Alternate Educational Plan for the Month of October 2021-22

Class: 9th std Subject: Science Month: November

Chapter: 1. Improvement in Food Resources
2. Gravitation

Sl. No	Month /Week	Important Learning competencies	Learning activities	Evaluation
1.	**1st week**	• Learn about dietary supplements that contain carbohydrates, proteins, fats, vitamins, minerals and salts.	➢ They list dietary supplements that contain carbohydrates, proteins, fatty vitamins, minerals, and salts. ➢ They will be collecting pictures of food items and making an album. ➢ Making a chart of food grains and the nutrients they contain.	1.Name two dietary supplements that contain carbohydrate. 2.Name two food stuffs that contain protein. 3.Name two dietary sources of fat 4.Text Book pageNumber-36
		• Will know the Kharif and Rabi crops.	➢ Will list the Kharif and Rabi crops. ➢ In the calendar, the period of the Kharif and Rabi crops is identified.	5.Which is the period of growing Kharif and Rabi crops? 6.Write an example for Kharif and Rabi crops.

		• They will learn about the 3 most important steps in agriculture. For example: 1. Crop breeding improvement 2. crop production management. 3. Crop Protection Management.	➢ Will discuss and consult on the factors that should be considered in selecting the best seeds. ➢ Will discuss and consult High cost, low-cost and cost-effective production system. ➢ Will Prepare a list of macro and micro-nutrients for plant growth.	7.Name the three most important steps that can be followed in agriculture. 8.Name the macro and micro-nutrients that are essential for the growth of plants. 9.text book page number-42.
		• Understands the importance of organic fertilizers, manufacture and its classification.	➢ They will list the materials that can be used for making organic fertilizer.	10.What is the importance of organic fertilizer in increasing soil fertility?

			➢ The importance of organic fertilizer is enhanced with increasing soil fertility. ➢ List the raw materials for mixed fertilizer and vermi-compost preparation. ➢ They understand the importance of green manure manufacturing and its use	11.What are the raw materials for preparing compost and vermi-compost?
		• They will know the fertilizers and the important nutrients they provide and the appropriate type to use them.	➢ Prepare a list of important nutrients that fertilizers provide. ➢ List the names of fertilizers used by their elders in rural areas and list the nutrients they contain. ➢ To be aware of the precautions to be followed in the use of fertilizers.	12.which are the key nutrients fertilizers provide? 13.Write about precautions to be followed in using fertilizers. 14.text book page numbers from 37 to 39.

		• Understand the importance of irrigation in agriculture and various sources of water for irrigation	➢ They emphasize the importance of water in crop nutrition ➢ Making an illustrated album of wells, canals, irrigation systems and farm pits.	15.Name the various sources of water used for crop nutrition. 16.text book page number -41 & 43.
2.	**2nd week**	• Understands crop patterns such as mixed cropping, inter-cropping and crop rotation systems.	➢ List the crops that can be grown in mixed cropping systems. ➢ List the crops that can be grown in Intercropping. ➢ List the crops that are grown in rotation systems. ➢ List of various crop varieties that can be grown by rural students in their fields.	17.What is the main purpose of growing crops in different cropping patterns? 18.Name the crops that can be grown in inter-cropping systems.

		• Understands the importance of pesticides and appropriate measures for crop protection.	➢ Lists insecticides used in crop protection. ➢ Understanding the main objectives of the spraying of insecticides. ➢ Collects information on potential problems with overuse of pestisides. ➢ samveda video link ➢ https://diksha.gov.in/play/collection/do_31313047144049868819 8?contentId=do_3131743547696496641390 2	19.Name the pesticides used in crop protection. 20.Write down the problems that can be caused by the overuse of pesticides.
		• Appropriate the methods of storage of grains and know the reasons for the loss.	➢ List the reasons for the loss in the grains during the grain storage method. ➢ Collecting the information by students on the manner in which methods of storing food at home.	17. Write the reasons for the loss in the grains during the storage.

			➢ Preparation of a Chart of Appropriate Measures to be followed in the storage of Grains.	
		• Know the methods of animal husbandry and its importance. For example: • Cattle farming • Poultry farming • fish farming etc.	➢ Discussing the he main purpose of animal husbandry. ➢ Identifying, collecting pictures and preparing the chart of Indian cow and buffalo breeds and their image collection. ➢ Preparing the Pictured album of foreign breeds with high milk production. ➢ Establish necessary steps to be considered in farming. ➢	18. What is the main purpose of animal husbandry? 19.Name the breeds of Indian cow and buffalo.
		• Know the purpose of poultry farming and the precautions to be followed in breeding.	➢ About the main purpose of poultry farming. ➢ They will list the desired qualities of a good breed.	20. What is the main purpose of poultry farming? Write down the desired qualities to be in a good breed.

			➢ They will establish appropriate measures to be followed in the farming.	
		• Understand the importance of fish farming and the method of fish farming. For example: Natural fish farming and artificial fish farming	➢ Making a pictorial chart of naturally available marine fishes. ➢ Making a pictorial chart of naturally available freshwater fishes. ➢ Establishment of integrated fish farming system	21.Name the naturally availablemarine fishes. text book page numberNumber-40. 22.Briefly describe the farming method of compound fisheries.
		• Know the purpose of honey farming and the different breeds.	➢ Understanding the objectives of Beekeeping. ➢ List the uses of honey. ➢ Name the Indian and Italian honey breeds. Prepare the album. ➢ Interactive learning:	23.What is the purpose of honey rearing? 24.Write down the uses of honey.

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3.	**3rd week**	• Recall the applications of Gravitational force	➢ List out the universe celestial bodies Watching the Video of the solar system's celestial bodies. Centrifugal force link https://youtu.be/CJNmxgBeNmo Solar system's video link https://youtu.be/7hPD1yNZlOs	1. text books 1st and 2nd main of page number 56.
		• Will define the force of gravity. will understand practically earth will attract all objects.	➢ Instruct them to perform Self-learning Sheet-1 and Textbook activity 10.1. ➢ Testing the Earth's gravitational potential by dropping litter, birds feather,	2. What causes the peacocks feather to fall slowly? 

			stone, pellet and heavy objects.	
		• Will demonstrate, All the things in the universe or on earth have the attraction force.	➢ An activity that shows the pellets attractive force by placing some ball barring of the same size on a plastic tray and the same size magnetic pellets.	3. What causes molecules to be tight in solids?
		• Will explain the universal law of gravitation.	Explaining the textbook activity 10.11. Demonstrating the mathematical formula of gravity through video or animation. Samaveda link for part-1 in relation to gravity: https://youtu.be/C34BMMV_p3I	4. How do the container walls hold water?
		• Will collect the information, appreciate Kepler, Galileo, Sir Isaac Newton.	➢ Watching a short video introducing Sir Isaac Newton. https://youtu.be/h48BWDeBLno	5. What is the force of gravity exerted between two objects if the mass of one object is doubled?

			A short video link about Galileo https://youtu.be/Bg62OsxaaHc	
		• Will solve problems related to the force of gravity.	➢ Guide them to solve 1st and 2nd sums of the text book. ➢ Discussion on the topic "Living on the Moon is Harder Than the Living on Earth".	6. According to Kepler, which orbit the planet will revolve around the sun?
		• They will list the importance of the law of gravity and the factors on which gravity depends.	➢ Maintaining the Textbook Activity 4.1. ➢ Characterizing the formula. $g = G M / R^2$ understanding the text book 10.2.1 to calculate $g=9.8\ ms^{-2}$ Samaveda part- 2 link https://youtu.be/99VPSJhiSH4	7. Can't stand on the moon. Why?

			➢ ‘a’is replaced by ‘g’ In equations of motion.	
4.	**4th week**	• They Calculate the value of acceleration due to gravity "g" caused by the free fall. • They work out the equations of motion for free fall.	➢ Take two balloons, in one balloon put 5 Rs coin and in another balloon without putting coin blow air and tie them, Balancing the two individually by hitting them by hand in the air and observe the difference. Link of simple experiments on gravitation https://youtu.be/lcYhM9mONGU The Samaveda part -3 link of the gravitational unit. https://youtu.be/1ku3cFqgNx8 ➢ Performing the simple activity of activity sheet – 4.	8. carry the Textbook activity 10.3. Repeat Example 10.2 and 10.3 9. What causes the acceleration to decrease when the object is thrown vertically upwards? 10.What do you mean by free fall?
		• They will differentiate the mass and weight of the object.	Link of pressure experiment in liquids. https://youtu.be/-6uwmgr1800	11. What causes a sheet of paper to slide down more slowly than a paper ball?

		• They define the thrust and pressure and explain the relationship between them.	➢ Watching the change by closing the mouth of a water filled glass with a balloon layer and holding the glass upside down.	
		• They narrate fluids exert the pressure.	➢ Maintaining the activity 10.4. Take an empty plastic bottle. Close the mouth of the bottle with an airtight stopper. Put in a bucket filled with water and observe the difference.	12. What causes the piles of sand to pile up on the sea shore?
		• Explains meaning of Buoyancy and demonstrates that the fluid's upward pressure exceeds the Earth's gravitational force.	➢ Maintaining the activity 10.5 and 10.6	13. Why are the bottom walls of the dams thicker than the top?
		• Why does the objects float on water? Or will justify why they sink.	➢ Maintaining the activity 10.7 List out the densities of different metals.	14. What caused the water bottle to sink into the bucket?
		• They narrate the Archimedes Principle and defines the relative density.	Archimedes Principle experiment link https://youtu.be/IfldVIUX4sI	15. The volume of 50g of a substance is $20cm^3$. If the density of water is $1gcm^{-3}$, will the substance float or sink

Activity sheet-1

S.No.	Name of nutrients	Nutrient-rich foods.
1	Carbohydrates	
2	proteins	
3	Fats	
4	Vitamins	
5	Mineral and salts	

S.No.	Type of crop	Crop period	Examples
1	Kharif		
2	Rabi		

Activity sheet-2

1.Nutrients needed.

Macro nutrients

Micro nutrients

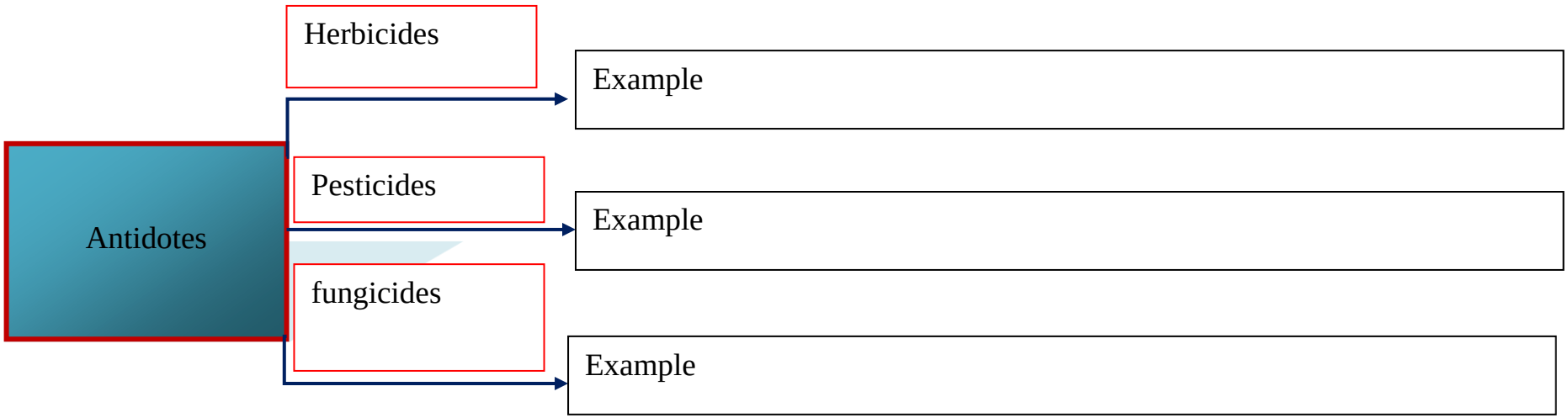
2. Write down the differences.

S.No.	Manure	Fertilizers
1		
2		
3		

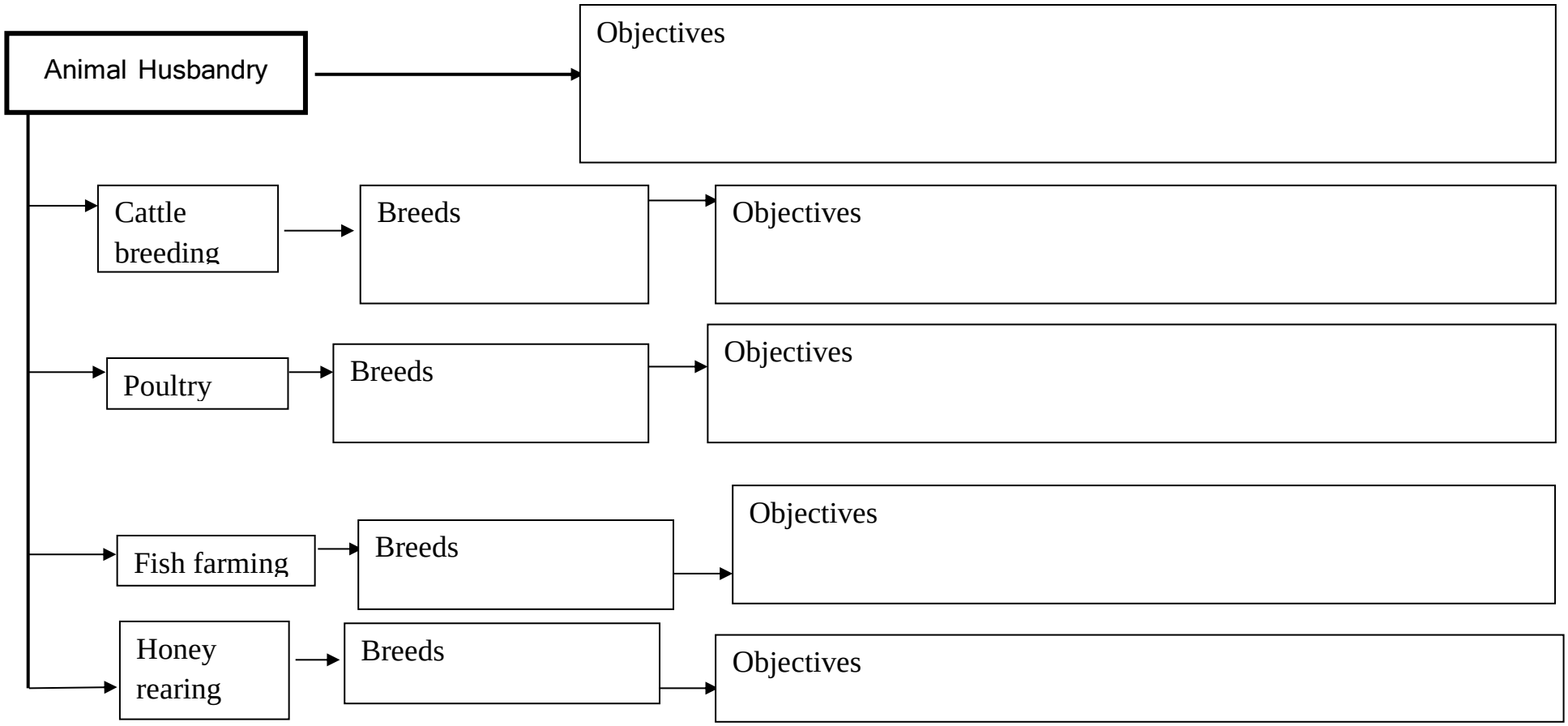
Activity sheet-3

1. Write down the differences.

S.No.	Mixed cropping	Inter-cropping	Crop rotaion
1			
2			



Activity sheet-4



Activity sheet-5

I. Use the correct words given brackets to fill the blanks.

universal, mass, distance, gravitational force, acceleration, Newton, 6.7×10^{-11}, 9.8, circular path

1. The force that drives towards the center causes the object to move in _____.
2. The force of gravity is _____.
3. _____ Scientist showed the cause of the planetary motion is the gravitational force that the sun exerts on them.
4. From the second law of motion the force is the product of the mass and _____.
5. _____ due to the free fall of objects

6. The value of "g" is _____ms^{-2}
7. The value of "G" is _____ Nm^2kg^{-2}
8. The two factors that depend on the force of gravity are _____ and _____

Activity sheet-6

A. identify the Correct and incorrect statements

1. The Moon's gravitational force is greater than the Earth's gravitational force.
2. The force of gravity does not work in liquid medium.
3. The weight of an object depends on the acceleration due to gravity.
4. The scientist Kepler, who claimed that planets revolve around the Sun in a elliptical orbit.
5. The object does not experience acceleration in free fall.

B. Complete the formula.

Force	Acceleration due to gravity	weight	pressure	Relative density	Gravitational force

Activity sheet-7

1.Complete the following questions

1. Define Newton's law of universal gravitation? On which factors it will not depend.

_____
_____
_____
_____
_____

2. Narrate the mathematical formula of Newton's law of gravity.

_____
_____
_____
_____
_____
_____
_____
_____
_____

3. Calculate the value of acceleration due to gravity by using the formula of gravity when the gravity constant G= $6.7\times10^{-11}Nm^2/kg^2$, the mass of the earth = $6\times10^{24}kg$ and the radius of the earth =$6.4\times10^{6}km$.