SECOND TERM
WEEKLY LESSON NOTES
WEEK 1

Week Ending: 06-04-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Diversity Of Matter	
Class: B8	**Class Size:**	**Sub Strand:** Atomic Structure	
Content Standard: B8.1.1.2 Demonstrate understanding of atoms and the atomic structure of elements in the periodic table	**Indicator:** B8.1.1.2.1 Describe atoms as composed of sub-atomic particles		**Lesson:** 1 of 2
Performance Indicator: Learners can describe atoms as composed of sub-atomic particles		**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**	Guide learners to explain an atom and its structure of an element using/linking it to the periodic table. Have learners list the sub-atomic particles found in the atom and indicate their location in the atom (e.g. proton, electron, neutron). Brainstorm learners to state the electrical charges on the sub-atomic particles. Learners in groups describe the differences between the atomic number and the mass number of elements. Engage learners to determine the number of protons, neutrons and electrons in an atom. Example: The atomic number of an element is 19 and its mass number is 39. Calculate the following α). proton number β). electron number γ). neutron number solution α). proton number The proton number is another name for atomic number Hence; proton number = atomic number proton number = 19 β). electron number Electrically, the atom is neutral because the electron number=the proton number electron number = 19 γ). neutron number [N]	Pictures and charts

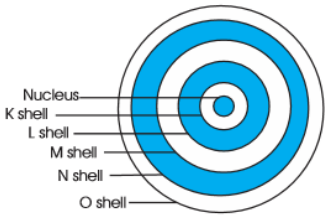
	Given mass number [A] = 39, atomic number [Z] = 19 Mathematically, A = Z + N also; Z + N = A N = A – Z N = 39 – 19 N = 20. neutron number = 20 <u>Assessment</u> 1. State two differences between a proton and an electron 2. An atom has three protons and three neutrons. i. How many electrons are there in this atom? ii. Draw a labeled diagram to show the arrangement of all particles in the atom	
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: 06-04-2023	**DAY:**	**Subject:** Science
Duration: 100mins		**Strand:** Diversity Of Matter
Class: B8	**Class Size:**	**Sub Strand:** Atomic Structure

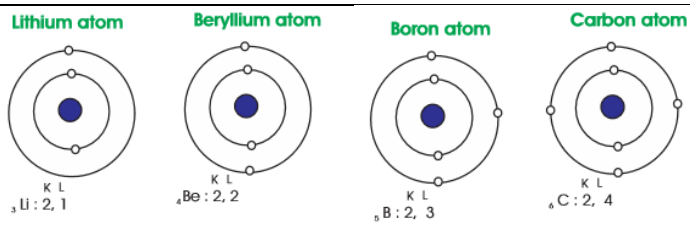
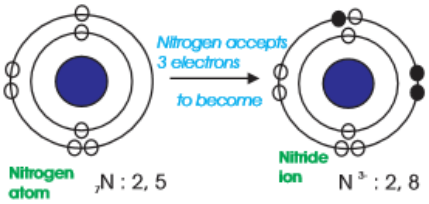
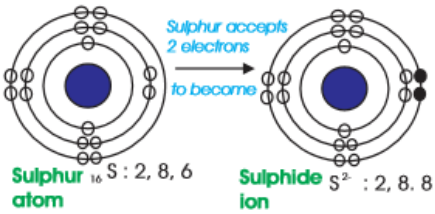
Content Standard: B8.1.1.2 Demonstrate understanding of atoms and the atomic structure of elements in the periodic table	**Indicator:** B8.1.1.2.2 Explain the arrangement of elements in terms of the number of protons in the nuclei of atoms of each element	**Lesson:** 1 of 2

Performance Indicator: Learners can explain the arrangement of elements in terms of the number of protons in the nuclei of atoms of each element	**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:

References: Science Curriculum Pg. 55

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**	Brainstorm learners for the meaning of electronic configuration. *Electronic configuration refers to the arrangement of electrons on the shells of an atom.* *Electrons in the atom are arranged on the shells in increasing energy levels from the nucleus.* Explain how elements are arranged in order of the number of protons using the periodic table.  • *In filling the shells of an atom with electrons, shells that have lower energy levels are filled first before moving to the shells with higher energy levels.* • *Also the atoms of some elements must either loss or gain an electron or some electrons in order to form their respective compounds.* Guide learners to draw the distribution of electrons (electron configuration) in the atoms.	Pictures and charts

Energy level [n]	*Name of shell*
N = 1, first energy level	K shell
N = 2, second energy level	L shell
N = 3, third energy level	M shell
N = 4, fourth energy level	N shell
N = 5, fifth energy level	O shell

	 Brainstorm learners to define ion. An ion is a charged atom. Ions are formed when the atom of an element either gains or loses an electron or some electrons. Learners discuss the types of ions. a. cations - positively charged ions b. anions - negatively charged ions Brainstorm learners to explain the formation of ions.   Guide learners to describe a molecule as a combination of atoms. <u>Assessment</u> 1. What is an ion? ii. Give two examples of ions 2. Describe how ions are formed from atoms. 3. Explain how; i. lithium atom becomes positively charged ii. oxygen atom becomes negatively charged Draw a potassium atom and show the distribution of electrons in its shells	
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.	

SECOND TERM
WEEKLY LESSON NOTES
WEEK 2

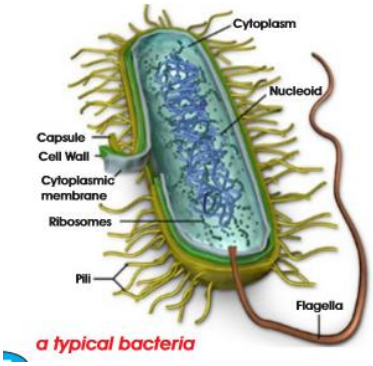
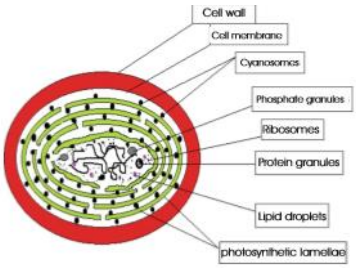
Week Ending: 14-04-2023	**DAY:**	**Subject:** Science
Duration: 100mins		**Strand:** Diversity Of Matter
Class: B8	**Class Size:**	**Sub Strand:** Structure Of Prokaryotic & Eukaryotic Cells

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:** 1 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: 14-04-2023	**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

<table>
<tr><th>Phase/Duration</th><th>Learners Activities</th><th>Resources</th></tr>
<tr><td>PHASE 1: STARTER</td><td>Revise with learners on the previous lesson.

Share learning indicators and introduce the lesson.</td><td></td></tr>
<tr><td>PHASE 2: NEW LEARNING</td><td>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.
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</table>
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.</td><td>Pictures and charts</td></tr>
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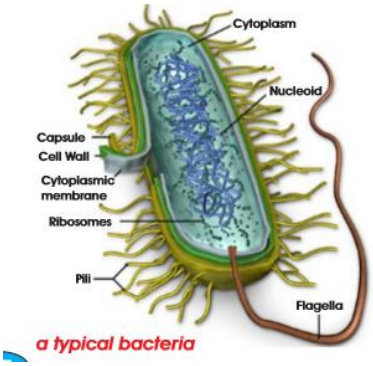
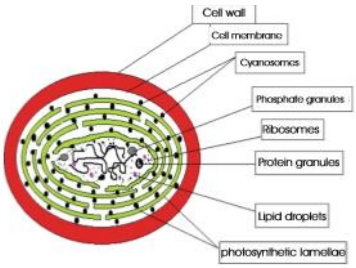
	Put learners into groups, let them draw and label a prokaryotic cell and a eukaryotic cell and make a presentation on what is observed.  a typical bacteria  a typical cyanobacteria Guide learners to discuss the importance of prokaryotic and eukaryotic cells. • Most enzymes in the digestive system that 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.	

SECOND TERM
WEEKLY LESSON NOTES
WEEK 3

Week Ending: 21-04-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Cycles	
Class: B8	**Class Size:**	**Sub Strand:** Seed Beds	
Content Standard: B8.2.3.1 Demonstrate knowledge and skills in planting crops on different seed beds	**Indicator:** B8.2.3.1.1 Explore the different seed beds for planting crops in your community.		**Lesson:** 1 of 2
Performance Indicator: Learners can explore the different seed beds for planting crops in your community		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 60			

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**	Begin the lesson by asking learners to share their personal experience in farming. Brainstorm learners to explain the meaning of seed beds. A seed bed is a local soil environment within which seeds are nursed/planted. Take learners out to the school garden. Display tools and guide learners in the process of preparing seed beds. • *The removal of stumps, stones and debris that can physically prevent the seedling germination and growth.* • *The leveling up of the area which has been demarcated.* • *Making the soil loose by digging and breaking lumps.* • *Improving soil structure by adding organic matter.* • *Adjusting the nitrate and the phosphate levels of the soil using the right fertilizer.* Engage learners to discuss the importance or reasons for preparing seed beds. *1. A seedling bed is used to increase the chances of the number of planted seeds that can germinate per unit area of land* *2. It reduces or eliminates competition for the seedlings because weeds and other unwanted plants can easily be controlled or removed from the seed bed.* Engage learners to observe and discuss different seed beds for planting different crops. *Flat beds - are used where water availability is adequate with no drainage problems. Crops like; maize, sorghum, beans and potatoes can be started/cultivated on flat beds.*	Pictures and charts

	Hilling-up - is good and works well for plants that have enough stem height and broader leaves that can survive partial soil burning. *Root tubers like; potatoes, yam are hilled up to keep their roots in the soil.* Learners list and compare the differences and similarities among seed beds in the community. Have learners to match the types of seed beds with the types and stages of crops planted in your community. <u>Assessment</u> State and explain the types of seed beds Explain how you could prepare a seed bed to cultivate maize.	
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: 21-04-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Cycles	
Class: B8	**Class Size:**	**Sub Strand:** Seed Beds	
Content Standard: B8.2.3.1 Demonstrate knowledge and skills in planting crops on different seed beds	**Indicator:** B8.2.3.1.2 Plant different types of crops on different seed beds.		**Lesson:** 2 of 2
Performance Indicator: Learners can plant different types of crops on different seed beds		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 60			

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**	Put learners into convenient groups. Task each group to nurse a given seed. Let them water the seeds and observe what happens after 6 - 9 days. Have them observe and discuss the practice of planting different crops in different seed beds. Select different plant parts, (seeds, seedlings, cuttings, leaves, roots) and plant them in different seed beds. <u>Assessment</u> What is a seed bed? Describe briefly the major types of seed beds in crop cultivation. Give two benefits of seed beds in the nursery	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.	

SECOND TERM
WEEKLY LESSON NOTES
WEEK 4

Week Ending: 28-04-2023	**DAY:**		**Subject:** Science
Duration: 100mins			**Strand:** Cycles
Class: B8	**Class Size:**		**Sub Strand:** Seed Beds
Content Standard: B8.2.3.2 Demonstrate understanding of the differences in height, size, and flowering of crops grown in different seed beds	**Indicator:** B8.2.3.2.1 Compare and contrast the differences in height, size, and flowering of crops grown in different seed beds		**Lesson:** 1 of 2
Performance Indicator: Learners can explore the different seed beds for planting crops in your community		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 61			

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**	Measure the heights, sizes, number of flowers, and number of fruits of plants grown in different seed beds Discuss the differences and similarities in the heights, sizes, number of flowers and fruits of plants grown in different seed beds using tables and graphs. Write and give presentations on the reasons for differences in the heights, sizes, number of flowers and fruits of plants grown in different seed beds	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.	

Week Ending: 28-04-2023	**DAY:**	**Subject:** Science
Duration: 100mins		**Strand:** Cycles
Class: B8	**Class Size:**	**Sub Strand:** Seed Beds

Content Standard: B8.2.3.2 Demonstrate understanding of the differences in height, size, and flowering of crops grown in different seed beds	**Indicator:** B8.2.3.2.1 Compare and contrast the differences in height, size, and flowering of crops grown in different seed beds	**Lesson:** 2 of 2
Performance Indicator: Learners can explore the different seed beds for planting crops in your community	**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 61		

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**	Measure the heights, sizes, number of flowers, and number of fruits of plants grown in different seed beds Discuss the differences and similarities in the heights, sizes, number of flowers and fruits of plants grown in different seed beds using tables and graphs. Write and give presentations on the reasons for differences in the heights, sizes, number of flowers and fruits of plants grown in different seed beds	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.	

SECOND TERM
WEEKLY LESSON NOTES
WEEK 5

Week Ending: 05-05-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** SYSTEMS	
Class: B8	**Class Size:**	**Sub Strand:** The Solar System	
Content Standard: B8.3.2.1 Demonstrate knowledge of the outer planets of the solar system	**Indicator:** B8.3.2.1.1 Identify the outer planets of the solar system and describe their properties		**Lesson:** 1 of 2
Performance Indicator: Learners can identify the outer planets of the solar system and describe their properties		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 66			

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**	Guide learners to describe the composition of the solar system using charts, pictures and digital content. Have learners identify and draw the planets that form the outer solar system. Discuss the properties that are peculiar to each of the planet: Jupiter, Saturn, Uranus, and Neptune. Search and explain why there is no life on Jupiter, Saturn, Uranus, and Neptune. Construct a model of the outer solar system (Jupiter, Saturn, Uranus, and Neptune) and display it for discussion	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.	

Week Ending: 05-05-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** SYSTEMS	
Class: B8	**Class Size:**	**Sub Strand:** The Solar System	
Content Standard: B8.3.2.1 Demonstrate knowledge of the outer planets of the solar system	**Indicator:** B8.3.2.1.1 Identify the outer planets of the solar system and describe their properties		**Lesson:** 1 of 2
Performance Indicator: Learners can identify the outer planets of the solar system and describe their properties		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 66			

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 to search and explain why there is no life on Jupiter, Saturn, Uranus, and Neptune. Construct a model of the outer solar system (Jupiter, Saturn, Uranus, and Neptune) and display it for discussion	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.	

SECOND TERM
WEEKLY LESSON NOTES
WEEK 6

Week Ending: 12-05-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Forces & Energy	
Class: B8	**Class Size:**	**Sub Strand:** Electricity & Electronics	
Content Standard: B8.4.2.1 Demonstrate knowledge of electricity transmission	**Indicator:** B8.4.2.1.1 Explain how electricity transmission occurs.		**Lesson:** 1 of 2
Performance Indicator: Learners can explain how electricity transmission occurs.		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 72			

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**	Ask learners to tell some of the use and importance of electricity in their homes. Brainstorm learners for the meaning of electricity transmission. *Electricity transmission is the process of delivering generated electrical energy over long distances to distribution grids that are closer to consumers*. Show pictures depicting electricity generation in the country. Learners talk about how electricity is generated in Ghana. Guide learners to identify different stages of electricity transmission. *1. Power Generation: Electricity is generated in power plants using various energy sources such as coal, natural gas, nuclear, hydropower, wind, solar, etc.* *2. Step-Up Transformers: The voltage of electricity generated in power plants is typically low, so it is stepped up to high voltage levels (often several hundred kilovolts) using transformers to reduce energy losses during transmission.* *3. High-Voltage Transmission: The high-voltage electricity is then transmitted over long distances (often hundreds of miles) on high-voltage power lines supported by tall towers or poles. The transmission lines are typically made of aluminum or copper conductors.* *4. Substations: Along the transmission route, the high-voltage electricity is routed through substations where it is stepped down to lower voltage levels for distribution to local networks.*	Pictures and charts

	5. Step-Down Transformers: The electricity is then stepped down to even lower voltage levels (typically tens of kilovolts) using transformers for distribution to end-users. *6. Distribution Networks: The lower voltage electricity is then distributed through local networks of power lines, poles, and transformers to homes, businesses, and other end-users.* *7. End-Use: Finally, the electricity is consumed by end-users for various purposes such as lighting, heating, cooling, and powering electronic devices.* Learners research and draw a flow chart to show the stages of electricity transmission from the point of generation to the point of consumption. <u>Assessment</u> 1. What is the purpose of the step-up transformers in the electricity transmission process? 2. Why is electricity transmitted at high voltage levels? 3. What are substations, and what is their role in the electricity transmission process? 4. How is electricity distributed to homes and businesses after it is transmitted over long distances?	
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: 12-05-2023	**DAY:**	**Subject:** Science
Duration: 100mins		**Strand:** Forces & Energy
Class: B8	**Class Size:**	**Sub Strand:** Electricity & Electronics

Content Standard: B8.4.2.2 Demonstrate understanding of the functions of capacitors in relation to LEDs, Diodes and resistors in electronic circuits	**Indicator:** B8.4.2.2.1 Demonstrate the charging and discharging action of a capacitor in a DC electronic circuit	**Lesson:** 2 of 2
Performance Indicator: Learners can demonstrate the charging and discharging action of a capacitor in a DC electronic circuit	**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 72		

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**	Learners in their groups research information about capacitors in electronic circuits and explain their functions when connected with direct current (DC). *A capacitor is an electronic component that stores electrical energy in an electric field between two conductive plates separated by a dielectric material. It is also known as a "capacitance" or "condenser."* When a voltage is applied to the capacitor, electrical charge accumulates on the plates, causing a potential difference between them. The amount of charge that can be stored in the capacitor depends on its capacitance, which is measured in farads (F). <u>Uses of Capacitors in electronic circuits</u>: *1. Energy storage: Capacitors can store electrical energy and release it quickly when needed, making them useful for applications such as flash photography or in electrical circuits that require a burst of energy.* *2. Filtering: Capacitors can be used to filter out unwanted noise or interference in electronic circuits by acting as a high-pass or low-pass filter.* *3. Coupling: Capacitors can be used to connect two circuits together while blocking direct current (DC) between them. This is known as "coupling" and is commonly used in audio amplifiers.* *4. Timing: Capacitors can be used in conjunction with resistors to create timing circuits, such as those used in oscillators or pulse generators.* *5. Tuning: Capacitors can be used in tuning circuits, such as in radio receivers or in frequency filters. By changing the capacitance, the resonant frequency of the circuit can be adjusted.*	Pictures and charts

	Guide learners to describe the charging and discharging actions of a capacitor and explain the role of LEDs, diodes and resistors in an electronic circuit. *The charging and discharging actions of a capacitor involve the buildup and release of electrical charge across the capacitor's plates. When a voltage source is connected across a capacitor, the capacitor charges up to the voltage of the source. As the capacitor charges, the voltage across it increases and the current flowing into the capacitor decreases. Once the capacitor is fully charged, the current stops flowing, and the voltage across the capacitor is equal to the voltage of the voltage source.* In an electronic circuit, LEDs (light-emitting diodes), diodes, and resistors can play various roles depending on the circuit design. • *LEDs are semiconductors that emit light when a current flows through them. In a circuit, an LED can be connected in series with a resistor to limit the current flowing through it and protect it from burning out. LEDs are commonly used as indicators or in lighting applications.* • *Diodes are electronic components that allow current to flow in only one direction. They can be used to rectify AC (alternating current) signals into DC (direct current) or to protect circuits from voltage spikes.* • *Resistors are components that resist the flow of electrical current and are used to control the amount of current flowing in a circuit. They can be used to limit current flow to LEDs or other components, to bias transistors, or to create voltage dividers.* <u>Assessment</u> 1. What is a capacitor, and what is its role in an electronic circuit? 2. How does a capacitor charge and discharge, and what happens to the voltage and current across a capacitor during these processes? 3. What is the function of a resistor in an electronic circuit, and how does it control the flow of electrical current? 4. Describe the role of LEDs and diodes in electronic circuits and give examples of their applications.	
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.	

SECOND TERM
WEEKLY LESSON NOTES
WEEK 7

Week Ending: 19-05-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Forces & Energy	
Class: B8	**Class Size:**	**Sub Strand:** Conservation Of Energy	
Content Standard: B8.4.3.1 Evaluate the impact of conversion of energy and energy conservation on the environment	**Indicator:** B8.4.3.1.1. Explain the importance of conversion of energy and energy conservation in daily life	**Lesson:** 1 of 2	
Performance Indicator: Learners can explain the importance of conversion of energy and energy conservation in daily life.		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 73			

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**	Guide learners to explain the following terms; • **Energy conservation** also refers to the judicious and wise use of our sources of energy and replacing them whenever possible. • **Law of conservation of energy** states that energy can neither be created nor destroyed but only converted from one form of energy to another. *This means that a system always has the same amount of energy, unless it's added from the outside.* Guide learners to explain the law of conservation of energy by using diagram to show that in a closed system the value of chemical energy, for example in dry cell which changes into electrical, heat and light energy will remain the same. Guide learners to explain energy conversion and its application to life. Example: • Turning off the light when leaving the room • Unplugging appliances when not in use. • Walking instead of driving. <u>Assessment</u> What is conservation? State the law of energy conservation. State three examples of energy conservation	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. <u>Homework</u> Using diagrams, explain the law of conservation of energy	

Week Ending: 19-05-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Forces & Energy	
Class: B8	**Class Size:**	**Sub Strand:** Conservation Of Energy	
Content Standard: B8.4.3.1 Evaluate the impact of conversion of energy and energy conservation on the environment	**Indicator:** B8.4.3.1.1. Explain the importance of conversion of energy and energy conservation in daily life	**Lesson:** 1 of 2	
Performance Indicator: Learners can explain the importance of conversion of energy and energy conservation in daily life.	**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:		
References: Science Curriculum Pg. 73			

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**	Classify the importance of energy conversion and energy conservation in daily life. *1. Energy Conversion:* *Energy conversion involves transforming one form of energy into another for practical use. It plays a vital role in numerous aspects of daily life, such as:* *a. Power Generation: Energy conversion enables the generation of electricity from various sources like fossil fuels, nuclear power, renewable energy (solar, wind, hydroelectric, etc.), and more. This electricity powers homes, businesses, industries, and infrastructure, ensuring our modern way of life.* *b. Transportation: Converting energy into mechanical work is essential for transportation systems. Whether it's gasoline, diesel, electricity, or alternative fuels, energy conversion drives vehicles, ships, airplanes, and trains, facilitating travel and trade.* *c. Heating and Cooling: Energy conversion is crucial for maintaining comfortable living conditions. It allows the conversion of energy sources into heat or cooling energy, which powers heating systems, air conditioners, and refrigeration units in homes, offices, and other spaces.* *d. Industrial Processes: Energy conversion is essential for manufacturing processes, chemical reactions, and various industrial applications. It powers machinery, equipment, and processes that produce goods and services, contributing to economic development.* *2. Energy Conservation:*	Pictures and charts

	Energy conservation involves minimizing energy waste and optimizing energy use to reduce overall consumption. Its importance is evident in the following ways: *a. Environmental Sustainability: Conserving energy helps mitigate the negative impacts of energy production and consumption on the environment. By reducing energy demand, we can decrease greenhouse gas emissions, combat climate change, and preserve natural resources.* *b. Cost Savings: Energy conservation can lead to significant cost savings for individuals, businesses, and governments. By using energy-efficient appliances, adopting energy-saving practices, and improving insulation and building design, we can lower energy bills and operational expenses.* *c. Energy Security: Conserving energy reduces dependence on fossil fuels and foreign energy sources. By optimizing energy use, diversifying energy supplies, and promoting renewable energy, countries can enhance energy security and reduce geopolitical risks.* *d. Sustainable Development: Energy conservation aligns with the goal of sustainable development by promoting a more efficient and responsible use of resources. It helps meet the energy needs of the present without compromising the ability of future generations to meet their own needs.* Search from multimedia sources, books, internet for information on the impact of energy conversion and conservation in their environment, and make a poster presentation on their findings. *1. <u>Impact of Energy Conversion</u>:* *a. Fossil Fuels and Greenhouse Gas Emissions: Energy conversion from fossil fuels, such as coal, oil, and natural gas, is a significant contributor to greenhouse gas emissions.* *b. Air Pollution: Energy conversion processes like combustion release pollutants into the air, including particulate matter, nitrogen oxides, sulfur dioxide, and volatile organic compounds. These pollutants contribute to air pollution, smog formation, and health issues such as respiratory diseases and cardiovascular problems.* *c. Water and Land Pollution: Certain energy conversion methods, such as coal mining and oil extraction, can result in water and land pollution. Accidental spills, leaks, and improper waste disposal during energy extraction and transportation can harm ecosystems, contaminating water sources and damaging biodiversity.* *d. Habitat Destruction: Large-scale energy conversion projects, such as dam construction for hydroelectric power or land clearing for fossil fuel extraction, can lead to habitat destruction and fragmentation.* *2. <u>Impact of Energy Conservation</u>:*	

	a. Reduced Greenhouse Gas Emissions: Energy conservation helps mitigate climate change by reducing the overall demand for energy, which in turn reduces the need for energy production from fossil fuels. *b. Preservation of Natural Resources: Energy conservation reduces the reliance on non-renewable energy sources, such as fossil fuels, which deplete finite resources.* *c. Improved Air Quality: Energy conservation reduces the need for energy generation, which often involves burning fossil fuels and releasing pollutants into the air.* *d. Preservation of Ecosystems: Energy conservation indirectly contributes to the preservation of ecosystems. By reducing energy demand, there is less pressure to develop new energy infrastructure that may lead to habitat destruction and ecological disruptions.*	
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.	

SECOND TERM
WEEKLY LESSON NOTES
WEEK 8

Week Ending: 26-05-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Humans & The Environment	
Class: B8	**Class Size:**	**Sub Strand:** Waste Management Practices	
Content Standard: B8.5.1.1 Demonstrate knowledge of waste management systems and apply it in an environment	**Indicator:** B8.5.1.1.1 Explain sustainable waste management practices		**Lesson:** 1 of 2
Performance Indicator: Learners can explain the importance of conversion of energy and energy conservation in daily life.		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 77			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Ask learners to tell the class how they dispose of waste in their homes and school. Drill learners on the correct pronunciation and meanings of the new words. Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Task learners in groups to discuss and come out with ideas to minimize waste in their classroom, school environment, homes and their communities. Have each group discuss measures of minimizing waste in the classroom, school environment, home, market, at the bus station, hospitals, church, mosque, beach, etc. Take learners responses and write them on the board. • What is waste? • What are the types of waste we produce in our homes, community or school? • House hold food waste can also be used as? Brainstorm learners for the meaning of waste. *Waste can also be described as an unwanted material which is no longer needed. It is usually discarded after its primary use.* Guide learners to identify and describe the sources of waste. *Waste can be generated from various sources. These include wastes from households, schools, offices, marketplaces, restaurants and other public places.* Learners in groups identify the types of waste produced at homes, schools, offices, marketplaces, restaurants and other public places, Example: 1. Solid wastes: These are wastes in solid forms. Solid waste includes sludge from a wastewater treatment plant and water supply treatment plant. Other examples include plastics, Styrofoam containers, bottles, cans, papers, scrap iron, and other trash	Pictures and charts

	2. Liquid Wastes: These are wastes in a form of liquid form. Examples include domestic washings, chemicals, oils, waste water from ponds, manufacturing industries and other sources Have learners in groups, classify waste as Biodegradable waste, Non-biodegradable wastes, Hazardous wastes and Non-hazardous wastes. Learners do a presentation on their findings to the class for discussion. *1. Biodegradable waste: The waste materials that can be broken down or decomposed into simple forms in nature by the action of microorganisms such as bacteria.* *2. Non-biodegradable wastes: These are the waste materials that cannot be decomposed or broken down by natural organisms or agents*. <u>Assessment</u> What is a waste? Identify the types of waste and give one example in each case.	
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: 26-05-2023	**DAY:**	**Subject:** Science
Duration: 100mins		**Strand:** Humans & The Environment
Class: B8	**Class Size:**	**Sub Strand:** Waste Management Practices

Content Standard: B8.5.1.1 Demonstrate knowledge of waste management systems and apply it in an environment	**Indicator:** B8.5.1.1.2. Apply knowledge of waste management practices to manage waste in a community	**Lesson:** 1 of 2

Performance Indicator: Learners can apply knowledge of waste management practices to manage waste in a community	**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:

References: Science Curriculum Pg. 77

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 to explain key terms; Waste management and sustainable management. Outline approaches to waste management in promoting sustainable management. *1. Waste Reduction and Prevention:* • *Promoting awareness and education on waste reduction practices.* • *Encouraging responsible consumption and production patterns.* • *Implementing policies and regulations to reduce packaging waste and single-use items.* • *Encouraging product design that emphasizes durability, reusability, and recyclability.* *2. Recycling and Resource Recovery:* • *Establishing comprehensive recycling programs for various types of materials, such as paper, plastics, metals, and glass.* • *Developing infrastructure and facilities for sorting, processing, and recycling waste.* • *Promoting the use of recycled materials in manufacturing processes.* • *Encouraging the public to participate in recycling programs through incentives and convenient collection systems.* *3. Composting and Organic Waste Management:* • *Implementing programs for the separation and composting of organic waste.* • *Encouraging backyard or community composting initiatives.* • *Promoting the use of compost in agriculture and landscaping as a sustainable alternative to chemical fertilizers.*	Pictures and charts

	4. Waste-to-Energy and Incineration: • *Utilizing advanced waste-to-energy technologies to convert non-recyclable waste into energy.* • *Ensuring that waste incineration facilities meet strict environmental standards to minimize air pollution and harmful emissions.* • *Promoting energy recovery from waste as an alternative to fossil fuels.* *5. Extended Producer Responsibility (EPR):* • *Implementing EPR policies that hold producers accountable for the environmental impact of their products throughout their life cycle, including proper waste management and recycling.* • *Encouraging producers to design products that are easier to recycle and dispose of responsibly.* *6. Circular Economy and Sustainable Materials Management:* • *Promoting the concept of a circular economy, where waste is minimized, and resources are kept in use for as long as possible through recycling, reusing, and remanufacturing.* • *Adopting sustainable materials management approaches that focus on the entire lifecycle of products, including material sourcing, manufacturing, use, and end-of-life management.* *7. Integrated Waste Management:* • *Developing comprehensive waste management plans that incorporate multiple strategies and technologies based on local contexts and available resources.* • *Encouraging collaboration among various stakeholders, including governments, businesses, communities, and waste management organizations, to achieve effective waste management practices.* Engage learners to conduct a survey in a community's waste management practices and present a report. Engage learners to carry out an activity to manage waste using knowledge acquired in indicator B8.5.1.1.1 in their communities Let learners evaluate the waste management practices carried out in a community and present a report. <u>Assessment</u> 1. How can waste management practices contribute to the achievement of broader sustainability goals, such as reducing greenhouse gas emissions and promoting a circular economy? 2. What are some of the key challenges and barriers that hinder the effective implementation of sustainable waste management strategies, and how can they be overcome?	
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.	

SECOND TERM
WEEKLY LESSON NOTES
WEEK 9

Week Ending: 02-06-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Humans & The Environment	
Class: B8	**Class Size:**	**Sub Strand:** Communicable Diseases	
Content Standard: B8.5.2.1 Demonstrate knowledge of common communicable diseases, such as Hepatitis, of humans, causes, symptoms, effects and their prevention	**Indicator:** B8. 5.2.1.1 Explain the symptoms, effects and prevention of common communicable diseases.	**Lesson:** 1 of 2	
Performance Indicator: Learners can explain the symptoms, effects and prevention of common communicable diseases.		**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**	Brainstorm learners to explain what are communicable diseases. *Communicable diseases, also known as infectious diseases, are illnesses caused by microorganisms such as bacteria, viruses, fungi, or parasites that can be transmitted from one person to another, either directly or indirectly*. Let learners mention some examples of Communicable diseases. *Example: Influenza (Flu), Tuberculosis (TB), HIV/AIDS, Malaria, Hepatitis, Measles, Cholera*. Engage in groups to compile data on the number of males and females who suffer from common communicable diseases such as hepatitis, from a medical center and determine the possible causes of these diseases. Learners in their groups Identify causes, symptoms, effects and prevention of hepatitis, HIV, measles and others and make a presentation. Guide learners to search and design a chart to display the causes, symptoms and prevention of hepatitis and develop a plan to minimize the disease. <u>Assessment</u> • What are some ways in which communicable diseases can be transmitted from one person to another? • How does handwashing help prevent the spread of communicable diseases? • Name one bacterial communicable disease and one viral communicable disease.	Pictures and charts

	• How can vaccination help prevent the occurrence of certain communicable diseases?	
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: 02-06-2023	**DAY:**	**Subject:** Science
Duration: 100mins		**Strand:** Humans & The Environment
Class: B8	**Class Size:**	**Sub Strand:** Communicable Diseases

Content Standard: B8.5.2.1 Demonstrate knowledge of common communicable diseases, such as Hepatitis, of humans, causes, symptoms, effects and their prevention	**Indicator:** B8. 5.2.1.2. Analyze the risk factors of communicable diseases	**Lesson:** 2 of 2
Performance Indicator: Learners can analyze the risk factors of communicable diseases.	**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**	Search for information that is associated with communicable diseases. *1. Influenza (Flu): A viral infection that affects the respiratory system and spreads through respiratory droplets when an infected person coughs or sneezes.* *2. Tuberculosis (TB): A bacterial infection that primarily affects the lungs but can also affect other parts of the body. It spreads through the air when an infected person coughs or sneezes.* *3. HIV/AIDS: A viral infection that attacks the immune system. It is transmitted through unprotected sexual contact, sharing contaminated needles, or from mother to child during childbirth or breastfeeding.* *4. Malaria: A parasitic disease transmitted through the bite of infected mosquitoes. It is prevalent in certain regions where the mosquitoes carrying the parasite are present.* *5. Hepatitis: A group of viral infections that affect the liver. It can be transmitted through contaminated food or water, sexual contact, or contact with infected blood or bodily fluids.* *6. Measles: A highly contagious viral infection that spreads through respiratory droplets. It causes a characteristic rash and can lead to serious complications.* *7. Cholera: A bacterial infection that affects the intestines. It is typically spread through contaminated food or water and can cause severe diarrhea and dehydration.*	Pictures and charts

	Create awareness about risk factors of communicable diseases such as hepatitis, HIV, measles and others in order to prevent the diseases in their schools and communities. 1. Lack of Immunization 2. Poor Hygiene Practices: 3. Close Contact with Infected Individuals 4. Unsafe Sexual Practices: 5. Travel and Migration: 6. Compromised Immune System: 7. Poor Access to Healthcare: 8. Environmental Factors 9. Age and Vulnerable Populations: <u>Assessment</u> • Explain why lack of immunization is considered a risk factor for communicable diseases. • Describe how proper handwashing and hygiene practices help reduce the risk of communicable diseases. • Identify two communicable diseases that can be transmitted through unprotected sexual activity. • Discuss why access to healthcare facilities and services is important in preventing and controlling communicable diseases.	
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.	

SECOND TERM
WEEKLY LESSON NOTES
WEEK 10

Week Ending: 09-06-2023	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Humans & The Environment	
Class: B8	**Class Size:**	**Sub Strand:** Bacterial Diseases	
Content Standard: B8.5.2.1 Demonstrate knowledge of common communicable diseases, such as Hepatitis, of humans, causes, symptoms, effects and their prevention	**Indicator:** B8. 5.2.2.1 Explain the nature of bacterial diseases with special emphasis on food poisoning/gonorrhoea/ meningitis their causes, symptoms, effects on humans and prevention	**Lesson:** 1 of 2	
Performance Indicator: Learners can explain the nature of bacterial diseases with special emphasis on food poisoning/gonorrhoea/ meningitis their causes, symptoms, effects on humans and prevention	**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 the nature of bacterial diseases. *Bacterial diseases are caused by the invasion and multiplication of pathogenic bacteria in the human body. Bacteria are microscopic organisms that can enter the body through various means, such as ingestion, inhalation, or direct contact with infected individuals*. Search for information and make presentations on food poisoning, gonorrhea, and meningitis diseases their mode of transmission from person to person, community to community and from country to country. Describe the symptoms, effects and prevention of food poisoning,, gonorrhea, and meningitis diseases. Describe the role of individuals, community members and government in managing food poisoning, gonorrhea, and meningitis diseases. Design and produce a poster to educate their community members on the incidence and control of named bacterial diseases: food poisoning, gonorrhea, and meningitis. <u>Assessment</u> • What is the nature of bacterial diseases? • Name three bacterial diseases discussed in this worksheet. • What are the causes of food poisoning? • List three common symptoms of food poisoning.	Pictures and charts

	• What are the potential effects of food poisoning on the human body? • Name the bacterium that causes gonorrhea. • How is gonorrhea primarily transmitted?	
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> • Provide two symptoms of gonorrhea in men and women. • What are the potential complications of untreated gonorrhea? • List three preventive measures for gonorrhea. • Which part of the body is affected by meningitis? • Name two bacteria that can cause bacterial meningitis. • Name three symptoms of meningitis. • What are the potential effects of meningitis on an individual? • How can meningitis be prevented?	

Week Ending: 09-06-2023	**DAY:**	**Subject:** Science
Duration: 100mins		**Strand:** Humans & The Environment
Class: B8	**Class Size:**	**Sub Strand:** Science & Technology

Content Standard: B8.5.3. 1 Demonstrate an understanding of connections among science, technology, innovation, society and the environment.	**Indicator:** B8. 5.3.1.1 Examine the relationship among science, technology, innovation and society	**Lesson:** 2 of 2

Performance Indicator: Learners can examine the relationship among science, technology, innovation and society.	**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:

References: Science Curriculum Pg. 81

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**	Guide learners to explain key terms. That is science, technology and innovation. • *Science, as a systematic study of the natural world, seeks to understand how things work and why they behave the way they do.* • *Technology, on the other hand, is the practical application of scientific knowledge for practical purposes.* • *Innovation, as the outcome of applying scientific knowledge and technological tools, refers to the process of translating new ideas or inventions into practical solutions that address societal needs or create economic value.* Guide learners to explain the interrelationship of science and technology and innovation. *1. Scientific discoveries drive technological advancements: Scientific breakthroughs often pave the way for new technologies. For example, the discovery of the structure of DNA led to advancements in genetic engineering and biotechnology.* *2. Technology enables scientific research: Technological tools and instruments enable scientists to observe, measure, and analyze phenomena in ways that were previously not possible. Tools like microscopes, telescopes, and DNA sequencers have revolutionized scientific research.* *3. Innovation applies scientific and technological knowledge: Innovators utilize scientific and technological knowledge to create new products, services, or processes that solve problems or meet societal needs. Innovations can range from new medical treatments to renewable energy technologies.*	Pictures and charts

	4. Innovation drives scientific progress: Innovations often uncover new scientific phenomena or challenge existing theories, leading to further scientific exploration and discovery. For example, the invention of the electron microscope opened new avenues in nanotechnology and materials science. Learners in groups discuss technological advancements in the world and its impact on the Ghanaian environment. <u>Assessment</u> • Define science: • Define technology: • Define innovation: • Explain the relationship between science and technology: • How does science contribute to technological advancements? • How does technology support scientific research? • Describe the role of innovation in the interrelationship between science and technology:	
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> • Give an example of how scientific discoveries have led to technological advancements: • Provide an example of how technology has enabled scientific research: • Explain how innovation applies scientific and technological knowledge: • Describe how innovation can drive scientific progress: • What are some societal and economic benefits of the interrelationship between science, technology, and innovation?	