

SUBJECT - BIOLOGY
CLASS – X
SESSION 2020-21

Text Book: Science and Technology (NCERT)

MARKING SCHEME: I. World Of Living: 23 Marks II. Natural Resources: 05 Marks

MONTH	CHAPTER	SUB TOPICS	INNOVATIVE PEDAGOGY	LEARNING OUTCOMES	PRACTICALS
April	Our Environment	Ecosystem , its components, food chains and food webs, ecological pyramids, 10% law Environmental Problems, Ozone Depletion, Waste Production & their solutions, Biodegradable and Non-Biodegradable substances	. Interactive discussion on Components of Ecosystem (Food chains and food webs of Grass land, desert, Pond Ecosystem)	<p>Students will be able to</p> <ul style="list-style-type: none"> • Be aware of Biotic and Abiotic components of Ecosystem. • Know about the benefits of decomposers. • Have critical thinking to understand 10% law <p>Students will be able to</p>	<p>INTERNAL ASSESSMENT</p> <p>PERIODIC ASSESSMENT & PORTFOLIO</p> <p>M.M: 05</p>
	Management of Natural resources	Forests and Wild life, Conservation, Stake holders, Water harvesting, Coal and Petroleum, Chipko movement.	“Jal Hai Toh Kal Hai!” Classroom Discussion	<ul style="list-style-type: none"> • Analyze the role of forests, wildlife and water. • Reduction in over use of resources. • Implementing 5Rs of Environment for sustainable development. 	

May & June	Life Processes	Living Beings, Nutrition in plants, Nutrition in animals, Respiration in plants & animals, Transportation, Blood, Heart Double circulation, Excretion – in plants and animals, Human excretory system, Dialysis.	<ul style="list-style-type: none"> • Making Labelled diagrams • Lecture cum demonstration of Models and Charts • Case studies of common disorders. 	Students will be able to <ul style="list-style-type: none"> • Estimate and perceive the mechanism of Photosynthesis • Find out the role of different enzymes and Organ systems in functioning of the body. 	To demonstrate that CO ₂ is given out during respiration
July & August	How do organisms Reproduce	Asexual and Sexual Reproduction, Vegetative propagation, Advantages & disadvantages	Hands on activities of vegetative propagation	Students will be able to <ul style="list-style-type: none"> • Understand the need of reproduction for continuity of life on the Planet. 	Art Integrated Activity - What's your Food-Print- From Farm to Plate: PPT Presentation Details Attached.
September & October	Heredity and Evolution	Heredity, Mendel's contribution, Laws for Inheritance of traits, Sex Determination.	Brain Storming session Examples of Speciation and Variations from daily life	Students will be able to <ul style="list-style-type: none"> • Comprehend the new terms pertaining to genetics • To analyse the problems based on laws of Inheritance 	To study Binary fission and Budding in amoeba and Hydra.
November & December	Pre board Examination				
January	Pre board Examination				

ART INTEGRATED ACTIVITY

What's your Food-Print?

Would you believe us if we say that out of all the food produced globally, nearly one-third of it goes to waste!?! Yes, you read it right! Not just the food, but all the natural resources which go into producing that one-third of the food also go to complete waste!

While talking about different threats to our environment, we often tend to forget about the biggest threat to our planet, the way our food is being produced and consumed in today's times. How can food be a threat to our planet, you ask? Well, it might come as a surprise to you that the largest portions of all land and freshwater on Earth are used up in the production of food. It is one of the biggest causes of deforestation and toxic greenhouse gas emissions which are causing climate change. Unbelievable, right!?

Fortunately, this ecological impact is actually avoidable. Let's see how we can save this one-third of food waste, and help build a sustainable future for life on Earth! Dive into the fight food waste.

When we say, save 1/3 of the food, it is more than just the food!

To produce even a tiny portion of food that we eat in a restaurant or home, a big chunk of natural resources is consumed which generate a lot of pollution. In order to be more efficient with our food distribution, we should reduce the need to produce excess food. By avoiding food waste, we also ensure that all those resources were not used pointlessly.

Get inspired and *find out how much water, energy, land and wildlife we can save by only saving 1/3 of the food!*

1. ***Language- Write a notice*** for your school bulletin board requesting students, teachers and staff to avoid wasting food.
2. ***Social Studies***- The northern plains of India constitute our main source of food grains. Find out types of *crops grown in **Arunachal Pradesh and Meghalaya*** List down five reasons why.

3. ***Science- Track the journey*** FROM FARM TO PLATE

Track any 1 food item on your plate from the farm where it was grown.

At each step note the resources used in terms of energy. Calculate the total energy spent to ensure the food reaches your plate.

For example, energy used to put 2 chappatis on your plate.

Your birthday cake in front of you, The cup of coffee or juice etc ,track its journey

Prepare a Power Point presentation and submit on Padlet

Scratch Your Mind- Biology Class Discussion

Did you know, about 1.3 billion tons of perfectly edible food is discarded every year - an astonishing amount of it deliberately.

If we save one-third, we would have four times the food needed to feed the world's 820 million undernourished people every year!

Here is a list of things that you can do to make smarter choices and save that 1/3:

1. Eat Smarter:

Freeze your large portions of food. This helps you to eat it for a longer period of time.

Cannot finish the food you ordered in a restaurant? Always ask for a takeout container in case of leftovers as the restaurants can't re-use that food and must throw away.

If you have large portions of leftover food from a party that you don't want to eat anymore, share it with someone who needs it more than you do.

2. Cook Smarter:

The easiest and the most common way to avoid food wastage is to cook just enough! Avoid cooking too much food for one meal.

Store and handle your food items correctly. This way, the items will stay fresh for longer period. Here is a list for 12 common food items which shouldn't be refrigerated.

Use every part of your food! Did you know once you eat your watermelon, you can roast the watermelon seeds, season them a little and eat them as crunchy snacks with your evening tea!? Here are some examples on how you can use every part of the common food items we eat.

3. Shop Smarter:

Buy just enough groceries for a few days as most perishable foods last just a week.

Plan ahead, make a list and buy only the ingredients that are missing from your kitchen. The impulse buys are often things you will not usually eat and will wind up going to waste.

Love the ugly produce! Fruit and vegetables that have odd shapes or colours are usually just as nutritious as normal-looking ones. Most grocers usually sell them on a discount; why not buy them and enjoy the full goodness!

Home science

What do you do when your bananas over ripe and start to go bad? Well, we suggest you get a little creative and use your over-ripe bananas in the following ways to avoid any wastage:

Recipe -

1. Bake banana bread, muffins, or pancakes
2. Replace one egg with a ripe banana when baking
3. Freeze and blend to produce banana ice cream

Don't forget not-so-fresh fruits work well in smoothies, or steamed and mashed to make an all-natural spread on pancakes and waffles.

To get you started, let's discuss some ideas on using the food items past their prime time.

This lockdown, discover your inner "sustainable-chef" and give your over-ripe vegetables and fruits a second life!

Learning outcomes

Let's test your knowledge about the food we consume; why does it matter and where is it lost?

To understand the process of growing and distributing food.

Fight food wastage.