. Environment 3. food 4. clean
C. 1. True 2. True 3. False 4. True 5. False **D.** 1. (v) 2. (iv) 3. (i) 4. (iii) 5. (ii)
E. 1. Pollution is the undesirable change in water, soil or air that brings down the natural quality of the environment. 2. We can prevent soil erosion by planting more trees and protecting forests from being cut down. 3. Cutting down of trees in a large number is called deforestation. 4. People all over the world have become aware of their duty to preserve the environment so that everyone can lead a healthy life. 5. World Environment Day is the United Nations day for encouraging worldwide awareness and action to protect our environment. Since it began in 1974, the event has grown to become a global platform for public outreach that is widely celebrated in over 100 countries.

MODEL TEST PAPER – I

A. 1. carbohydrates 2. fats 3. Calcium 4. hurry 5. tanned. **B.** 1. True 2. False 3. False 4. True 5. True **C.** 1. (e) 2. (a) 3. (b) 4. (c) 5. (d) **D.** 1. Cheese, Pulses 2. Bacteria, Virus 3. Wool, Silk 4. Mushroom, 5. Lotus, Water Hyacinth **E.** 1. (i) Eat at regular intervals. (ii) Chew your food well before swallowing. (iii) Do not overeat. 2. Incisors, canines, premolars and molars. 3. (i) Do not push others while playing. (ii) Do not go very high on the swing. (iii) Always wait for your turn on the swing. 4. A synthetic fibre is a human made fibre. These fabrics are stretchable, water – proof and wrinkle free. 5. Solid, liquid and gas are the three states of matter.

MODEL TEST PAPER – 2

A. 1. Reproduction 2. Metamorphosis 3. Parasites 4. Force 5. Aryabhata
B. 1. habitat 2. whole 3. wind 4. Saturn 5. storm **C.** 1. True 2. True 3. True 4. False 5. False **D.** 1. Cow, Elephant 2. frog, crocodile 3. Muscular force, frictional force 4. Lever, pulley 5. Mud, Stones **E.** 1. Mammals take care of their babies by feeding them and cleaning them. 2. Animals that live on land are called terrestrial animals while animals that live in water are called aquatic animals. 3. Camouflage is the kind of blending into the background. 4. Work is done when force moves an object through a certain distance. 5. The earth moves around the Sun along a fixed path and the fixed path is called as orbit.

Teacher's Manual

Science Bullet (Class-5)

UNIT I : FOOD

CHAPTER 1 : REPRODUCTION IN PLANTS

A. 1. (c) 2. (b) 3. (a) **B.** 1. (b) 2. (g) 3. (h) 4. (c) 5. (d) 6. (a) 7. (e) 8. (f) **C.** 1. Seed coat, baby plant and cotyledons. 2. A seed needs air, warmth, water and good soil to germinate. 3. Seeds scatter away from the mother plant so that they get favourable conditions to grow. 4. The practice of farming including cultivation of the soil for growing of crops is called agriculture. 5. Crop season is a season in which a particular kind of grains, fruits and vegetables are grown by a farmer at a particular place. 6. We spray pesticides on crops to protect the crops against pests, locusts etc. 7. All seeds cannot be dispersed by seeds as for this they need to be light weight and have hairs or wings so that wind can carry them off. All seeds don't have all these features so they are dispersed by different methods as per their characteristics. 8. The soil type of Maharashtra and weather condition is not suitable for apple growing.

CHAPTER 2 : FOOD AND HEALTH

A. 1. (c) 2. (a) 3. (c) 4. (b) 5. (c) **B.** 1. (c) 2. (b) 3. (e) 4. (d) 5. (a) **C.** 1. True 2. False 3. False 4. False 5. False 6. False 7. True 8. False 9. True **D.** 1. The substances and minerals that are found in our food are called nutrients. The main nutrients are carbohydrates, fats, proteins, vitamins and minerals. 2. Carbohydrates are needed by us to obtain energy. Rice and bread are the sources of carbohydrates. 3. Proteins are needed for our growth. Also, our body needs proteins for repairing worn – out tissues. Eggs and milk are the sources of proteins. 4. Vitamins are needed for the smooth functioning of our body. Fruits and vegetables are the sources of vitamins. 5. A diet that contains adequate amount of different components of food required for the healthy functioning of our body is called a balanced diet. 6. The diseases that are not passed on from one person to another are known as non-communicable diseases. Scurvy and Beri-beri are non-communicable diseases. 7. The diseases that are spread from one person to another are known as communicable diseases. Example – typhoid, malaria. 8. Vaccination is a way of protecting ourselves by acquiring immunity. 9. These vegetarian protein sources make it easy to get your protein fill if you're eating a vegetarian or vegan diet. Protein is a key nutrient for growing and maintaining muscles and keeping your skin and hair strong and healthy. It also helps keep you full. 10. Cold and cough are common viral infection that occurs in nose and throat. As it is caused by virus which is not visible to eyes, these can spread easily. The reason behind parents preventing their children from going to school when they have cold and cough is to prevent other kids at school from getting infected.

UNIT 2 : MATERIALS

CHAPTER 3 : SAFETY AND FIRST AID

A. 1. (a) 2. (a) 3.(a) 4. (b) **B.** 1. If there is a footpath, you must use it. (ii) Use zebra crossing to cross the road. (iii) In case there is no footpath, you must walk as near as possible to the left hand side of the road, facing oncoming traffic. (iv) Look for a safe place to cross the road if there is no zebra crossing. (v) Look right, then left and again right for traffic before crossing the road. Take long and firm steps to cross the road. Do not run. (vi) Do not cross near or in front of parked vehicles. 2. We should not use water to put out a fire caused by electricity because water is a good conductor of electricity. 3. First aid is the aid or treatment given to the injured before the arrival of a doctor. 4. We can put a sling around the broken arm. 5. A person bitten by a poisonous snake must be rushed to the hospital immediately. In some cases, a tight bandage can be tied between the wound and the heart to slow the spread of poison in the body. 6. Until the past few years, the recommended first aid for a snakebite was to tourniquet the area above the bite, cut the skin open, suck out the venom and then spit it out. The reasoning behind this was that you could remove much of the venom before it had a chance to enter the victim's bloodstream. 7. subways are the safest places to cross busy roads as they keep pedestrians well away from the dangers of traffic.

CHAPTER 4 : SOLIDS, LIQUIDS AND GASES

A. 1. (a) 2. (c) 3. (a) 4. (c) 5. (c) 6. (b) **B.** 1. Solid, liquid and gas 2. immiscible 3. carbon dioxide 4. solid 5. chemical **C.** 1. True 2. False 3. True 4. True 5. False 6. True 7. False. **D.** 1. The force of attraction is greatest in solids, hence, solids are hard and cannot flow while the force of attraction is the least in gas, hence, the molecules of gas can easily flow in any direction. 2. When two liquids mix with each other and appear as one liquid, they are said to be miscible. If they do not mix, they are said to be immiscible. 3. The changes that can be reversed are called reversible changes while the changes that cannot be reversed are called irreversible changes. 4. When the change is only in state of matter, it is called a physical change while in chemical changes, new substances are formed. **E.** 1. all matter are made up of very – very small particles called molecules. 2. The three states of matter are solid, liquid and gas. 3. Fish breathe in the Oxygen dissolved in water. 4. Each molecule of water contains two atoms of hydrogen. Similarly, carbon dioxide is made up of one carbon atom and two oxygen atoms. 5. By heating a salt solution over a fire, the water boils and evaporates and the salt is left behind. 6. When two liquids completely dissolve in each other such that they appear as one then the liquid is said to be miscible. An important property of miscible liquids is that both the liquids that are

to be dissolved should either be polar or non polar so that they mix well and lose their separate identity.

CHAPTER 5 : SOIL EROSION AND CONSERVATION

A. 1. (a) 2. (c) 3. (a) 4. (b) 5. (a) 6. (a) **B.** 1. Soil 2. Top soil 3. parent 4. Overgrazing 5. afforestation **C.** 1. Soil is formed when rocks break down into tiny pieces due to the repeated heating and cooling by the sun, rain and winds. 2. Topsoil contains most of the nutrients and water. It is rich in humans. 3. Soil erosion is defined as wearing out and carrying away of the top soil by natural forces. Sun, wind and running water are the agents of soil erosion 4. The removal of vegetation or plants from the surface of the soil and ploughing of hill slopes are the human factors that lead to soil erosion. 5. The protection of soil from being washed away or blown away by eroding agents (winds, water, etc) is called soil conservation. 6. Building embankments along river banks prevents soil erosion. 7. Soil is made up of air, water, minerals and organic material and is one of the most important natural resources on earth. Soils provide readily available nutrients to plants and animals by converting dead organic matter into various nutrient forms.

CHAPTER 6 : ROCKS AND MINERALS

A. 1. (c) 2. (b) 3. (c) 4. (a) **B.** 1. Magma 2. Basalt 3. Sediments 4. Conglomerate 5. Petroleum **C.** 1. True 2. True 3. False 4. False 5. True 6. True **D.** 1. According to the formation of rocks, these are classified as igneous, sedimentary and metamorphic rocks. 2. Sediments get deposited in layers at the bottom of lakes and oceans. Layers of sediment are cemented together to form sedimentary rocks. 3. The rocks formed by heat and pressure are called metamorphic rocks. 4. Metallic minerals are those minerals which can be melted to obtain new products whereas non-metallic minerals are those which do not yield new products on melting. 5. (i) Coal is used as a fuel for cooking food. (ii) Coal is used for the manufacture of coal – gas, coal – tar, pitch, etc. 6. Petroleum is formed by the pressing of dead creatures. The heat and weight of the rocks pressing on the piles of dead, rotting plants and animals turn them into liquid oil. 7. Always Wear Safety Equipment, Follow the Latest Safety Standards, Don't Ignore the Danger.

CHAPTER 7 : LIFESTYLES OF ANIMALS

A. 1. (a) 2. (a) 3. (c) 4. (b) 5. (c) **B.** 1. True 2. True 3. True 4. False 5. False **C.** 1. The surrounding in which an animal lives, eats, grows and has babies is called its habitat. 2. An adult frog breathes through its lungs on land under water, it breathes through its moist skin. 3. Herbivores eat only plant and plant products while carnivores feed on the flesh of other animals. 4. Animals move about to protect themselves from enemies. They also move about to look for shelter or to breed. Movement of animals over

large distances due to shortage of food, cold weather or to breed is called migration. Animals migrate to protect themselves from enemies. 5. Most animals that migrate do so to find food or more livable conditions. Some animals migrate to breed. 6. They move in a wavy motion because they don't have legs. They use their muscles and their scales to move.

UNIT 3 : THE WORLD OF THE LIVING

CHAPTER 8 : OUR SKELETAL SYSTEM

A. 1. (a) 2. (a) 3. (c) 4. (c) **B.** 1. (a) 2. (d) 3. (b) 4.(c) **C.** 1. Skeletal muscles are used in running, walking, laughing and eating. 2. Bones join together to form joints. 3. Pivot joint, Ball and socket joint, Gliding joint and Hinge joint are the movable joints. 4. Muscles, that move at our will are called voluntary muscles and muscles, that move without our will, are called involuntary muscles. 5. You won't be able to perform many tasks that we can't do without bending.

CHAPTER 9 : OUR NERVOUS SYSTEM

A. 1. (b) 2. (a) 3. (b) 4. (a) **B.** 1. True 2. True 3. True 4. True **C.** 1. The brain, spinal cord and the nerves make up the nervous system. 2. Cerebrum, cerebellum and Medulla are the parts of the brain. 3. Nerves are the thin thread like structures spread throughout the body. They link every part of the body to the brain. 4. (i) We should have bath with soap and clean water. (ii) We should wear clean clothes. 5. Because of the fatal risk of traumatic brain injury is so high while driving a scooter or bike without helmet. So Wearing a helmet that is approved by the Department of Transportation is one of many precautions a rider can take to increase safety on the open road.

CHAPTER 10 : FORCE

A. 1. (a) 2. (c) **B.** 1. gravity 2. easy **C.** 1. False 4. True 5. True **D.** 1. A force is a push or a pull on an object. 2. A Force that shows down the movement of objects across a surface is called friction. 3. The force applied by a magnet on an object is called magnetic force or magnetism. 4. When things are rubbed with each other They become charged and a force is called electrostatic force. 5. Gravity is a force of Earth that makes things fall to the ground.

CHAPTER II : SIMPLE MACHINES

A. 1. (a) 2. (b) 3. (b) **B.** 1. Load 2. ramps 3. pulley 4. axe 5. wedge **C.** 1. Simple machines help us to do work by applying force at a convenient point which either changes the directions of force or increases the force applied. 2. A lever is a rigid rod fixed at one point called the fulcrum. First class levers – In these levers, fulcrum (F) is in between the load (L) and

effort 'E'. Example– see–saw Second class levers – In these levers, load (L) is in between the fulcrum (F) and effort (E). Example – Nutcracker. Third class levers – In these levers, the effort (E) is in between the fulcrum (F) and load (L). Example – Knife. 3. An inclined plane is a slope which makes work easier. It is easier to walk up a slope than climbing a ladder to some height. 4. A single fixed pulley is used to draw water from wells, raise or lower flags and draw curtains. 5. knives and nails are the examples of wedges we use in our day-to day life. 6. The force of gravity attracts everything to the center of the earth. So when a cyclist moves down to the hill, the force of attraction gets more stronger and the speed increases due to this. This makes it hard for a cyclist to handle the cycle as compare to moving up the hill.

UNIT – 5 NATURAL PHENOMENA

CHAPTER 12 : ESSENTIAL FOR LIFE

A. 1. (a) 2. (c) 3. (c) **B.** 1. Oxygen 2. Exosphere 3. Nitrogen 4. humidity 5. evaporation, distillation. **C.** 1. All living things need air to breathe. Human beings cannot live without air for more than a few minutes. 2. There is no weather in the stratosphere. The ozone layer is the part of the stratosphere. It absorbs the harmful radiations from the sun. 3. The settling down of impurities is known as sedimentation. After sedimentation, the clear water of the upper layer is poured into another beaker without disturbing the impurities. This is known as decantation. 4. The separation of mixture of soil from water by using filter paper is called filtration. 5. The process of purifying a liquid by boiling it and condensing its vapours is known as distillation. 6. When the water inside a soda turn to ice inside the freezer, it expands and pushes the carbon dioxide out, causing an explosion.

CHAPTER 13 : THE MOON

A. 1. (b) 2. (c) 3. (a) 4. (c) **B.** 1. craters 2. Transparent 3. total solar 4. two, two 5. Aryabhata **C.** 1. True 2. True 3. True 4. False 5. True 6. False **D.** 1. The surface of the moon is rough and uneven. It has great plains and big mountains. Rocks and dust cover the surface of the moon. The surface of the moon has ditches called craters. 2. There is no life on the moon as it has no air. As there is no atmosphere, so there is no protection against the strong rays of the sun. 3. The gravitational forces of the sun and the moon combine to pull on Earth's water causing the tides. The water of seas on the side of the earth facing the moon is attracted upwards and causes high tide. In the areas between the two high tides, the water forms low tide. 4. The objects through which light can pass partially. They form faint shadows, for example – butter paper etc. 5. Artificial satellites are useful in the following ways – (i) Communication satellites are used to send

telephone conversation and television programmes around the world. (ii) Weather satellites help to study weather pattern and forecast the weather. (iii) Military satellites can detect the launch of missiles, etc. (iv) Space satellites are used to study the outer space, planets and stars. 6. When the moon comes between the sun and the earth the moon casts its shadow on the earth. This is called solar eclipse. 7. When the moon is partly hidden by the dark shadow of the earth, it is called partial lunar eclipse. 8. Because the WEIGHT of the object is much less on the moon than on earth. Weight is just the downward force exerted by the planet on that body.

CHAPTER 14 : NATURAL DISASTER

A. 1. (c) 2. (a) 3. (a) **B.** 1. True 2. True 3. False 4. True **C.** 1. (i) An earthquake always causes destruction of lives and property. (ii) The earthquake also cause landslides and fires. 2. The earthquakes are recorded by an instrument known as seismograph. The magnitude of an earthquake is measured on Richter scale. 3. Tsunami is a massive, sudden, unexpected and very large ocean waves. There are caused by a sudden displacement. This could be due to undersea earthquake, an undersea landslide or nuclear / artificial strike. 4. Heavy rainfall makes the rivers overflow which causes floods in near by areas. Causes of floods are – (i) Melting of snow in the summer causes rivers to overflow. (ii) Collapse of a dam which makes the excess water flow into adjoining areas. 5. Drought is the outcome of changes in the earth’s atmosphere. Drought affects plants, animals and people. It is a serious problem for farmers for farmers too. 6. A lot of ash also comes out along with lava . A volcano also cinders pumice and gases. The lava can destroy forests and cities that come across it. The volcanoes release clouds of poisonous gas. It causes ill-health if inhaled. 7. Earthquake drills are the most important. Their purpose is to help students (and staff) learn how to REACT immediately and appropriately.

CHAPTER 15 : OUR ENVIRONMENT

A. 1. (a) 2. (c) 3. (c) 4. (b) **B.** 1. True 2. True 3. False 4. True 5. True **C.** 1. (i) Water pollution causes diseases such as typhoid and diarrhea. (ii) Oil skills in the sea affects the marine life. 2. (i) We should dispose off wet waste and dry waste separately. (ii) Decomposable waste must be managed properly. (iii) The use of plastic bags must be avoided. (iv) We must install CNG kits in our vehicles. 3. A greenhouse is used to grow plants in winter. It is a house made of plastic or glass which traps the heat of the sun to allow plants to grow in winter. 4. The heating up of the earth is called global warming. 5. The main greenhouse gases are carbon dioxide, methane, ozone, CFC and water vapour. 6. Deforestation is a contributor to global warming, and is often cited as one of the major causes of the enhanced greenhouse effect. Tropical deforestation is responsible for approximately

20% of world greenhouse gas emissions. 7. burning of fuels, too much use of chemical fertilisers, too much cutting tree.

MODEL TEST PAPER – I

A. 1. The process of a seed growing into a plant is called germination. 2. The large amount of grains, fruits and vegetables grown by a farmer in a particular season in a particular place is called crop. 3. Any thing that has mass and occupies space is called matter. 4. Soil erosion is defined as wearing out and carrying away of the top soil by natural forces. 5. Planting of trees in large scale on open land which has not been a forest is known as afforestation. **B.** 1. Molecules 2. physical 3. minerals 4. Basalt 5. limestone
C. 1. True 2. True 3. True 4. False 5. False **D.** 1. (e) 2. (a) 3. (d) 4. (b) 5. (c) **E.** 1. Crops grown from November to April (winter) are called rabi crops while the crops grown from June to October (summer) are called Kharif crops. 2. Because water is a good conductor of electricity. 3. When two liquids mix with each other and appear as one liquid, they are said to be miscible. If they do not mix, they are said to be immiscible. 4. We can conserve soil by afforestation, terrace farming and construction of embankments. 5. The lava cools and hardens below the earth's crust and forms igneous rocks while the rocks formed by heat and pressure are called metamorphic rocks.

MODEL TEST PAPER – 2

A. 1. Habitat 2. Migration 3. cartilages 4. Brain 5. Motor nerves. **B.** 1. Siberian crane, Artic tern. 2. Eyes, Skin 3. See-saw, scissors 4. Knives, Nails. 5. INSAT, BHASKARA **C.** 1. Gills 2. Pivot 3. Medulla 4. Exosphere 5. drought
D. 1. True 2. True 3. False 4. True 5. False **E.** 1. Animals move around to find food. They move about to protect themselves from enemies. They also move about to look for shelter or to breed. 2. The main functions of the skeleton are – (i) The bones of the skeleton form a body skeleton. (ii) They give shape and support to the body. (iii) They help us to stand upright. (iv) They protect the delicate internal organs. 3. Joints that cannot be moved are called Immoveable joints while joints which help in movements are called movable joints. 4. A pulley is a wheel with a groove in it. It can turn about a fixed rod that passes through its centre. A single fixed pulley is used to draw water from wells, raise or lower flags and draw curtains. 5. We can purify drinking water in the following ways – (i) Boiling (ii) chlorination (iii) Water purifier.

