THIRD TERM
WEEKLY LESSON NOTES
WEEK 1

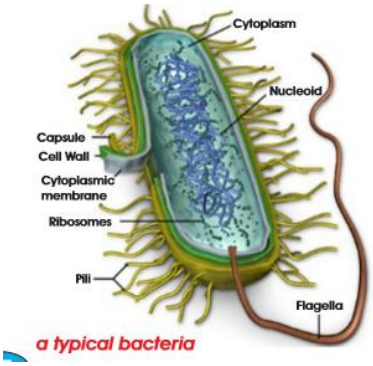
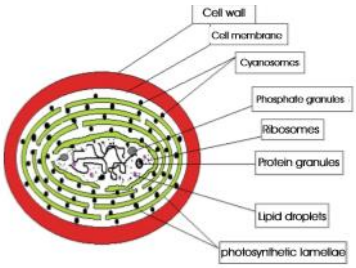
Week Ending: 30-06-2023	**DAY:**	**Subject:** Science
Duration: 100mins		**Strand:** Diversity Of Matter
Class: B8	**Class Size:**	**Sub Strand:** Structure Of Prokaryotic & Eukaryotic Cells

Content Standard: B8.1.2.1 Demonstrate an understanding of the types of cells and their structure in relation to different organisms	**Indicator:** B8.1.2.1.1 Examine and describe the structure of prokaryotic and eukaryotic cells.	**Lesson:** 2 of 2
Performance Indicator: Learners can examine and describe the structure of prokaryotic and eukaryotic cells	**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 54		

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Revise with learners on the previous lesson. Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Revise with learners on the definition of a cell. Guide them to explain the concepts in the learner's book. Brainstorm learners to explain the terms; A prokaryotic cell is a type of cell that lacks a membrane-bound nucleus and other membrane-bound organelles, such as mitochondria, endoplasmic reticulum, and Golgi apparatus. An eukaryotic cell is a type of cell that has a membrane-bound nucleus and other membrane-bound organelles, such as mitochondria, endoplasmic reticulum, and Golgi apparatus. Compare and contrast prokaryotic and eukaryotic cells.	Pictures and charts

Prokaryotes	Eukaryotes
1. Prokaryotic cells are the type old of cells	1. Eukaryotic cells are the cells modern/new which came from the prokaryotic cells
They have do not a definite nucleus	They have a definite shape
The chromatin bodies remain scattered within the cytoplasm	The chromatin bodies are enclosed by a nuclear membrane
Asexual reproduction like binary fission occurs in prokaryotes	Both sexual and asexual reproduction occurs in eukaryotes

Create a table to show a chart or a slideshow depicting images and labels of the types of cells. Identify their differences and similarities after observation.

	Put learners into groups, let them draw and label a prokaryotic cell and a eukaryotic cell and make a presentation on what is observed.  a typical bacteria  a typical cyanobacteria Guide learners to discuss the importance of prokaryotic and eukaryotic cells. • Most enzymes in the digestive system that assist in the breakdown of food are in the form of prokaryotes. • Pathogenic microbes are forms of prokaryotes that from harmful protect us micro-organisms. • Some prokaryotes help our immune system to function properly. • Plants are eukaryotic organisms that provide humans with most of the requirements of life like; oxygen, food, medicine, etc. • Lower class organisms like; worms' termites play active roles in the decay of organic matter into humus; which is ready form of plant food. <u>Assessment</u> Describe briefly how prokaryotes are different from eukaryotes. Name two [2] single bound membrane organelles in eukaryotic cells	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

Week Ending: 30-06-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Diversity Of Matter	
Class: B8	**Class Size:**	**Sub Strand:** Classification of Organisms	
Content Standard: B8.1.2.1 Demonstrate an understanding of the types of cells and their structure in relation to different organisms	**Indicator:** B8.1.2.1.2 Classify organisms (plants or animals) as prokaryotic or eukaryotic based on the type of cells they are made of	**Lesson:** 1 of 2	
Performance Indicator: Learners can classify organisms as prokaryotic or eukaryotic		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 54			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Revise with learners on the previous lesson. Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Have learners observe and list examples of organisms; plants and animals as prokaryotic or eukaryotic based on each cell type. *<u>Prokaryotic Organisms</u>:* *1. Bacteria (e.g., Escherichia coli, Streptococcus)* *2. Archaea (e.g., Halobacterium, Methanobacterium)* *3. Cyanobacteria (e.g., Anabaena, Synechocystis)* *<u>Eukaryotic Plants</u>:* *1. Mosses (e.g., Physcomitrium patens)* *2. Ferns (e.g., Pteridium aquilinum)* *3. Flowering plants (e.g., Arabidopsis thaliana, Rosa hybrid)* *Eukaryotic <u>Animals</u>:* *1. Roundworms (e.g., Caenorhabditis elegans)* *2. Insects (e.g., Drosophila melanogaster, Apis mellifera)* *3. Fish (e.g., Danio rerio, Salmo salar)* *4. Reptiles (e.g., Chelonia mydas, Python regius)* *5. Birds (e.g., Gallus gallus, Passer domesticus)* *6. Mammals (e.g., Homo sapiens, Mus musculus, Canis lupus)* Explain the impact of prokaryotes and eukaryotes on humans' health and devise safety measures to protect them. Prokaryotes: *1. Beneficial Impact: Prokaryotes play a crucial role in human health. Beneficial bacteria, such as those in the gut microbiota, help with digestion, nutrient absorption, and the synthesis of vitamins. They also provide protection against harmful pathogens by competing for resources and producing antimicrobial substances.* *2. Pathogenic Impact: Some prokaryotes can cause diseases in humans. Examples include bacteria like Escherichia coli, Streptococcus pneumoniae, and Mycobacterium tuberculosis, which can lead to conditions such as urinary tract infections, pneumonia, and tuberculosis, respectively.*	Pictures and charts

	<u>Safety Measures</u>: *1. Good Hygiene Practices: Practicing good hygiene, such as regular handwashing with soap and water, helps prevent the spread of pathogenic bacteria. This is especially important before handling food, after using the restroom, and when in contact with individuals who are sick.* *2. Vaccination: Vaccines are available for several bacterial infections, such as tetanus, diphtheria, pertussis, and pneumococcal diseases. Ensuring appropriate vaccination helps protect against these pathogens.* Eukaryotes: *1. Beneficial Impact: Eukaryotes have various positive effects on human health. For example, plants provide us with essential nutrients, medicinal compounds, and oxygen through photosynthesis. Additionally, beneficial eukaryotic organisms like fungi contribute to the decomposition of organic matter and the formation of healthy soils.* *2. Pathogenic Impact: Some eukaryotes can cause diseases in humans. Examples include fungi such as Candida albicans, which can cause yeast infections, and parasitic organisms like Plasmodium spp., responsible for malaria, and Trypanosoma cruzi, causing Chagas disease.* <u>Safety Measures</u>: *1. Personal Hygiene: Maintaining personal hygiene, including regular bathing, cleaning of living spaces, and proper handling and storage of food, helps minimize the risk of fungal and parasitic infections.* *2. Vector Control: Controlling vectors like mosquitoes and ticks helps prevent the transmission of diseases caused by parasitic eukaryotes. Measures include using insect repellents, wearing protective clothing, and eliminating breeding sites.* *3. Proper Food Handling: Properly washing, cooking, and storing food helps prevent the growth and spread of eukaryotic pathogens. This includes refrigerating perishable items, avoiding cross-contamination, and following food safety guidelines.* <u>Assessment</u> 1. What is the role of beneficial bacteria in human health? 2. Give an example of a prokaryotic organism that can cause disease in humans. 3. How can good hygiene practices help prevent the spread of pathogenic bacteria? 4. Name a eukaryotic organism that provides essential nutrients to humans. 5. What are some safety measures to protect against fungal infections? 6. How can vector control help prevent the transmission of diseases caused by eukaryotic parasites? 7. What is the importance of proper food handling in relation to eukaryotic pathogens? 8. Which type of cell, prokaryotic or eukaryotic, is found in plants? 9. How do eukaryotic fungi contribute to healthy soils? 10. Name a vaccine-preventable bacterial infection.	

PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

THIRD TERM
WEEKLY LESSON NOTES
WEEK 2

Week Ending: 07-07-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Life Cycles Of Organisms	
Class: B8	**Class Size:**	**Sub Strand:** Animal Production	
Content Standard: B8.2.4.1 Recognize the different types of feed for different types of animals	**Indicator:** B8.2.4.1.1 Compare and contrast the different types of feed for different types of animals		**Lesson:** 1 of 2
Performance Indicator: Learners can compare and contrast the different types of feed for different types of animals		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 62			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Revise with learners on the previous lesson. Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Display pictures or illustrations of different animals and ask the learners to identify them. Initiate a class discussion by asking the learners about the types of food they think these animals eat. Explain that different animals have different dietary needs and require specific types of feed to stay healthy and thrive. Present a list of common types of animals (e.g., cows, chickens, dogs, cats, rabbits, birds) on the board or chart paper. Discuss each animal one by one, asking the learners to suggest the types of feed that are suitable for each animal. Facilitate a class discussion to identify the specific dietary requirements of each animal and the types of feed they consume. Introduce the concept of categorizing animal feed based on its source and form. Explain that animal feed can be broadly categorized into three groups: • plant-based feed, • animal-based feed, and • processed feed. Discuss examples of feed types within each category, such as grass, grains, insects, meat, and commercial pellet feed. Write these categories and examples on the board or chart paper.	Pictures and charts

	Have learners match the animals with the appropriate feed types by drawing lines or writing the corresponding numbers. <u>Assessment</u> **Animals**: Cow Cat Dog Chicken Rabbit Bird **Types of Feed**: a. Grass b. Pellet feed c. Meat d. Grains e. Insects f. Hay	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

Week Ending: 07-07-2023	**DAY:**	**Subject:** Science
Duration: 100mins		**Strand:** Life Cycles Of Organisms
Class: B8	**Class Size:**	**Sub Strand:** Animal Production

Content Standard: B8.2.4.2 Demonstrate understanding of the importance of water and animal feed to the growth of animals	**Indicator:** B8.2.4.2.1 Explain the importance of water and animal feed to the growth of animals	**Lesson:** 1 of 2

Performance Indicator: Learners can explain the importance of water and animal feed to the growth of animals	**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:

References: Science Curriculum Pg. 63

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Revise with learners on the previous lesson. Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Discuss the types of nutrients and their sources in the different types of animal feed. 1. Carbohydrates: • *Sources: Grains (such as corn, wheat, barley, and oats), grasses, hay, silage, and root crops (like potatoes and beets).* • *Function: Carbohydrates provide energy for animals' daily activities, growth, and reproduction.* 2. Proteins: • *Sources: Soybean meal, fishmeal, meat and bone meal, poultry by-products, legumes (such as alfalfa and clover), and some grains (like soybeans and field peas).* • *Function: Proteins are essential for muscle development, tissue repair, enzyme production, and the formation of hormones and antibodies.* 3. Fats and Oils: • *Sources: Vegetable oils (like soybean oil and canola oil), animal fats, fish oils, and oilseeds (such as sunflower seeds and flaxseeds).* • *Function: Fats and oils are concentrated sources of energy and provide essential fatty acids. They also aid in the absorption of fat-soluble vitamins.* 4. Vitamins: • *Sources: Fresh forage, green leafy vegetables, grains, and commercial vitamin supplements.* • *Function: Vitamins are necessary for various metabolic processes, proper growth, and the maintenance of overall health. They include vitamins A, D, E, K, and B-complex vitamins.* 5. Minerals:	Pictures and charts

	• *Sources: Mineral supplements, salt blocks, bone meal, fishmeal, and various feed ingredients.* • *Function: Minerals, such as calcium, phosphorus, potassium, magnesium, and trace minerals (like iron, zinc, copper, and selenium), are critical for bone development, nerve function, enzyme systems, and other physiological processes.* 6. Water: • *Sources: Clean drinking water is the primary source.* • *Function: Water is essential for hydration, nutrient absorption, digestion, temperature regulation, and overall cellular function in animals.* Select and discuss appropriate feed for animal based on the proportions of nutrients indicated on the package or labels List and discuss the usefulness of water and feed for the growth and reproduction of animals. <u>Water</u>: • *Hydration: Water is crucial for maintaining proper hydration in animals. It is involved in various physiological processes, including digestion, nutrient absorption, and waste elimination. Adequate water intake helps animals regulate their body temperature and maintain overall physiological balance.* • *Nutrient Transport: Water acts as a carrier for nutrients, aiding in their absorption and transportation throughout the animal's body. It helps dissolve and distribute essential nutrients, such as carbohydrates, proteins, minerals, and vitamins, to the cells and tissues where they are needed for growth, repair, and reproduction.* • *Metabolic Reactions: Water is a vital component of many metabolic reactions that occur within an animal's body. These reactions are responsible for energy production, synthesis of proteins and enzymes, and the breakdown and utilization of nutrients. Without sufficient water, these processes can be compromised, leading to reduced growth and reproduction.* • *Milk Production: In lactating animals, water intake is crucial for milk production. Adequate hydration ensures sufficient milk volume and quality, which is vital for the growth and development of offspring.* • *Reproduction: Proper hydration is necessary for successful reproduction in animals. Water is involved in various reproductive processes, including the development of reproductive organs, hormone regulation, semen production, and the maintenance of pregnancy.* <u>Feed</u>: • *Energy and Nutrient Source: Feed provides animals with the necessary energy and nutrients for growth, development, and reproduction. It supplies carbohydrates, proteins, fats, vitamins, minerals, and other essential nutrients that support various physiological functions and promote optimal body condition.* • *Growth and Development: Adequate and balanced feed promotes proper growth and development in young animals. It provides the necessary nutrients for bone formation, muscle development, and overall body growth. Proper nutrition during early stages is crucial for achieving optimal adult size and body composition.* • *Reproductive Performance: High-quality feed plays a significant role in the reproductive performance of animals. It supports optimal reproductive*	

	organ function, hormone production, and fertility. Balanced nutrition ensures proper ovulation, sperm production, and successful conception, leading to healthy offspring. • *Milk Production: For lactating animals, appropriate feed is essential for sustaining milk production. It supplies the necessary energy and nutrients required for milk synthesis, ensuring proper nutrition for the young animals.* Learners in their groups predict what will happen to animals who are not provided with adequate water. <u>Assessment</u> 1. Why is water important for animals? 2. How does water help in nutrient transport within an animal's body? 3. Name one way in which water is involved in the reproductive processes of animals. 4. What role does feed play in providing energy to animals? 5. How does feed support the growth and development of young animals?	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

THIRD TERM
WEEKLY LESSON NOTES
WEEK 3

Week Ending: 14-07-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Cycles	
Class: B8	**Class Size:**	**Sub Strand:** Ecosystem	
Content Standard: B8.3.3.1 Demonstrate an understanding of the interdependence of organisms in an ecosystem and their interaction	**Indicator:** B8.3.3.1.1 Explore the feeding relationships within an ecosystem		**Lesson:** 1 of 2
Performance Indicator: Learners can explore the feeding relationships within an ecosystem		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 67			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Using questions and answers, review to find out what learners already know about ecosystem. Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Begin the lesson by discussing the concept of an ecosystem and its components. <u>Components of an ecosystem</u> *1. Biotic Factors: These are the living organisms within an ecosystem, including plants, animals, fungi, and microorganisms. Biotic factors interact with each other and with the abiotic factors to sustain life within the ecosystem.* *2. Producers: Producers, often green plants or photosynthetic organisms, are capable of converting sunlight, water, and carbon dioxide into organic matter through the process of photosynthesis. They form the base of the food chain by producing energy-rich organic compounds.* *3. Consumers: Consumers, also known as heterotrophs, are organisms that obtain their energy by consuming other organisms. They can be categorized into primary consumers (herbivores), secondary consumers (carnivores that feed on herbivores), and tertiary consumers (carnivores that feed on other carnivores).* *4. Decomposers: Decomposers, such as bacteria and fungi, play a vital role in an ecosystem by breaking down organic matter from dead organisms and waste materials. They release nutrients back into the environment, allowing them to be recycled and used by producers.* *5. Abiotic Factors: These are the non-living components of an ecosystem that influence the distribution and characteristics of organisms. Abiotic factors include sunlight, temperature, water availability, soil composition, air quality, and geological features. They*	Pictures and Charts

directly or indirectly affect the survival, reproduction, and behavior of organisms.

6. Habitat: A habitat refers to the specific place within an ecosystem where an organism lives and meets its requirements for food, water, shelter, and reproduction. Different organisms have adaptations that allow them to thrive in specific habitats within an ecosystem.

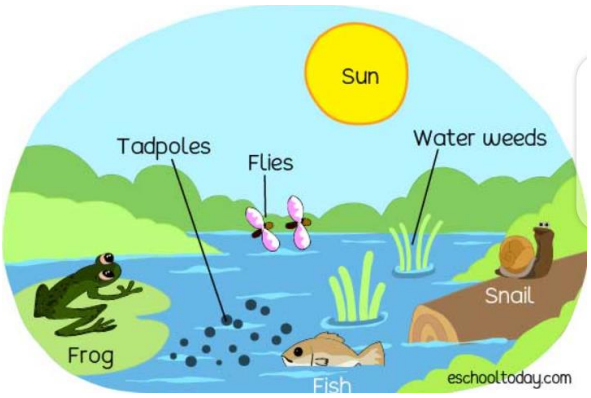
7. Energy Flow: Energy flows through an ecosystem in a unidirectional manner. It enters the ecosystem through sunlight, which is converted into chemical energy by producers through photosynthesis. This energy is transferred to consumers as they feed on other organisms. However, energy is not recycled but eventually dissipates as heat.

8. Food Chains and Food Webs: Food chains depict the transfer of energy from one organism to another in a linear sequence, showing the flow of energy from producers to consumers. Food webs are more complex, interconnected networks of food chains that illustrate the feeding relationships among various organisms within an ecosystem.

Ask learners to brainstorm and list examples of different organisms they can find in an ecosystem.

Describe an ecosystem as a self-sustaining unit in which components interact. E.g. a pond, a forest and many others.

Ecosystem: An ecosystem is defined as the interactions between living and non-living things in a given area.



<u>Assessment</u>

1. What is an ecosystem?
2. Name the components of an ecosystem.
3. What are producers in an ecosystem and what is their role?
4. Differentiate between primary consumers and secondary consumers.
5. What is the role of decomposers in an ecosystem?
6. Give examples of abiotic factors in an ecosystem.
7. Explain the concept of a habitat and its significance in an ecosystem.
8. How does energy flow through an ecosystem?
9. Define a food chain and a food web. How are they different?
10. Why is it important to maintain balance and sustainability within an ecosystem?

PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

Week Ending: 14-07-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Cycles	
Class: B8	**Class Size:**	**Sub Strand:** Ecosystem	
Content Standard: B8.3.3.1 Demonstrate an understanding of the interdependence of organisms in an ecosystem and their interaction	**Indicator:** B8.3.3.1.1 Explore the feeding relationships within an ecosystem		**Lesson:** 2 of 2
Performance Indicator: Learners can explore the feeding relationships within an ecosystem		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 67			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Revise with learners on the previous lesson. Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Engage learners in a discussion about the role of the sun in sustaining life on Earth. Introduce the objective of understanding how life on Earth would be without the sun. Learners in groups discuss the potential consequences and challenges that would arise in the absence of the sun's energy. Define and explain the terms: producer, primary consumer, secondary consumer, food chain, and food web. Provide examples of each term and discuss their roles in energy transfer within an ecosystem. Encourage learners to ask questions and provide their own examples to reinforce understanding. Distribute sample diagrams of food chains and food webs to each learner. Instruct learners to study the diagrams and identify the different organisms involved. Ask learners to create their own food chain and food web diagrams using the provided examples or their own imagination. Learners to label each organism and indicate the flow of energy from the sun to the different trophic levels. Ask learners to present their created diagrams to the class. Allow time for learners to explain the flow of energy and interactions depicted in their diagrams.	Pictures and charts

	Engage the class in a discussion about the interdependence of organisms and the importance of energy transfer in an ecosystem. <u>Assessment</u> 1. What is the role of the sun in sustaining life on Earth? 2. What would happen to life on Earth if the sun were absent? 3. Define and differentiate between a producer, primary consumer, and secondary consumer in an ecosystem. 4. Explain the terms "food chain" and "food web" and their significance in energy transfer in an ecosystem. 5. How does energy flow through a food chain? 6. How does a food web differ from a food chain? Give an example of each. 7. Create a diagram illustrating a food chain, labeling the different organisms and indicating the flow of energy from the sun. 8. Discuss the interdependence of organisms in an ecosystem and how energy transfer contributes to this interdependence. 9. How does understanding energy transfer in ecosystems contribute to our appreciation of the natural world? 10. Can you think of any examples of real-world ecosystems and describe the energy transfer patterns within them?	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

THIRD TERM
WEEKLY LESSON NOTES
WEEK 4

Week Ending: 21-07-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Systems	
Class: B8	**Class Size:**	**Sub Strand:** Farming Systems	
Content Standard: B8.3.4.1 Demonstrate understanding of the different crop, animal and land combinations under various farming systems	**Indicator:** B8.3.4.1.1 Identify and describe the types of crops, animals and land combinations for the different farming systems	**Lesson:** 1 of 2	
Performance Indicator: Learners can explore the feeding relationships within an ecosystem		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 68			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Begin the lesson by asking learners about their understanding of farming systems and their importance in agriculture. Explain that farming systems refer to the different methods and approaches used in agricultural practices.	
PHASE 2: **NEW LEARNING**	Introduce different types of farming systems, such as subsistence farming, commercial farming, mixed farming, and specialized farming. Discuss the characteristics and objectives of each farming system, emphasizing the types of crops, animals, and land combinations used in each system. *1. Subsistence Farming:* *Subsistence farming is a farming system in which farmers primarily produce food to meet the needs of their own families or local communities. The focus is on growing crops and raising livestock for personal consumption rather than for sale in the market. It often involves small plots of land and traditional farming methods. The main objective is to ensure food security and self-sufficiency. However, subsistence farming usually yields low productivity and limited surplus for trade.* *2. Commercial Farming:* *Commercial farming is a farming system in which farmers produce crops and raise livestock primarily for sale in the market. The main objective is profit generation. Commercial farmers often cultivate large areas of land and use modern agricultural technologies, machinery, and practices to maximize yields and meet market demands. They grow cash crops and raise livestock for meat, dairy, or other products to supply the market. Commercial farming is typically characterized by specialization, economies of scale, and market-oriented production.* *3. Mixed Farming:* *Mixed farming is a farming system that combines both crop cultivation and livestock rearing on the same farm. The integration of crops and livestock allows for the efficient use of resources. For example, livestock can provide manure for fertilizing crops, while crop residues can be used as animal feed. Mixed farming*	Images or examples of different farming systems

	provides a diversified production system that offers stability and reduces risks. Farmers can benefit from multiple income streams and maximize resource utilization. *4. Specialized Farming:* *Specialized farming, also known as monoculture or single-crop farming, focuses on the intensive production of a single crop or a specific type of livestock. Specialization allows farmers to exploit specific market demands or take advantage of favorable growing conditions for a particular crop or livestock species. This farming system often involves large-scale production and the adoption of specialized technologies and practices tailored to the specific crop or livestock. While specialization can lead to increased productivity and profitability, it also poses risks, such as vulnerability to market fluctuations or the spread of diseases that target the specialized crop or livestock.* Provide examples and descriptions of specific farming systems, focusing on the types of crops, animals, and land combinations used in each system. Discuss the characteristics of crops grown in each system, such as staple crops, cash crops, or specialized crops. Describe the types of animals typically raised in each farming system, considering factors like livestock, poultry, or aquaculture. <u>Assessment</u> 1. What are farming systems? 2. Name three different types of farming systems. 3. What factors are considered when determining the types of crops grown in a farming system? 4. Describe two examples of land utilization in farming systems. 5. How do specialized farming systems differ from mixed farming systems?	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson. <u>Homework</u> Assign learners to create posters or presentations on a specific farming system, highlighting its characteristics, examples, and the benefits and drawbacks associated with it.	

Week Ending: 21-07-2023	**DAY:**	**Subject:** Science
Duration: 100mins		**Strand:** Systems
Class: B8	**Class Size:**	**Sub Strand:** Farming Systems

Content Standard: B8.3.4.1 Demonstrate understanding of the different crop, animal and land combinations under various farming systems	**Indicator:** B8.3.4.1.1 Identify and describe the types of crops, animals and land combinations for the different farming systems	**Lesson:** 2 of 2

Performance Indicator: Learners can explore the feeding relationships within an ecosystem	**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:

References: Science Curriculum Pg. 68

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Revise with learners on the previous lesson. Share performance indicators with learners and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Explain how the land is utilized in each farming system, including factors like crop rotation, terracing, or land diversification. Engage learners in a discussion on the advantages and disadvantages of each farming system identified. Ask learners to brainstorm and share the advantages of each system, such as food security, income generation, or resource utilization. Prompt learners to consider the disadvantages as well, including environmental impacts, labor intensiveness, or market risks. Divide learners into small groups and assign each group a specific farming system to focus on. Instruct the groups to research and prepare arguments highlighting the advantages and disadvantages of their assigned farming system. Conduct a debate or group discussion, allowing each group to present their points and counterarguments. Encourage learners to listen actively, take notes, and ask questions to deepen their understanding of each farming system. <u>Assessment</u> 1. Discuss one advantage and one disadvantage of subsistence farming. 2. What are some advantages of commercial farming? 3. Explain one disadvantage of specialized farming. 4. How does crop rotation benefit farming systems? 5. In what ways can farming systems contribute to food security?	Images or examples of different farming systems

PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson. <u>Homework</u> Assign learners to create posters or presentations on a specific farming system, highlighting its characteristics, examples, and the benefits and drawbacks associated with it.	

THIRD TERM
WEEKLY LESSON NOTES
WEEK 5

Week Ending: 28-07-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Systems	
Class: B8	**Class Size:**	**Sub Strand:** Importance of Crops & Animals	
Content Standard: B8.3.4.1 Demonstrate understanding of the different crop, animal and land combinations under various farming systems	**Indicator:** B8.3.4.1.2 Discuss the usefulness of the different crops and animals involved in the different farming systems	**Lesson:** 1 of 2	
Performance Indicator: Learners can discuss the usefulness of the different crops and animals involved in the different farming systems		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 68			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Learners in their groups discuss the concept of farming systems and their importance in agricultural practices. Ask learners if they are familiar with different types of farming systems and their components.	
PHASE 2: **NEW LEARNING**	Explain how the different components of farming systems contribute to each other Discuss and write down the contributions of crops and animals towards the sustainability of each farming system. Engage learners in a discussion about the different components of farming systems, such as crops, animals, land, water, and inputs like fertilizers or machinery. Discuss how these components work together and contribute to the overall sustainability and productivity of the farming system. Provide learners with handouts or worksheets containing information about different farming systems, such as subsistence farming, commercial farming, mixed farming, and specialized farming. Discuss the characteristics and objectives of each farming system, highlighting the role of crops and animals in each system. Divide the class into small groups and assign each group a specific farming system to focus on. In their groups, learners will discuss and write down the contributions of crops and animals towards the sustainability of their assigned farming system.	Images or examples of different farming systems

	Each group will present their findings to the rest of the class, explaining the interdependence between crops and animals and how they support the specific farming system. <u>Assessment</u> • How do crops and animals contribute to the sustainability of farming systems? • Can you provide an example of a farming system where both crops and animals are equally important? • Why is it important to maintain a balance between crop production and animal husbandry in farming systems? • How do the different components of farming systems, such as land, water, and inputs, support the overall productivity of the system? • What are some factors to consider when designing a balanced and sustainable farming system?	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

Week Ending: 28-07-2023	**DAY:**	**Subject:** Science
Duration: 100mins		**Strand:** Systems
Class: B8	**Class Size:**	**Sub Strand:** Importance of Crops & Animals

Content Standard: B8.3.4.1 Demonstrate understanding of the different crop, animal and land combinations under various farming systems	**Indicator:** B8.3.4.1.2 Discuss the usefulness of the different crops and animals involved in the different farming systems	**Lesson:** 2 of 2

Performance Indicator: Learners can discuss the usefulness of the different crops and animals involved in the different farming systems	**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:

References: Science Curriculum Pg. 68

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Learners in their groups discuss the concept of farming systems and their importance in agricultural practices. Ask learners if they are familiar with different types of farming systems and their components.	
PHASE 2: **NEW LEARNING**	Explain how the different components of farming systems contribute to each other Discuss and write down the contributions of crops and animals towards the sustainability of each farming system. Engage learners in a discussion about the different components of farming systems, such as crops, animals, land, water, and inputs like fertilizers or machinery. Discuss how these components work together and contribute to the overall sustainability and productivity of the farming system. Provide learners with handouts or worksheets containing information about different farming systems, such as subsistence farming, commercial farming, mixed farming, and specialized farming. Discuss the characteristics and objectives of each farming system, highlighting the role of crops and animals in each system. Divide the class into small groups and assign each group a specific farming system to focus on. In their groups, learners will discuss and write down the contributions of crops and animals towards the sustainability of their assigned farming system.	Images or examples of different farming systems

	Each group will present their findings to the rest of the class, explaining the interdependence between crops and animals and how they support the specific farming system. <u>Assessment</u> • How do crops and animals contribute to the sustainability of farming systems? • Can you provide an example of a farming system where both crops and animals are equally important? • Why is it important to maintain a balance between crop production and animal husbandry in farming systems? • How do the different components of farming systems, such as land, water, and inputs, support the overall productivity of the system? • What are some factors to consider when designing a balanced and sustainable farming system?	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

THIRD TERM
WEEKLY LESSON NOTES
WEEK 6

Week Ending: 04-08-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Forces & Energy	
Class: B8	**Class Size:**	**Sub Strand:** Magnetization & Magnetic Force	
Content Standard: B8.4.4.1 Demonstrate the production of magnet, domestic and industrial application of Magnetic force and its relationship with Newton's Second law of motion and in everyday life	**Indicator:** B8.4.4.1.1 Demonstrate simple ways of making magnets and show how magnetic force can be applied in domestic and industrial activities	**Lesson:** 1 of 2	
Performance Indicator: Learners can demonstrate simple ways of making magnets and show how magnetic force can be applied in domestic and industrial activities		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 74			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Revise with learners on the previous lesson. *Engage the learners by asking questions such as: "What are magnets used for?" and "How do magnets work?"* Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Divide the learners into small groups. Provide each group with iron nails, paperclips, and screws. Instruct the learners to rub the magnets along one direction on the materials provided. They should repeat this process several times. Conduct several demonstrations to showcase the power of magnetic force: a. Use a compass to demonstrate how a magnet aligns with Earth's magnetic field. b. Show how a magnet can attract small metal objects from a distance. c. Demonstrate how the poles of magnets repel or attract each other. Lead a class discussion on the concept of magnetic force and its applications in everyday life and industry. Some guiding questions include: • How can magnetic force be used in domestic activities, such as hanging up refrigerator magnets or securing cabinet doors? • In what ways is magnetic force used in industrial activities, such as manufacturing or transportation? Provide real-world examples to illustrate the applications of magnetic force, such as:	iron nails, paperclips, screws, small magnetic objects

	• Magnetic levitation trains (Maglev trains) that use magnetic force for propulsion. • Electric motors that convert electrical energy into mechanical energy using magnets. • Magnetic separators used in recycling facilities to separate magnetic and non-magnetic materials. Learners demonstrate some application of magnetic force in domestic and industrial activities (E. g. compass, alarms, loud speakers, etc.). Explore other industrial and domestic applications of magnetic force and present findings.	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

Week Ending: 04-08-2023	**DAY:**	**Subject:** Science
Duration: 100mins		**Strand:** Forces & Energy
Class: B8	**Class Size:**	**Sub Strand:** Magnetization & Magnetic Force

Content Standard: B8.4.4.1 Demonstrate the production of magnet, domestic and industrial application of Magnetic force and its relationship with Newton's Second law of motion and in everyday life	**Indicator:** B8.4.4.1.2. Explain the relationship between magnetic force and Newton's Second Law of motion; and show the law's application to life	**Lesson:** 2 of 2

Performance Indicator: Learners can explain the relationship between magnetic force and Newton's Second Law of motion	**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:

References: Science Curriculum Pg. 74

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Begin by reviewing Newton's Second Law of Motion, explaining that it states that the acceleration of an object is directly proportional to the force applied and inversely proportional to its mass. Ask the learners to recall examples of forces they have learned about, such as gravity or friction.	
PHASE 2: **NEW LEARNING**	Show a magnet to the learners and explain that magnets can exert a force on certain materials, causing them to move. Demonstrate the concept by using a magnet to move small metal objects, such as paperclips or toy cars. Discuss how the magnet's force affects the motion of the objects, and how the strength of the force can be adjusted by changing the distance between the magnet and the object. Divide the learners into small groups. Provide each group with a toy car and a magnet. Instruct the learners to place the magnet on the car and observe the effect on the car's motion as they move the magnet. Encourage the learners to vary the force applied by adjusting the distance between the magnet and the car. Have the learners record their observations and discuss the relationship between the magnetic force applied and the resulting acceleration of the car. Lead a class discussion on the relationship between magnetic force and Newton's Second Law of Motion. Explain how the force exerted by the magnet can accelerate or decelerate an object depending on the direction of the force.	iron nails, paperclips, screws, small magnetic objects

	Ask the learners to brainstorm and share real-life examples where magnetic force and Newton's Second Law of Motion are applied, such as: • Maglev trains that use magnetic forces to levitate and propel the train forward. • Electric motors that utilize magnetic forces to convert electrical energy into mechanical energy. • MRI machines that use powerful magnets to generate images of the body. <u>Assessment</u> Perform an experiment to show the relationship between force and motion using magnetic force, and the principle of Newton's Second Law of Motion. Materials: *1. A small magnet (such as a neodymium magnet)* *2. A flat surface (e.g., table or desk)* *3. A piece of string* *4. A small object (e.g., a paperclip or a lightweight metal object)* *5. A ruler or measuring tape* Procedure: *1. Place the flat surface (table or desk) in a stable position.* *2. Tie one end of the string to the small object (paperclip or lightweight metal object).* *3. Position the small magnet on the flat surface, so it is stationary.* *4. Place the small object near the magnet without touching it.* *5. Mark the initial position of the small object on the flat surface.* *6. Gently pull the free end of the string horizontally, so the small object moves towards the magnet.* *7. Observe and record the distance traveled by the small object before it comes to a stop.* *8. Repeat the experiment several times, pulling the string with different amounts of force each time.* *9. Measure and record the distance traveled by the small object for each force applied.*	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

THIRD TERM
WEEKLY LESSON NOTES
WEEK 7

Week Ending: 11-08-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Forces & Energy	
Class: B8	**Class Size:**	**Sub Strand:** Complex Machines	
Content Standard: B8.4.4.2 Demonstrate understanding of complex machines and how they work	**Indicator:** B8.4.4.2.1 Identify complex machines and describe their functions in life		**Lesson:** 1 of 2
Performance Indicator: Learners can identify complex machines and describe their functions in life		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 75			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Revise with learners on the previous lesson. Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Recap what simple machines are. Brainstorm learners for the meaning of machine. *A simple machine is any device that allows work to be done easier and faster*. In groups learners give examples of simple machines and describe its uses. For example, a pair of scissors can be used to cut a piece of cloth easier and faster than tearing it with your hands. The use of the scissors saves us time and energy that can be used for other things as well. Other examples include plier, spanner, hammer, wheelbarrow, screw driver, crow bar, etc. Introduce the concept of complex machines as advanced systems that consist of multiple simple machines working together. Explain that complex machines are designed to perform more sophisticated tasks compared to simple machines. Discuss how complex machines combine the functions of different simple machines to achieve their purposes. Show visuals or models of various complex machines (e.g., an automobile, a computer, an airplane). Ask learners to identify the simple machines within these complex machines. Discuss the identified simple machines and their respective functions.	Pictures and charts

	<u>Assessment</u> 1. What is a complex machine? 2. How are complex machines different from simple machines? 3. Can you give an example of a complex machine and identify the simple machines within it? 4. Why do complex machines require multiple simple machines to work together? 5. How do complex machines perform more sophisticated tasks compared to simple machines?	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

Week Ending: 11-08-2023	**DAY:**	**Subject:** Science
Duration: 100mins		**Strand:** Forces & Energy
Class: B8	**Class Size:**	**Sub Strand:** Complex Machines

Content Standard: B8.4.4.2 Demonstrate understanding of complex machines and how they work	**Indicator:** B8.4.4.2.1 Identify complex machines and describe their functions in life	**Lesson:** 1 of 2

Performance Indicator: Learners can explain how the functions of a complex machine can improve the quality of life.	**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:

References: Science Curriculum Pg. 75

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Revise with learners on the previous lesson. Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Discuss how complex machines play a crucial role in various aspects of everyday life. Explain that complex machines are designed to make tasks easier, more efficient, and more precise. Highlight the impact of complex machines on transportation, communication, manufacturing, and other sectors. Provide examples of complex machines such as smartphones, medical equipment, or power plants. Ask learners to identify and discuss the specific functions of these complex machines. Prompt learners to explain how these functions contribute to improving the quality of life. Divide learners into small groups. Assign each group a case study of a complex machine (e.g., a robotic arm used in assembly lines, a GPS navigation system). In their groups, learners should analyze the functions of the assigned complex machine and discuss its impact on society and daily life. <u>Assessment</u> 1. What are some examples of complex machines that you encounter in your daily life? 2. How do complex machines improve efficiency and precision in various sectors such as transportation or manufacturing?	Pictures and charts

	3. Choose one specific complex machine (e.g., a smartphone, a medical scanner) and explain how its functions contribute to improving the quality of life. 4. Can you think of any potential drawbacks or challenges associated with complex machines? 5. How do complex machines impact society as a whole and our daily lives in particular?	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

THIRD TERM
WEEKLY LESSON NOTES
WEEK 8

Week Ending: 18-08-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Forces And Energy	
Class: B8	**Class Size:**	**Sub Strand:** Agricultural Tools	
Content Standard: B8.4.5.1 Demonstrate knowledge and skills in the use of basic and simple agricultural tools for basic on-farm activities	**Indicator:** B8.4.5.1.1 Show and discuss the use of basic and simple agricultural tools for basic on-farm activities.		**Lesson:** 1 of 2
Performance Indicator: Learners can discuss the use of basic and simple agricultural tools for basic on-farm activities		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 78			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Engage learners by asking them to name agricultural tools they know Record responses on the board. Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Collect and list different types of agricultural tools used for on-farm activities. Display and explain various agricultural tools, using images or actual samples. Discuss the name, purpose, and on-farm applications of each tool Show a video or demonstration of farmers using the discussed tools in real farm activities. Discuss how the tools are being used and their importance for each task. *1. Hoe: This is a versatile tool that has a long handle and a flat, thin blade at the end. It's primarily used to remove weeds, break up the soil, and dig trenches for seeds. It can also be used to move small amounts of soil.* *2. Rake: A rake is a tool with a long handle and a series of tines (or teeth) at the end. It's used to gather leaves or other debris, but can also be used to break up and level the soil.* *3. Shovel: A shovel is another long-handled tool, this time with a broad and usually curved blade. It's primarily used for digging, lifting, and moving bulk materials such as soil, gravel, or snow.* *4. Spade: While similar to a shovel, a spade typically has a flat, rectangular blade. It's primarily used for digging and moving soil, but its straight edge makes it particularly good for creating straight-sided holes or trenches.*	Pictures and charts

	5. Trowel: A trowel is a small hand tool with a short handle and a flat blade. It's typically used for small digging tasks, such as creating holes for seedlings or bulbs. *6. Pruning Shears: Pruning shears are a type of scissors for use on plants. They are strong enough to prune hard branches of trees and shrubs, sometimes up to two centimeters thick.* *7. Garden Fork: A garden fork, also known as a digging fork or spading fork, is a gardening implement, with a handle and several (usually four) short, sturdy tines. It is used for loosening, lifting and turning over soil in gardening and farming.* *8. Wheelbarrow: A wheelbarrow is a small hand-propelled vehicle, usually with just one wheel, designed to be pushed and guided by a single person using two handles at the rear. It is designed to distribute the weight of its load between the wheel and the operator, so enabling the convenient carriage of heavier and bulkier loads than would be possible were the weight carried entirely by the operator.* Group learners and assign each group a specific on-farm activity Have groups discuss and present which tools would be most suitable for their assigned activity <u>Assessment</u> Learners match each tool with the familiar type of agricultural activity it is used for and create an album of the tools. 1. What is the primary use of a hoe in agricultural activities? 2. Why is it important to select the appropriate tool for a specific farm task? 3. How would you use a rake on a farm or in a garden? 4. Describe how to safely use a pair of pruning shears. 5. Why is a shovel important for agricultural activities?	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

Week Ending: 18-08-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Forces And Energy	
Class: B8	**Class Size:**	**Sub Strand:** Agricultural Tools	
Content Standard: B8.4.5.1 Demonstrate knowledge and skills in the use of basic and simple agricultural tools for basic on-farm activities	**Indicator:** B8.4.5.1.2 Engage in the use of basic and simple agricultural tools for basic farm activities.	**Lesson:** 2 of 2	
Performance Indicator: Learners can discuss the use of basic and simple agricultural tools for basic on-farm activities	**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:		
References: Science Curriculum Pg. 78			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Learners in groups discuss the importance of using the right tools for different agricultural tasks. Briefly discuss safety measures when using these tools. Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Discuss different types of agricultural tools and their uses in farm activities. Show and explain each tool in detail, discussing its use in specific tasks. Walk the learners through the school garden or farm, if available. Demonstrate how to use each tool correctly and safely, performing various tasks such as planting, weeding, or turning the soil. Divide the learners into groups and assign each group a specific task to complete in the garden or farm, such as planting seeds, weeding a patch of land, or turning the soil. Each group will choose the appropriate tools for their assigned task and use them to complete the task. Let each group rotate through different farm tasks and practice using the relevant agricultural tools under your supervision. Present different farm tasks and ask the learners to discuss and decide which agricultural tools would be best suited for each task. Encourage them to consider the characteristics of each tool and how it matches the requirements of the specific task. <u>Assessment</u> 1. Name three factors you should consider when selecting a tool for a specific farm task. 2. What precautions should be taken when using agricultural tools?	Pictures and charts

	3. If you were tasked with preparing a small patch of land for planting, which tools would you select? Explain your choices. 4. How is a spade different from a shovel, and when might you use each? 5. What tools might be useful for weeding a garden, and why?	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

THIRD TERM
WEEKLY LESSON NOTES
WEEK 9

Week Ending: 25-08-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Humans & The Environment	
Class: B8	**Class Size:**	**Sub Strand:** Climate Change & Green Economy	
Content Standard: B8.5.4.1 Demonstrate an understanding of the effects of climate change in the world and greening of other tropical countries including Ghana.	**Indicator:** B8.5.4.1.1 Explain the concept of climate change and its effect on the environment.		**Lesson:** 1 of 2
Performance Indicator: Learners can explain the concept of climate change and its effect on the environment.		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 78			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Revise with learners to review their understanding in the previous lesson. Share performance indicators with learners.	
PHASE 2: **NEW LEARNING**	Discuss the weather and how it changes over time. Transition this discussion into the difference between weather and climate. Introduce the concept of climate change, emphasizing that it involves long-term alterations in climate patterns, including temperature, precipitation, wind, and other factors. Discuss the signs of climate change, such as increasing global temperatures, melting ice caps, rising sea levels, and changing weather patterns. Explain the impact of climate change on the environment, including loss of biodiversity, more frequent and severe weather events, changes in ecosystems, and threats to human societies. Introduce the concept of a green economy and how it relates to efforts to combat climate change. Assign learners to small groups and have them research the causes and effects of climate change. Each group should prepare a brief report to present to the class. Discuss various methods that countries are using to adapt to climate change. Mention examples like tree planting, legislation on bush burning, renewable energy initiatives, and others. <u>Assessment</u> 1. List three signs of climate change that we can observe in our environment.	Pictures and charts

	2. What are some of the effects of climate change on biodiversity? 3. Name two ways in which countries are adapting to climate change. 4. How does a green economy help combat climate change?	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

Week Ending: 25-08-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Humans & The Environment	
Class: B8	**Class Size:**	**Sub Strand:** Climate Change & Green Economy	
Content Standard: B8.5.4.1 Demonstrate an understanding of the effects of climate change in the world and greening of other tropical countries including Ghana.	**Indicator:** B8.5.4.1.2. Describe climate change and green economy actions.		**Lesson:** 2 of 2
Performance Indicator: Learners can describe climate change and green economy actions.		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 79			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Revise with learners to review their understanding in the previous lesson. Share performance indicators with learners.	
PHASE 2: **NEW LEARNING**	Recap the concept of climate change and the impacts it has on the environment. Introduce the concept of climate change adaptation and mitigation strategies, focusing on how these can be applied on a community level. Explain the different climate change adaptation measures that can be applied in the community, such as water conservation practices, planting local and drought-resistant crops, creating green spaces, etc. Discuss various mitigation strategies such as reducing energy consumption, promoting renewable energy sources, recycling and waste management, etc. Engage learners in a discussion about the feasibility and potential impact of these measures in their own community. Encourage them to think about the specific challenges and advantages their community might have. Divide learners into small groups and assign each group to come up with a practical plan on how their community can implement one adaptation measure and one mitigation strategy. Each group should consider the resources required, the steps needed to implement it, and the potential impact of their plan.	Pictures and charts

	Each group will present their plan to the class, discussing the adaptation measure and mitigation strategy they chose, why they chose them, and how they plan to implement them. <u>Assessment</u> 1. List two climate change adaptation measures that can be applied in your community? 2. What are two mitigation strategies that your community could implement to reduce the effects of climate change? 3. Why is it important for communities to engage in climate change adaptation and mitigation strategies?	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

THIRD TERM
WEEKLY LESSON NOTES
WEEK 10

Week Ending: 01-09-2023	**DAY:**	**Subject:** Science
Duration: 100mins		**Strand:** Humans & The Environment
Class: B8	**Class Size:**	**Sub Strand:** Properties Of Soils

Content Standard: B8.5.5.1 Demonstrate understanding of the differences among soils, plant roots, stems, leaves, flowers, and fruits of plants in the different environments.	**Indicator:** B8.5.5.1.1 Discuss physical properties of soils.	**Lesson:** 1 of 2

Performance Indicator: Learners can discuss physical properties of soils.	**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:

References: Science Curriculum Pg. 80

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Revise with learners to review their understanding in the previous lesson. Share performance indicators with learners.	
PHASE 2: **NEW LEARNING**	Discuss with learners on the different soil types: sandy, loamy, and clay soils. Explain their characteristics, particle sizes, and how they differ in terms of water retention and drainage. Discuss how each soil type supports the root system of plants and how water retention affects plant growth. Divide the class into groups and provide each group with garden trowels or small shovels. Take a field trip to the school garden or a designated area in the community to collect soil samples. Instruct learners to collect samples of sandy, loamy, and clay soils separately. Distribute clear plastic cups, seeds, markers, and handouts with observation sheets. Instruct each group to fill three cups with equal amounts of each soil type. Label the cups accordingly. Have learners plant a seed in each cup and water them with the same amount of water using a graduated cylinder. Ask learners to record their initial observations on the handout, noting the appearance of each soil type and the water added. Place the cups near a window or under a grow light and let the seeds germinate over the next few days.	Pictures and charts

	Bring the cups back to the classroom. Have learners measure the height of the seedlings in each cup using a ruler. Discuss and record the findings on the whiteboard. Lead a discussion based on the observation results: - How did each soil type retain water differently? - How did water retention affect the growth of the seedlings? - Which soil type seemed to support the root system the best? <u>Assessment</u> Ask learners to research and write a short essay on the benefits and challenges of each soil type for specific types of crops or plants.	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

Week Ending: 01-09-2023	**DAY:**	**Subject:** Science
Duration: 100mins		**Strand:** Humans & The Environment
Class: B8	**Class Size:**	**Sub Strand:** Properties Of Soils

Content Standard: B8.5.5.1 Demonstrate understanding of the differences among soils, plant roots, stems, leaves, flowers, and fruits of plants in the different environments	**Indicator:** B8.5.5.1.2 Analyze the physical properties of soils and soil water content and demonstrate their importance in crop production.	**Lesson:** 1 of 2

Performance Indicator: Learners can discuss physical properties of soils.	**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:
References: Science Curriculum Pg. 80	

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Revise with learners to review their understanding in the previous lesson. Share performance indicators with learners.	
PHASE 2: **NEW LEARNING**	Display samples of each soil type and discuss their physical properties: • Sandy: coarse texture, large particle size, good drainage but low nutrient content. • Loamy: balanced texture, medium particle size, and moderate water retention, rich in nutrients. • Clay: fine texture, small particle size, high water retention but can become compacted. Allow learners to touch and feel the texture of each soil type. Present the potted plants grown in different soils to the learners. Ask learners to observe and describe the growth of the plants in each pot – height, leaf size, overall health, etc. Discuss how the physical properties of the soil could influence these observations. Discuss the concept of osmosis and explain how plants absorb water and nutrients from the soil. • Fill two cups with water and add a few drops of food coloring to each cup, making the water visibly colored. • Place celery stalks (or alternative plant) in each cup, ensuring the leaves are still exposed. • Over time (this may extend beyond the duration of the lesson), the colored water will travel up the celery stalk, demonstrating osmosis. • If available, use a microscope to show a close-up of the plant cells absorbing water (this will be more visible in the case of translucent leaves or thin plant tissues).	Pictures and charts

	Engage learners in a discussion about their observations: Which soil type seemed best for plant growth? Why? • How do the physical properties of soil impact water retention and nutrient availability? • How does osmosis help plants absorb the necessary water and nutrients? <u>Project work</u> Ask learners to experiment at home by placing a plant in a cup of colored water and observing any changes in the plant over a week. They should document their observations and write a short report on their findings.	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

THIRD TERM
WEEKLY LESSON NOTES
WEEK 11

REVISION AND END OF TERM ASSESSMENT

Week Ending: 08-09-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Humans & The Environment	
Class: B8	**Class Size:**	**Sub Strand:** Rocks	
Content Standard: B8.5.6.1 Recognize the different types of rocks as origin of different types of soils	**Indicator:** B8.5.6.1.1 Observe and describe different types of rocks as origins of soils.	**Lesson:** 1 of 2	
Performance Indicator: Learners can identify different types of rocks and describe their visible characteristics.	**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:		
References: Science Curriculum Pg. 85			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Revise with learners to review their understanding in the previous lesson. Share performance indicators with learners.	
PHASE 2: **NEW LEARNING**	Brainstorm learners on what rocks are and why they are important to our planet. Introduce the three main rock types: igneous, sedimentary, and metamorphic. Distribute labeled rock samples to each student or group of learners. Provide each student or group with a magnifying glass and rock identification guide. Learners examine their rock samples, noting the name of the rock and using the guide to confirm the classification. After identifying each rock, learners will describe its visible characteristics in their notebooks. For example, color, texture, grain size, luster, and any visible minerals. Facilitate a discussion, asking learners to share their descriptions and noting any similarities or differences between the rock samples. <u>Assessment</u> 1. What are rocks, and why are they important? 2. Name the three main types of rocks. 3. How can you use a rock identification guide to determine the type of rock you have?	Pictures and charts

	4. Describe one physical characteristic you could use to identify a rock. 5. List three visible characteristics you might observe when examining a rock. 6. How might the texture of an igneous rock differ from that of a sedimentary rock?	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

Week Ending: 08-09-2023	**DAY:**	**Subject:** Science
Duration: 100mins		**Strand:** Humans & The Environment
Class: B8	**Class Size:**	**Sub Strand:** Rocks

Content Standard: B8.5.6.1 Recognize the different types of rocks as origin of different types of soils	**Indicator:** B8.5.6.1.1 Observe and describe different types of rocks as origins of soils.	**Lesson:** 2 of 2
Performance Indicator: Learners can collect rock samples from their community, identify them using a guide, and research the stages of weathering of rocks to form soil.	**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 85		

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Revise with learners to review their understanding in the previous lesson. Share performance indicators with learners.	
PHASE 2: **NEW LEARNING**	Ask learners to present the rock they found as homework, describing its visible characteristics. Learners should then use the rock identification guide to attempt to classify their rock. Compare the student-found rocks to the labeled laboratory samples from Lesson 1. Divide learners into small groups and assign each group a specific stage or type of weathering (physical, chemical, and biological). Using classroom resources or the internet, learners will research their assigned stage/type of weathering and how it contributes to soil formation. Each group will then present their findings to the class. <u>Assessment</u> 1. Describe the rock you found in your community. What visible characteristics did you observe? 2. Did you use a rock identification guide to classify your rock? If so, what type of rock did you determine it to be? 3. What is weathering, and why is it important in the formation of soil? 4. Name one type of weathering and describe how it affects rocks.	Pictures and charts
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	