BIOLOGY - SYLLABUS

8th CLASS

- Observing microorganisms in water
 - Observing fungi
 - Observing Bacteria
 - Observing Algae
 - Observing Protozoans and Micro-arthropods
 - Observing Soil Microorganisms
- 3.3 Viruses Introduction

3. Microbial World - 2

- 3.1 Useful Microorganisms
 - 3.1.1 Observing microorganisms in Maida Yeast Mixture
- 3.2 Commercial use of Microorganisms
 - Medicinal use of Microorganisms
 - 3.2.1 Antiboitic Invention of Penicillin
- 3.3 Vaccines
 - 3.3.1 Invention of Vaccine against Smallpox
- 3.4 Soil Microorganisms and Soil Fertility
 - 3.4.1 Nitrogen Fixation
- 3.5 Harmful Microorganisms
 - 3.5.1 Microorganisms causing disease ins Man
 - 3.5.2 Microorganisms causing diseases in Animals
 - 3.5.3 Microorganisms causing diseases in Plants
- 3.6 Food Preservation
 - 3.6.1 Preserving food in heat and cold method, packing
 - 3.6.2 Pasteurisation

1. What is Science?

- 1.1 Science The individual perspective
- 1.2 Science The Social perspective
- 1.3 Science and Change
- 1.4 How do scientists work? Scientific Method
- 1.5 Process Skills
- 1.6 Reading to learn Writing to Communicate
- 1.7 Safety in the Laboratory Safety in Science
- 1.8 Some of the divisions in Science (Science Some Divisions)

2. Cell - The Basic Unit of Life

- 2.1 Discovery of the cell
 - Observing cells in a match stick
 - Observing cells in an onion peel
 - Observing human cheek cells
- 2.2 Cell Nucleus Robert Brown Experiment
 - Observing the Nucleus in onion peel
 - Observing the Nucleus in human cheek cell
- 2.3 Diversity in cells
 - Observing the cells in the leaf
 - Observing the different cells in Human body.

3. Microbial World -1

- 3.1 Invention of Microscope Discovery of Microorganisms
- 3.2 Groups of Microorganisms Observation

Reproduction in Animals 4. 4.1 Oviparous and Viviparous Animals 4.2 Identifying the method of reproduction based on ears, hair on the skin and feathers 4.3 Kinds of / types of Reproduction in Animals - Sexual and Asexual Reproduction Asexual Reproduction Budding in Hydra 4.4.1 Binary fission in Amoeba Sexual Reproduction 4.5 Male Reporductive System in Human Beings Female Reproductive System in Human Beings Fertilization - Development of an Embryo • External and Internal Fertilization Life cycle of Frog 4.6 Cloning Adolescence 5. Changes at Adolescence 5.1 Measuring increase in Height and observing growth rate Observing the changes in the body - Secondary sexual

characters

Reproduction in Human Beings

Menstrual cycle

Adam's apple - Voice change

5.1.3

5.2

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5.3	Child Marriages - Demerits						
5.4	C						
	Adolescence - Behavioural changes						
5.5	Adolescence - Effect of Endocrine glands						
5.6	Adolescence and Health						
	 Sweat and Pimples 						
	Balanced Diet						
	• Hygiene / Cleanliness						
	 Physical Exercise 						
Biodiversity and its Conservation							
6.1	Conference on Biodiversity - Information						
6.2	Biodiversity						
	 Identifying biodiversity in the sorroundings 						
	 Diverse world of life under microscope 						
	6.2.1 Diversity / variations in plants						
	6.2.2 Observing variations in plants						
	6.2.3 Observing variations in animals						
	6.2.4 Observing variations in human beings						
6.3	Degradation of forests - concept of Biodiversity						
	6.3.1 Endangered species, Endemic species						
	6.3.2 Information on Endangered species - Red Data Book						
6.4	Biodiversity - Balance in Nature						
6.5	Biodiversity and its Conservation						
	6.5.1 National Parks and Sanctuaries						

Conservation of forests - preparation/making of recycled paper

6.6

6.

7. Different Ecosystems

- 7.1 Concept of Ecosystem
 - 7.1.1 Structure of an Ecosystem
- 7.2 Ecosystem Relationship between biotic components
- 7.3 Changes in the Ecosystem
- 7.4 Types of Ecosystem:
 - Grassland Ecosystem
 - Forest Ecosystem
 - Desert Ecosystem
 - Fresh water Ecosystem
 - Marine Ecosystem
- 7.5 Ecosystem Biotic and Abiotic components
 - Producers
 - Consumers
 - Decomposers
 - Abiotic Components
- 7.6 Energy Flow in an Ecosystem

8. Food Production from plants

- 8.1 Crops in India
 - 8.1.1 Crops in our Village, District and State
- 8.2 Duration of crops
 - Long-term crops and short-term crops
 - Kharif crops and rabi crops
 - Duration of night and its effect on crop production

- 8.3 Cultivation of Paddy
 - Preparing the soil (ploughing, manuring)
 - Leveling the soil
 - Selection of seeds, cleaning the seeds
 - Different types of sowing the seeds
 - Developing seed beds
 - Transplanting
- 8.4 Manures, Peticides.
 - 8.4.1 Crop protection, methods of management
 - 8.4.2 Identification of pests, controlling the pests
 - 8.4.3 Pest controlling practices
- 8.5 Obtaining high yield
 - 8.5.1 Manures / fertilizers Natural and Artificial manures
 - 8.5.2 Irrigation, modern methods of irrigation Drip irrigation
 - 8.5.3 Weeding methods
- 8.6 Rotation of crops methods
- 8.7 Methods of storing grains godowns and cold storage units

9. Food Production from animals

- 9.1 Animal Husbandry
 - 9.1.1 Rearing animals Rearing animals in villages challenges
- 9.2 Milk Production
 - 9.2.1 Milk collection Pasteurization and Chilling
 - 9.2.2 Selection of live stock
 - 9.2.3 Livestock Methods of Management



- Types / varieties of hen Broilers, Layers
- Poultry Farms, Incubator
- 9.4 Apiculture
 - 9.4.1 Types of Honey bees and their life
 - 9.4.2 Honey extraction sources of Nectar
- 9.5 Fisheries

Marine fishes

Fresh water fishes (Aqua culture)

10. Not for Drinking - Not for Breathing

- 10.1 Vehicles Pollution check Pollution under control certificate
- 10.2 Atmospheric pollution
 - 10.2.1 Air pollution Pollutants
 - 10.2.2 Primary pollutants, Secondary pllutants
 - 10.2.3 Pollution The Reasons
 - Natural Calamities
 - Human Activities
 - Nuclear Power Generation Plants
 - Chemical fertilizers, Insecticides
 - Deforestation
 - Industrial Effluents Chloro fluro carbons
 - Mining
 - 10.2.4 Air Pollution The Effects
 - Aerosols, Hydrogen, Sulphide, Carbon monoxide
 - 10.2.5 Air Pollution Controlling Measures

- 10.3 Water Pollution
 - 10.3.1 Testing the pollutants in water samples
 - 10.3.2 Pollution of River Musi
 - 10.3.3 Definite, Indefinite Pollutants
 - 10.3.4 Plants Nutrients
 - 10.3.5 Biodegradable wastes
 - 10.3.6 Heat Water pollution
 - 10.3.7 Solid wastes, toxic chemicals
 - 10.3.8 Controlling water pollution

11. Why do we fall ill?

- 11.1 Health its significance What do we mean by 'Being healthy'?
 - 11.1.1 Individual, social problems
 - Community Health, Personal Health
- 11.2 Distinction between 'Being healthy and Disease free'
- 11.3 Disease and its causes
 - 11.3.1 Infections and non-infections diseases
 - 11.3.2 Short-term, Long-term diseases Illhealth
 - 11.3.3 Diseases Carriers of diseases

 Bacteria, Viruses, protozans etc.
 - 11.3.4 How does a disease spread?
 - 11.3.5 Disease causing organisms (Pathogens) the changes in organ systems in the body
- 11.4 Prevention of diseases Principles, Actions

BIOLOGY - SYLLABUS

1. Cell structure and functions

- 1.1 Typical cell
 - 1.1.1 Comaparing Plant and Animal cell
 - 1.1.2 Cell membrane (Plasma membrane)
 - Cell wall
 - Nucleus
 - Eukaryotic cell
 - Prokaryotic cell
 - Cytoplasm
 - 1.1.3 Protoplasm Cytoplasm
 - 1.1.4 Cell organells Endoplasmic Reticulum
 - Ribosomes
 - Lysosomes
 - Golgi complex
 - Mitochondria
 - Vacuoles
- 1.2 Plastids Chloroplasts
- 1.3 Are cells flat?
- 1.4 Where do cells form from?

2. Plant tissues

- 2.1 Parts of the plants their functions
 - 2.1.1 Observing the cells in leaf and onion peels
 - 2.1.2 Observing the cells in root tip
 - 2.1.3 Observing growing roots in onion
- 2.2 Plants Tissues Meristematic tissues
 - Dermal tissue

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- Ground tissue
- Vascular tissue
- 2.2.1 Meristematic tissues
 - Apical meristem
 - Lateral meristem
 - Intercalary meristem
- 2.3 Observing the tissues in transverse section of a dicot steam
- 2.4 Dermal tissue observing epidermal cells in Rheo leaf
- 2.5 Grond tissue Parenchyma, Sclerenchyma, Collenchyma
 - 2.5.1 Parenchyma Chlorenchyma, Aerenchyma, Storage tissue
- 2.6 Vascular Tissue Xylen, Phloem (Vascular Bundles)

3. Animal Tissues

- 3.1 Organ systems functions
 - 3.1.1 Observing tissues
 - 3.1.2 Observing the cells in the blood sample
- 3.2 Different types of Animal tissues
 - Epithelial Tissues
- Connective tissue
- Muscular Tissues
- Nervous tissue
- 3.3 Epithelical tissue Columnar, Cuboidal, Squanous Epithelial tissue characteristics.
- 3.4 Connective tissue Aereolar, Adipose, Skeletal tissue
 - Bone, Cartilage, Ligament, Tendon
- 3.5 Blood Tissue
 - 3.5.1 Blood tissue Red Blood Cells, White Blood Cells,

Blood - Platelets

White Blood Cells - Granulocytes (Nutrophile, Basophile, Esinophile

- Agranulocytes (Lymphocytes, monocytes)
- 3.5.2 Blood Flow, Blood clotting
- 3.6 Blood Groups Universal Acceptors, universal donors, Blood grouping Testing.
- 3.7 Nervous tissue

4. Movement of materials across the cell membrance

- 4.1 The Substances that get into and go out of the cell
 - 4.1.1 Solutions and their concentration (Sugar solution)
 - 4.1.2 Observing the changes of kishmish when placed in sugar solution and tap water.
- 4.2 Osmosis the flow of liquids through selectively permiable membrane
 - 4.2.1 Filtration
 - 4.2.2 Functions of Plasma membrane
 - 4.2.3 Flow of substances through Plasma membrane
 - 4.2.4 Importance of Osmosis in living organisms
- 4.3 Diffusion

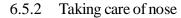
5. Diversity in living organisms

- 5.1 Observing diversity in plants
 - 5.1.1 Identifying the plants based on selected characters / features
 - 5.1.2 Observing the seeds
 - 5.1.3 Observing the characters of monot and dicot plants

- 5.2 Diversity in animals
 - 5.2.1 Observing external characters in Insects
 - 5.2.2 Variations / Diversity in Human beings, Diversity in plants (based on selected characters)
- 5.3 Classification the concept, its need evolution of life
 - 5.3.1 Classification its Historic elements; binomial nomenclature
 - 5.3.2 Method of classification the five kingdom classification proposed by Whittaker
 - Monera Protista Plantae Fungi Animalia
- 5.4 Classification of Plant Kingdom
- 5.5 Classification of Animal Kingdom

6. Sense Organs

- 6.1 Sense organs Opinions of our ancestors
- 6.2 What do our sense do ? / How do sense organs help us ?
 - 6.2.1 Stimulus Response
- 6.3 Eye-its structure, cells and tissues / structure of the eye-cells- and tissues in the eye
 - 6.3.1 Functioning of the eye
 - 6.3.2 Eye and Illusions
 - 6.3.3 Taking care of our eyes, diseases and defects of the Eye An understanding
- 6.4 Ear its external and internal structure
 - 5.4.1 Ear the hearing / auditory sensation
 - 6.4.2 Functions of the ear, caring for the ears
- 6.5 Structure of the Nose
 - 6.5.1 The smell or olfactory sense How do we know the sense of smell?



- 6.6 Structure of the Tongue
 - 6.6.1 How do we know the taste?
 - 6.6.2 Taking care of the Tongue
- 6.7 Structure of the skin
 - 6.7.1 How does the skin convey the sense of touch?
 - 6.7.2 Skin diseases, taking care of skin

7. Animal behaviour

- 7.1 Animals behave in different ways / or Animals exhibit different behaviour
- 7.2 Different types of Animal behaviour
 - Instinct
 - Imprinting
 - Conditioning
 - Imitation
- 7.3 Pavlov Experiments on conditioning
- 7.4 Human behaviour : Instinct, imitation, conditioning
 - 7.4.1 Investigating behaviour in the field, laboratory
 - 7.4.2 Investigation in the field tagging
- 7.5 Animals and their intelligence

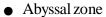
8. Challenges in improving agricultural products

- 8.1 Relationship between growth of population and the need for food
 - 8.2.1 Need of improving agricultural produce
- 8.2 How to increase the food production?
 - High yielding varieties
 - Irrigation facilities

- 8.2.1 Relationship between water and crop yield.
- 8.2.2 Plant nutrients / or nutrients needed by the plants
- 8.2.3 Crop Rotation
- 8.2.4 Cultivating mixed crops
- 8.2.5 Organic manure
- 8.2.6 Chemical Fertilizers
- 8.3 Soil testing
- 8.4 Conventional manures
 - Vermi compost
 - Panchagavya
- 8.5 Organic farming
 - 8.5.1 The long-term effect of chemical fertilizers on the yield of the crop
- 8.6 Crop protection
 - 8.6.1 Weeds
 - 8.6.2 Plant Diseases Prevention (Pesticides)

9. Adaptations in different Ecosystems

- 9.1 Ecosystems
 - 9.1.1 Ecosystems Adaptations in Plants
- 9.2 Desert Ecosystem Adaptations in plants and animals
- 9.3 Aquatic Ecosystem Adaptations in plants and animals
 - 9.3.1 Marine Ecosystem Adaptations in plants and animals
 - 9.3.2 Aquatic organisms The secrets of swimming
 - 9.3.3 The zones in the marine ecosystem on the basis of availability of light at different depths.
 - Euphotic zone
 - Bathyal zone



9.3.4 Zones in the fresh water Ecosystem

- Littoral zone
- Limnetic zone
- Profundal zone
- 9.4 Water salinity Adaptations
- 9.5 Adaptations to temperature in plants, animals
 - Hibernation and Aestivation
 - Symbiosis (Lichens)
- 9.6 Adaptations Evolution (story of Darwin's Finches)

10. Soil Pollution

- 10.1 What is soil?
 - 10.1.1 What is soil?
 - 10.1.2 Soil properties Physical, Chemical and Biological properties of the soil
- 10.2 Soil fertility
- 10.3 Soil pollution
 - 10.3.1 Fertility of soil due to decomposition of wastes
 - 10.3.2 Soil pollution Wastes
 - Biodegradable wastes
 - Non-biodegradable wastes
- 10.4 Causes of land pollution
 - 10.4.1 Manures and Chemicals
 - 10.4.2 Biomagnification
 - 10.4.3 Solid wastes
 - 10.4.4 Deforestation
 - 10.4.5 Urbanization
 - 10.4.6 Pollution of undreground soil

- 10.5 Effects of soil pollution on Environment
- 10.6 Control measures of soil pollution 10.6.1 Bioremidiation, soil conservation

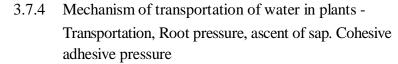
11. Biogeochemical cycles

- 11.1 Pollution, concept of biogeochemical cycles in relation to the ecosystems an understanding
- 11.2 Water cycle
- 11.3 Nitrogen cycle
 - 11.3.1 Nitrogen fixation
 - 11.3.2 Nitrification
 - 11.3.3 Assimilation
 - 11.3.4 Ammonification
 - 11.3.5 Denitrification
 - 11.3.6 Nitrogen cycle and human intervention
- 11.4 Carbon cycle
 - 11.4.1 Photosynthesis Carbon fixation
 - 11.4.2 Carbondioxide cycling and storage
 - 11.4.3 Carbon cycle Human intervention
 - Global warming The green house effect
- 11.5 Oxygen cycle
 - 11.5.1 Oxygen cycle
 - 11.5.2 Ozone layer and its effect

BIOLOGY - SYLLABUS

10th CLASS

Tuti CLASS						
1.	Nutrition		,	2.2	Respirating system in human being	
	1.1	Life process- Introduction			2.2.1 Exchange of gases (alveolies to Blood capillaries)	
		1.1.1 Autotrophic and heterotrophic nutrition			2.2.2 Mechanism of transport of gases	
	1.2	Photosynthesis			2.2.3 Transport of gases (Capillaries to cells, cells to back)	
		1.2.1 Understand the concept of photosynthesis	-	2.3	Cellular respiration	
		1.2.2 Raw materials required for photosynthesis - H ₂ O, CO ₂ sunlight			2.3.1 Anaerobic respiration2.3.2 Aerobic respiration	
		1.2.3 Process of releasing oxygen in photosynthesis			2.3.3 Fermentation	
		1.2.4 Necessity of light for formation of carbohydrate	2.4	2.4	Respiration - Combustion	
		1.2.5 Chlorophyll - Photosynthesis			Liberating heat during respiration	
		1.2.6 Where does photosynthesis takes place		2.5	Evolution of gaseous exchange	
		1.2.7 Mechanism of photosynthesis:	2	2.6	Plant respiration	
		(i) Light reaction, (ii) Dark reaction			2.6.1 Transportation of gases in plants2.6.2 Respiration through roots	
	1.3	Nutrition in organisms			2.6.3 Photosynthesis - respiration	
		1.3.1 How do the organisms obtain the food?		Trans	sportation	
		1.3.2 Cuctuta - Parasitic nutrition		3.1	Internal structure of Heart	
	 Digestion in human beings Process of movement of food through alimentary canal Litmus paper test ◆Enzyme ◆Flow chart of Human 				3.1.1 Blood vessels and blood transport	
					● Blood capillaries ● Arteries veins	
			<u> </u>	3.2	Cardiac cycle	
		digestive system			3.2.1 Single circulation, double circulation	
	1.5	Healthy points about oesophagus		3.3	Lymphatic system	
	1.6	Malnutrition -disease	<i>'</i>	3.4	Evolution of transport system	
		1.6.1 Diseases due to vitamin deficiency		3.5	Blood pressure	
2.	Respiration			3.6	Blood clotting	
	2.1	Respiration - discovery of gases involved in respiration		3.7	Trasnportation in plants	
		2.1.1 Different stages of respiration			3.7.1 How water is absorbed	
		2.1.2 Expiration, inspiration			3.7.2 Root hair absorbtion	
		2.1.3 Pathway of air			3.7.2 Root half absorbtion 3.7.3 What is root pressure?	
		2.1.4 Epiglottis - Pathway of air.			5.7.5 what is foot pressure?	



- 3.7.5 Transportation of Minerals
- 3.7.6 Transportation of food material

4. Excretion

- 4.1 Excretion in Human beings
- 4.2 Excretory system
 - 4.2.1 Kidney
 - 4.2.2 Kidney internal structure
- 4.3 Structure of Nephron
 - Malphigion tubules Nephron
- 4.4 Formation of urine
 - Glomerular filtration
 - Tubular reabsorption
 - Tubular secretion
 - Formation of hypertonic urine
 - 4.4.1 Ureter
 - 4.4.2 Urinary bladder
 - 4.4.3 Urethra
 - 4.4.4 Urine excretion
 - 4.4.5 Urine composition
- 4.5 Dialysis Artificial kidney
 - 4.5.1 Kidney transportation
- 4.6 Accessory Excretery organs in human beeing (Lungs, skin, liver large intestine)
- 4.7 Excretion in other organisms
- 4.8 Excretion in plants
 - 4.8.1 Alkaloids

- 4.8.2 Tannin
- 4.8.3 Resin
- 4.8.4 Gums
- 4.8.5 Latex
- 4.9 Excretion, Secretion

5. Control & coordination

- 5.1 Stimulus and response
- 5.2 Integrated system Nerves coordination
- 5.3 Nerve cell structure
- 5.4 Pathways from stimulus to response
- 5.4.1 Afferent nerves
- 5.4.2 Efferent nerves
- 5.5 Reflex arc
 - 5.5.1 Reflex arc
- 5.6 Central nervous system
 - Brain Spinal nerves
- 5.7 Peripherial nervous system
- 5.8 Coordination without nerves
 - 5.8.1 Story of insulin
 - 5.8.2 Chemical coordination endocrine glands
 - 5.8.3 Feedback mechanism
- 5.9 Autonomous nervous system
- 5.10 Coordination in plants Phytohormones
 - 5.10.1 How plant shows responses to stimulus
 - 5.10.2 Tropic movements in plants

6. Reproduction

6.1 Growth of bacteria in milk.

6.2	Asexual reproduction						
	6.2.1	fission, budding, fragmentation, parthenocarpy,					
		parthenogensis, regeneration					
	6.2.2	Vegetative propagation					
		• Natural vegetative propagation through roots, stem,					
		leaves					
		 Artificial propagation - cuttings, layering and 					
		grafting					
	6.2.3	Formation of spores					
		 Sporophyll 					
6.3	Sexual	reproduction					
	Reproduction in human beings						
	6.3.1	Male reproductive system					
	6.3.2	Female reproductive system					
	6.3.3	Child birth					
6.4	Sexual	Sexual reproduction in plants					
	6.4.1	Flower - reproductive parts, unisexual, bisexual flowers,					
		self and cross pollination.					
	6.4.2	Pollen grain					
	6.4.3	Structure of ovule, ovary; double fertilisation					
	6.4.4	Germination of seeds					
6.5	Cell division - Cell cycle						
	6.5.1	Cell division in humn beings					
	6.5.2	Cell cycle - G ₁ , S, G ₂ and M phases					
	6.5.3	Mitosis					
	6.5.4	Meiosis					
6.6	Repro	ductive health - HIV/ AIDS					
	6.6.1	Birth control methods					

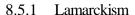
- 6.6.2 Fighting against social ills
- 6.6.3 Teenage motherhood, stop female foeticide

7. Coordination in Life Processes

- 7.1 Hunger
 - 7.1.1 Effect of hunger stimulus
- 7.2 Relation between taste and smell
 - 7.2.1 Relation between taste of tongue and palate
- 7.3 Mouth a mastication machine
 - 7.3.1 Action of Saliva on flour
 - 7.3.2 Observing the pH of mouth
- 7.4 Passage of food through oesophagus
 - 7.4.1 Peristaltic movement in oespaphagus
- 7.5 Stomach is mixer
 - 7.5.1 Movement of food from stomach to intestion.
 - 7.5.2 Excretion of waste material

8. Heredity

- 8.1 New Characters variation
- 8.2 Experiments conducted by Mendal (F1 generation,F2 generation), Mendel's Laws
 - 8.2.1 F_1 generation self pollination
 - 8.2.2 Phenotype
 - 8.2.3 Genotype
- 8.3 Parents to offsprings
 - 8.31 How the characters exhibit?
 - 8.3.2 Sex determination in human beings
- 8.4 Evolution
 - 8.4.1 Genetic drift
- 8.5 Theories of organic evolution



- 8.5.2 Darwinism
- 8.5.3 Darwin theory in a nut shell
- 8.6 Origin of species
 - 8.6.1 How the new species orginates
- 8.7 Evolution Evidences
 - 8.7.1 Homologous organs analogous organs
 - 8.7.2 Embrylogical Evidence
 - 8.7.3 Fossils Evidences
- 8.8 Human Evolution
 - 8.8.1 Human Beings: Museum of vestigial organs

9. Our Environment

- 9.1 Ecosystem Food chain
 - 9.1.1 Number Pyramid
 - 9.1.2 Biomass Pyramid
 - 9.1.3 Energy pyramid
- 9.2 Human activities Their effect on ecosystem
 - 9.2.1 Story of Kolleru lake
 - 9.2.2 Edulabad resorvoir Effect of heavy metals
 - 9.2.3 Sparrow campaign
- 9.3 Biological pest control measures
 - Crop rotation
 - Knowing the history of pests
 - Sterility
 - Gene mutation
 - Concern towards environment

10. Natural resources

- 10.1 Case study Agricultural land (past and present)
- 10.2 Case study Water management
 - Community based particing
 - Farmer based intervention
 - Waste land cultivation
- 10.3 Water resources in the Telugu States
- 10.4 Natural resources around us
- 10.5 Forest Renewable resources
 - 10.5.1 Soil
 - 10.5.2 Bio-diversity
- 10.6 Fossil fuels
 - 10.6.1 Minerals
- 10.7 Conservation, Redue, Reuse, Recycle, Recover
 - 10.7.1 Conservation groups