Chapter-1 Our Environment

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| **S.No.** | **Main points** | **Explanation** |
| 1 | Environment | There are two types of objects in our surroundings. Both biotic (living things) and abiotic (non -living) components together constitute our environment |
| 2 | Biotic Components | All living organisms are called biotic components. Examples-Plants and animals |
| 3 | Abiotic Components | All non living things are called abiotic components. Examples-Air, Water, Soil, Tempreture, light |
| 4 | Producers  (**AutoTrophs** - Auto-Self, Trophs-Food) | All green plants are called producers because they prepare their own food by the process of photosynthesis.  Sunlight  Carbon dioxide +Water Glucose + Oxygen  Cholorophyll |
| 5 | Consumers  Heterotrophs-  Hetero-other, trophs-food | Animals cannot prepare their own food they depends on plants for their food . |
| 6 | Herbivores  (Primary consumers) | Those animals who eat plants like grass and fooder are called herbivores. Examples- Goat, cattle |
| 7 | Carnivores  (Secondary consumers) | Those animals who feed on plants indirectly are called Carnivores. Examples- Tiger, lion |
|  | Food chain | The process of one organism eating the other and getting eaten by another is called food chain.  Grass Deer lion  (Producers) (Primary consumers) (Secondary consumers) |
| 8 | Decomposers | Those organism derive their food from dead and decaying plants and animals they are called decomposers.Fungi , bacteria |
| 9 | Scavengers |  |
| 10 | Biodegradable  (Bio-living organism, Degradable-Decomposable) | Those materials which can be broken down into simpler substance by microorganism are called bio-degradable. |
| 11 | Non-Biodegradable | Those materials which cannot be broken down into simpler substance by microorganism are called non-biodegradable. Example- Plastic |
| 12 | Vermicomposting | The process of forming compost with the help of worms is known as vermicomposting. |
| 13 | Rain Water harvesting | Rain water harvesting is a way to capture rain water when it rains, Roof top rain water harvesting rain water can be stored in tanks ,pits and small wells . It can supplement the requirement of water in cities and raise the sub soil water level for urbon greenery. |
| 14 | Mineral cycle | Dead plants  and animals    Animal dropping  Animals Decomosers  Green plants Minerals  Soil |

Chapter- Food

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| Main Points | Explanation |
| Food | Food provide energy needed by living beings to do work. |
| Food from plants | Plants prepare their own food by the process of photosynthesis. |
| Food from Animals | Animals from an important source of our food.  Example- Milk, Eggs, Meat |
| Energy giving food | Carbohydrates and Fats |
| Body building food | Proteins |
| Protective foods | Vitamins and Minerals |
| Vitamins Function Deficiency Disease | |
| Vitamin A | Needed for healthy eyes Night blindness ,Dryness of skin  Skin and tissues |
| Vitamin B | Needed for making muscles strong Beri Beri |
| Vitamin C | Needed for healthy gums, Scury, bleedings gums |
| Vitamin D | Needed for healthy bones Rickets, curved bones |
| Vitamin E | Smooth functioning of reproductive system Sterlity |
| Vitamin k | Helps in blood clotting Prolonged and profuse bleeding due to delayed clotting of blood |
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| Calcium | To build healthy bones and teeth |
| Phosphorus | Growth of bones and teeth |
| Iron | Formation of haemoglobin in the blood. Its deficiency causes anaemia |
| Iodine | Proper functioning of thyroid gland its deficiency causes goitre |
| Roughage | Cellulose cannot be digested by our body. Cellulosic dietary fibres constitute the roughage. Roughage helps in bowel movement and prevents constipation. |
| Goitre | Goitre is an iodine deficiency disease . |
| PEM | Protein Energy Malnutrition |
| PCM | Protein-Calorie-Malnutrition |
| Kwashiorkor | Kwashiorkor is seen in infants upto 3 years of age when their diet does not contain enough milk. |
| Marasmus | Marasmus is seen when child does not get enough food. |
| Obesity | When children eat more and get body gets extra calories and these extra calories are stored below the skin.The person becomes obese. |

Nature of matter

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| Main points | Explanation |
| Natural materials | The materials which occur naturally are called natural materials. |
| Synthetic materials | The materials which are prepared in the factories are called synthetic materials. |
| Matter | Matter is something which has mass and which occupies space.  Example- Solid, Liquid and Gas. |
| Solid | In solids , the particles are very tightly packed with each other and cannot move. Hence solid have a fixed shape and volume. |
| Liquid | In liquid, the particles are less tightly packed and can move a little. Liquids have a fixed volume but do not have a fixed shape. |
| Gases | In gases, the particles are not held to each other. They move far apart from each other. Gases, therefore, neither have a fixed shape nor a fixed volume. |
| Properties of matter | Transparency, Floating,/Sinking, Diffusion, Dissolution |
| Solubility | The maximum amount of a substance that can be dissolved in a given volume of water is called the solubility of that substance. |
| Saturated Solution | The solution which more of the substance cannot be dissolved is called a saturated solution. |

Separation of Substances

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| Main points | Explanation |
| Mixture | A mixture is formed when two or more substances are mixed together in any proportion |
| Homogeneous mixture | A homogeneous mixture is that which has the same composition through out, that is its components are uniformly distributed and cannot be distinguished from each othe. |
| Heterogeneous mixture | A heterogeneous mixture is that which does not have the same composition throughout, that is , its components are not uniformly distributed and can be distinguished from each other. |
| Separating the components of mixture |  |
| Mixture of solids with solids | Hand picking, Threshing, Sieving, magnetic separation Sublimation |
| Mixture solids with liquids | Evaporation ,Crystallization, Sedimentation, loading, Filtration, Centrifugation |
| Mixture of Liquids with Liquids | Immiscible liquids |
| Sublimation | The process in which a solid changes directly into gaseous state on heating is called sublimation. |
| Sedimentation | Sedimentation is the process by which the insoluble heavy solid particles settle down on their own in a solution. |
| Decantation | The process obtaining clear liquid by pouring it into another container without disturbing the sediments called decantation. |
| Filtration | Filtration is the process of separating insoluble solids from a liquid using fine pores of the filter. |
| Centrifugation | Centrifugation is the method used to separate the fine particles suspended in a liquid by rotating the mixture at high speed. |
| Crystallization | This process is used to obtain pure solids from a solution. |
| Evaporation | Evaporation is a process in which a liquid changes into gaseous form on heating. |

Work and Energy

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| Main points | Explanation |
| Work | Work is done by a force only when this force, acting on a body, produces some displacement of the body in its own direction. |
| Measurement of work | Measurement of work depends on two factor-  1.Amount of force applied  2. Displacement of the object produced by the applied force.  W=F X S  W= Work  F= Amount of force  S= Displacement produced in the direction of force |
| Mechanical energy | If an possesses either potential energy or kinetic energy or both, we say that the object has mechanical energy. |
| Light energy | Objects often give out light when they are hot |
| Sound energy | Sound is also a form of energy. It produced when an object vibrates. |
| Electrical energy | Electricity is used to run different electric appliances. We use electric energy to produce heat , light, sound and motion |
|  | We can convert one form of energy into another form of energy but we can neither create nor destroy energy. We call this as the principle of conservation of energy. |