TERM THREE
WEEKLY LESSON NOTES
WEEK 1

Date: 16th SEPT, 2022	**DAY:**	**Subject:** Science
Duration: 50MINS		**Strand:** Revision
Class: B7	**Class Size:**	**Sub Strand:** Revision

Content Standard: Provide appropriate answers to last term science exams questions.	**Indicator:** Provide appropriate answers to last term science exams questions	**Lesson:** 1 of 1

Performance Indicator: Learners can find answers to last term exams questions.	**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:
References: Science Curriculum, Exams Papers	

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Using questions and answers, review learners understanding in the previous lesson. Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Ask learners to bring out their last term science exams paper and note book. Have learners to come out the difficult questions they couldn't answer during the exam. Go through the instructions on answering the objective questions. Learners in turns read the objective questions for discussion and answering. Guide learners to explain questions and concept that they find difficult. <u>Assessment</u> Learners answer the essay type questions 1 and 2 in their workbooks.	Exams papers
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> Learners answer the essay type questions 3 and 4 in their workbooks.	

Date: 16th SEPT, 2022	**DAY:**	**Subject:** Science
Duration: 50MINS		**Strand:** Forces & Energy
Class: B7	**Class Size:**	**Sub Strand:** Conversion & Conservation Of Energy

Content Standard: B7.4.3.1. Demonstrate an understanding of the principle of conservation and conversion of energy and their application in real life situations.	**Indicator:** B7.4.3.1.1 Explain the principle underlying conservation and conversion of energy.	**Lesson:** 1 of 1
Performance Indicator: Learners can explain the principle underlying conservation and conversion of energy.	**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 33-34		

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Using questions and answers, review learners understanding in 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	Charts and diagrams
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	

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WEEKLY LESSON NOTES

WEEK 2

Date: 23rd SEPT, 2022	**DAY:**	**Subject:** Science	
Duration: 50mins		**Strand:** Forces & Energy	
Class: B7	**Class Size:**	**Sub Strand:**	
Content Standard: B7.4.3.1. Demonstrate an understanding of the principle of conservation and conversion of energy and their application in real life situations		**Indicator:** B7.4.3.1.2 Demonstrate the conversion of energy into useable forms.	**Lesson:** 1 of 2
Performance Indicator: Learners can demonstrate the conversion of energy into useable forms.		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 33-34			
New words: Conversion, transformation, useable , conservation			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Have learners give examples of forms of energy. Examples: *1. Chemical energy (energy stored in the bonds between atoms).* *2. Heat energy (energy of the motion of atoms).* *3. Electrical energy (energy of moving electrons)* Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Learners in groups discuss how the forms of energy are related and can be converted into any other forms. Example: *The electrical energy in wires is converted to light energy when a light switch is turned on.* Engage learners in an activity to trace the conversion of light energy from the sun to heat and mechanical energy in the body of an organism. Guide learners Illustrate and demonstrate everyday use of conversion of energy and show diagrammatically the conversion of energy to other forms. In a torch, the chemical energy of the batteries is converted into electrical energy, which is converted into light energy and heat energy. Chemical energy → Electrical energy → Light energy + heat energy When a wood burnt, its chemical energy is converted into heat energy and light energy. Chemical energy → heat energy + light energy	Batteries Torch Switch Radio, Charts and drawings showing energy conversion

	In an electric fan the electrical energy from the electricity is converted to kinetic energy. Electrical energy → Kinetic energy. Have learners research for more everyday use of conversion of energy. <u>Assessment</u> What is energy transformation?	
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> In a torch, the chemical energy of the batteries is converted into _____ energy, which is converted into _____ energy and _____ energy. In hydroelectric power plants, waterfalls on the turbines from a height. This, in turn, rotates the turbines and generates electricity. Hence, the _____energy of water is converted into the _____energy of the turbine, which is further converted into _____energy.	

Date: 23rd SEPT, 2022	**DAY:**	**Subject:** Science	
Duration: 50mins		**Strand:** Forces & Energy	
Class: B7	**Class Size:**	**Sub Strand:**	
Content Standard: B7.4.3.1. Demonstrate an understanding of the principle of conservation and conversion of energy and their application in real life situations		**Indicator:** B7.4.3.1.3 Know how energy could be conserved for future use in life.	**Lesson:** 1 of 2
Performance Indicator: Learners can describe how energy could be conserved for future use in life		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 33-34			
New words: Conversion, transformation, useable , conservation			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Using questions and answers, review learners understanding in the previous lesson. Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Guide learners to describe how energy is conserved and explain how it can be done for the benefit of humans and other life forms. In groups, have learners discuss ways of conserving energy. They present their findings to the class for discussion. Guide learners to find ways of conserving energy. Example: 1.Use energy efficient light bulbs 2. Iron all dresses in bulk but not in bit. 3. Do not put your television in the standby mode. 4. Turn off your electrical gadgets when they are not in use. 5.Close all doors and windows when using an air conditioner <u>Assessment</u> What is energy transformation? Mention four ways of conserving energy in the home.	Batteries Torch Switch Radio, Charts and drawings showing energy conversion
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> In a loudspeaker, _____energy is converted into ____energy. In a microphone, sound____ energy is converted into _____energy. In a generator, _____energy is converted into _____energy. When fuels are burnt, _____energy is converted into _____energy and _____energy. Write four ways of conserving energy at home.	

TERM THREE
WEEKLY LESSON NOTES
WEEK 3

Week Ending: 30th SEPT, 2022	**DAY:**	**Subject:** Science	
Duration: 60mins		**Strand:** Forces & Energy	
Class: B7	**Class Size:**	**Sub Strand:** Force & Motion	
Content Standard: B7.4.4.1 Examine the concept of motion, Newton's first law of motion, magnetic force in relation to motion and understand their applications to life		**Indicator:** B7.4.4.1.1 Understand that unbalanced forces acting on an object cause it to move.	**Lesson:** 1 of 2
Performance Indicator: Learners can explain that unbalanced forces acting on an object cause it to move..		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 33-34			
New words: balanced, unbalanced, force			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Take learners out of the class and engage them to play the game of tag of war. • Did you enjoy the game? • How is the winner determined in this game? Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Fill a bucket full with sand. Place the bucket of sand on floor and call learners in turns to push the bucket with one finger. Let learners discuss their observation. Drill learners on the correct pronunciation and meanings of the terms. • Balanced forces are forces that are equal in size and opposite in direction. Balanced forces do not result in any change in motion. • Unbalanced forces are forces applied to an object in opposite directions that are not equal in size. Unbalanced forces result in a change in motion. • Friction. The force that opposes the motion of two objects that are in contact. Explain to learners that when you pushed the heavy bucket with a small push, the bucket did not move. The frictional force balanced the small pushing force. Call learners again to push the bucket with their two hands. Now it could be observe that, when a larger force was applied, the bucket moved. The pushing force was now greater than the friction. Since the forces were unbalanced, the bucket moved.	Batteries Torch Switch Radio, Charts and drawings sh owing energy conversion

	Guide learners to conclude that when one force is greater than another, the forces are said to be unbalanced. If the forces acting on an object are unbalanced, this is what happens: • An object at rest start move. • A moving object stop, or change the direction and speed of the object. <u>Assessment</u> Define the following i. Balanced force ii. Unbalanced force iii. Friction	
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> How is Kojo able to push a wheel barrow full of sand from his house to the site?	

Week Ending: 30th SEPT, 2022	**DAY:**	**Subject:** Science	
Duration: 60mins		**Strand:** Forces & Energy	
Class: B7	**Class Size:**	**Sub Strand:** Force & Motion	
Content Standard: B7.4.4.1 Examine the concept of motion, Newton's first law of motion, magnetic force in relation to motion and understand their applications to life		**Indicator:** B7.4.4.1.2 State and explain Newton's First Law of motion	**Lesson:** 1 of 2
Performance Indicator: Learners can state and explain Newton's First Law of motion.		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 33-34			
New words: newton, inertia, motion			

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**	Pick a ball and perform these activities; 1. Place the ball at a stationary position on the teachers table. 2. Roll the ball on the ground from end to end of the class Let learners write down their observations for discussion. Guide learners to state Newton's first law of motion. *Newton's First Law of motion states that an object at rest will stay at rest, and an object in motion will continues in a uniform motion in a straight line unless it is acted upon by some external force to act otherwise*. It is also called the law of inertia. In groups, learners discuss the types of inertia. • Inertia of rest: An object stays where it is placed, and it will stay there until you or something else moves it • Inertia of motion: An object will continue at the same speed until a force act on it. • Inertia of direction: An object will stay moving in the same direction unless a force acts on it. Guide learners to demonstrate Newton's first law of motion. A book kept on a table remains placed at its place unless it is displaced. Similarly, a ball rolling on a horizontal surface keeps on running unless an external force stops it.  With no external force this ball will never move  With no external force the ball will never stop	Batteries Torch Switch Radio, Charts and drawings showing energy conversion

	In groups, learners research the occurrence of things around us using Newton's first law of motion. Example: Car air bags: The function of the air bag is to inflate in an accident and prevent the driver's head from hitting the windshield. <u>Assessment</u> State and explain Newton's first law of motion.	
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> Learners research the occurrence of some of the things around us using Newton's first law of motion.	

TERM THREE
WEEKLY LESSON NOTES
WEEK 4

Week Ending: 7th OCT, 2022	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Forces & Energy	
Class: B7	**Class Size:**	**Sub Strand:** Force & Motion	
Content Standard: B7.4.4.1 Examine the concept of motion, Newton's first law of motion, magnetic force in relation to motion and understand their applications to life	**Indicator:** B7.4.4.1.3 Examine the application of Newton's First Law of motion in life.	**Lesson:** 1 of 2	
Performance Indicator: Learners can describe the application of Newton's First Law of motion in life		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 33-34			
New words: newton, inertia, motion			

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**	Pick a ball and perform these activities; 1. Place the ball at a stationary position on the teachers table. 2. Roll the ball on the ground from end to end of the class Let learners write down their observations for discussion. Guide learners to state Newton's first law of motion. *Newton's First Law of motion states that an object at rest will stay at rest, and an object in motion will continues in a uniform motion in a straight line unless it is acted upon by some external force to act otherwise*. It is also called the law of inertia. In groups, learners discuss the types of inertia. • Inertia of rest: An object stays where it is placed, and it will stay there until you or something else moves it • Inertia of motion: An object will continue at the same speed until a force act on it. • Inertia of direction: An object will stay moving in the same direction unless a force acts on it. Guide learners to demonstrate Newton's first law of motion. A book kept on a table remains placed at its place unless it is displaced. Similarly, a ball rolling on a horizontal surface keeps on running unless an external force stops it.  With no external force this ball will never move  With no external force the ball will never stop	Batteries Torch Switch Radio, Charts and drawings showing energy conversion

	In groups, learners research the occurrence of things around us using Newton's first law of motion. Example: • Car air bags: The function of the air bag is to inflate in an accident and prevent the driver's head from hitting the windshield. • The motion a ball through the atmosphere or a model rocket launched into the atmosphere Guide learners to discuss some applications of Newton's First Law of Motion. E.g. when a metallic ball is put on a smooth surface and given a push it will be in motion until it gets to a blockade and it stops. Use of seat belts in a vehicle, etc. Explain the importance of Newton's First Law of Motion <u>Assessment</u> 1.Newton's first law of motion states than an object's motion will not change unless. A. a force continues to be applied to the object. B. its inertia is stronger than the applied force. C. the net force acting on it is greater than zero. D. the object has no inertia. 2. Overcoming an object's inertia always requires a /an. A. large mass B. massive force C. two of the above D. unbalanced force 3. It is more difficult to start a 50kg box sliding across the floor than a 5-kg box because the 50- kg box has greater. A. inertia B. size C. velocity D. volume	
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> Learners research the occurrence of some of the things around us using Newton's first law of motion.	

Week Ending: 7th OCT, 2022	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Forces & Energy	
Class: B7	**Class Size:**	**Sub Strand:**	
Content Standard: B7.4.4.1 Examine the concept of motion, Newton's first law of motion, magnetic force in relation to motion and understand their applications to life.	**Indicator:** B7.4.4.1.4 Demonstrate the behavior of magnet and its use to life.		**Lesson:** 1 of 2
Performance Indicator: Learners can demonstrate the behavior of magnet and its use to life	**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:		
References: Science Curriculum Pg. 33-34			

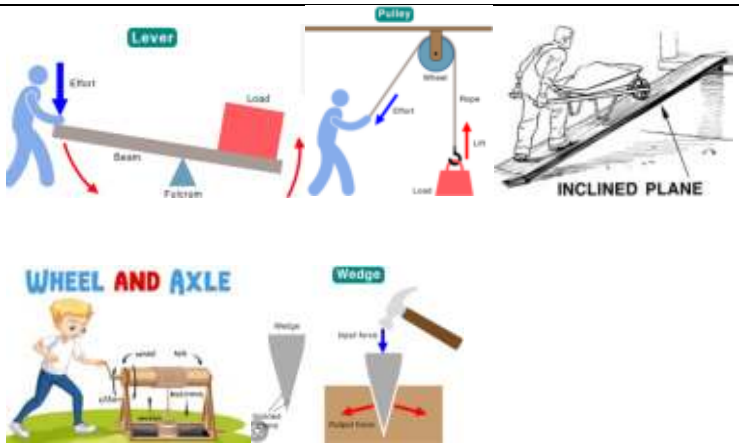
Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Using questions and answers, review learners understanding in the previous lesson. Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Bring to class a real magnet. Call learners in turns to have a feel of the magnet and relate to it. • What is the name of this object? • Do you know its uses? Write learners responses and discuss them. Drill learners on the correct pronunciation and meanings of the terms; • A magnet is any metallic substance which attracts magnetic materials and repels non-magnetic materials • Magnetic materials are materials that are attracted by magnets. Examples iron, nickel and cobalt. • A magnetic field is the area or region around a magnet where the magnetic force can be experienced or felt. Put learners into groups. Give each group a piece of magnet. They are to explore the magnet and observe its behavior of properties/characteristics. Let groups present their findings to the class for discussion. Guide learners to demonstrate the properties of magnet. Example: 1. They have poles at opposite ends. 2. Opposite poles of two magnets attract each other. 3. The force of attraction of a magnet is greater at the poles than at the middle. Engage learners to discuss and describe the types of magnets that exist.	battery, transistor, capacitor, inductors, light emitting diode (LED) and diodes

	Learners in their groups demonstrate the uses of magnet in everyday life. Example: 1. They are used in making electric meters. 2. They are used in making electric door bells. 3. They are used in fridges and freezers as doors seals. 4. They are used in loud speakers. <u>Assessment</u> State some everyday applications of magnets. Explain how magnets cause motion in magnetic materials	
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.	

TERM THREE
WEEKLY LESSON NOTES
WEEK 5

Week Ending: 14th OCT, 2022	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Forces & Energy	
Class: B7	**Class Size:**	**Sub Strand:** Simple Machine	
Content Standard: B7.4.4.2 Recognize some simple machines, and show understanding of their efficiency in doing work.	**Indicator:** B7.4.4.2.1 Identify simple machines	**Lesson:** 1 of 2	
Performance Indicator: Learners can identify simple machines and categorize them.		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 38-39			
New words: Pulley, lever, machine, efficiency, fulcrum , force, weight , moments, watts, work input, work, output			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Task learners to mention some simple machines they use in their machines. • What machines do you have in your homes? • Why do you call these equipment machines? Write learners responses on the board and discuss with them. Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	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. Engage learners to draw some simple machines in their workbooks.  Have learners group simple machines into the following categories. *Lever, inclined Plane, Wedge, Pulley, Wheel and axle, Gears, Screws.* In groups, learners discuss the various categories.	Seesaw, crowbar, a pair of scissors, wheel barrow, shovel, spoon, pliers, knife

	 <u>Assessment</u> Define simple machines and give five examples.	
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> Explain how levers function as simple machines	

Week Ending: 14th OCT, 2022	**DAY:**	**Subject:** Science
Duration: 100mins		**Strand:** Forces & Energy
Class: B7	**Class Size:**	**Sub Strand:** Simple Machine

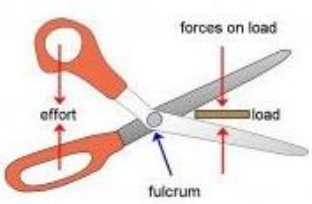
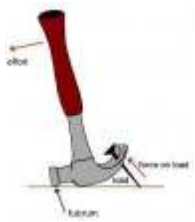
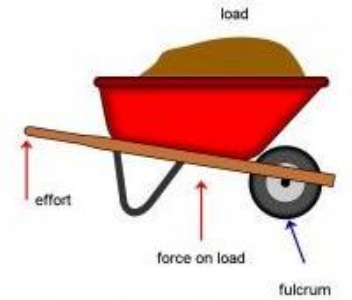
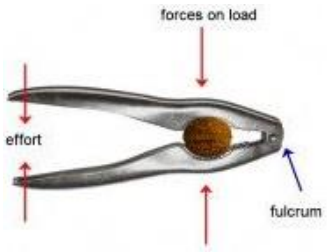
Content Standard: B7.4.4.2 Recognize some simple machines, and show understanding of their efficiency in doing work.	**Indicator:** B7.4.4.2.2 Describe the types and functions of levers	**Lesson:** 2 of 2

Performance Indicator: Learners can describe the types and functions of levers.	**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:

References: Science Curriculum Pg. 38-39

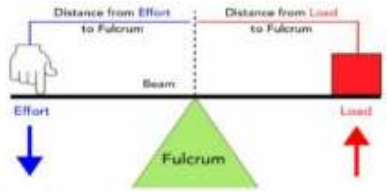
New words: Pulley, lever, machine, efficiency, fulcrum , force, weight , moments, watts, work input, work, output

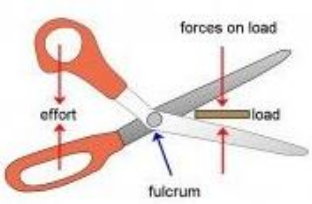
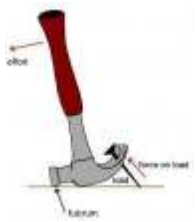
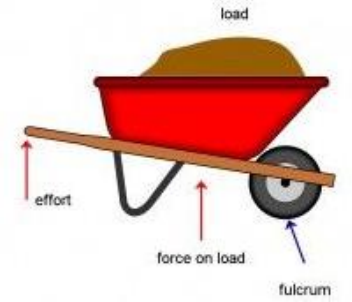
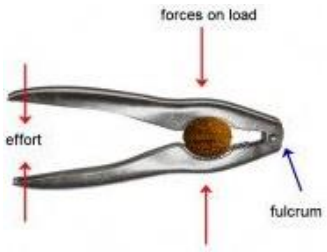
Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Revise with learners on the previous lesson. Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Brainstorm learners for the meaning of lever. A lever is any rigid bar, which rotate at a certain fixed point called a pivot or fulcrum. Learners give examples of lever and relate to them. Examples bottle opener, a pair of scissors and wheelbarrow. Guide learners to identify and discuss the parts of lever. • The effort is the force applied to the lever to lift the load(weight). • The load is weight which is to be lifted. • The pivot is the fixed point about which the lever rotates. Learners to note that; The distance from the pivot to the effort is called the effort distance The distance from the pivot to the load is called the load distance. The closer the pivot is to the load; the less force is needed to lift the load and vice versa.  Learners to classify levers into first, second and third classes and demonstrate how the principals involved in each class make work easier in everyday life. • First class lever In the first-class lever, the pivot (P) is between the effort (E) and the load (L) Examples of first class levers are	Seesaw, crowbar, a pair of scissors, wheel barrow, shovel, spoon, pliers, knife

	a pair of scissors, see-saw, pliers, pick axe, shovel, crowbar, shears, and claw hammer   • Second class lever In a second-class lever, the load(L) is between the pivot(P) and the effort (E). Examples of second class levers are wheel barrow, nutcracker and bottle opener   • Third class lever In a third-class lever, the effort(E) is between the pivot (P) and the load (L). Examples of third class levers are cutlass, hoe, forceps, fishing rod, sugar tongs, nail clippers, forearm of a human body, etc.  <u>Assessment</u> Explain how levers function as 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. <u>Homework</u> Find out why the efficiency of simple machines is less than 100%..	

TERM THREE
WEEKLY LESSON NOTES
WEEK 6

Week Ending: 21st OCT, 2022	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Forces & Energy	
Class: B7	**Class Size:**	**Sub Strand:** Simple Machine	
Content Standard: B7.4.4.2 Recognize some simple machines, and show understanding of their efficiency in doing work.	**Indicator:** B7.4.4.2.3 Know work input, and output and efficiency as they apply to machines	**Lesson:** 1 of 2	
Performance Indicator: Learners can describe the types and functions of levers.		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 38-39			
New words: Pulley, lever, machine, efficiency, fulcrum , force, weight , moments, watts, work input, work, output			

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 lever. A lever is any rigid bar, which rotate at a certain fixed point called a pivot or fulcrum. Learners give examples of lever and relate to them. Examples bottle opener, a pair of scissors and wheelbarrow. Guide learners to identify and discuss the parts of lever. • The effort is the force applied to the lever to lift the load(weight). • The load is weight which is to be lifted. • The pivot is the fixed point about which the lever rotates. Learners to note that; The distance from the pivot to the effort is called the effort distance The distance from the pivot to the load is called the load distance. The closer the pivot is to the load; the less force is needed to lift the load and vice versa.  Learners to classify levers into first, second and third classes and demonstrate how the principals involved in each class make work easier in everyday life. • First class lever In the first-class lever, the pivot (P) is between the effort (E) and the load (L) Examples of first class levers are	Seesaw, crowbar, a pair of scissors, wheel barrow, shovel, spoon, pliers, knife

	a pair of scissors, see-saw, pliers, pick axe, shovel, crowbar, shears, and claw hammer   • Second class lever In a second-class lever, the load(L) is between the pivot(P) and the effort (E). Examples of second class levers are wheel barrow, nutcracker and bottle opener   • Third class lever In a third-class lever, the effort(E) is between the pivot (P) and the load (L). Examples of third class levers are cutlass, hoe, forceps, fishing rod, sugar tongs, nail clippers, forearm of a human body, etc.  <u>Assessment</u> Explain how levers function as 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. <u>Homework</u> Find out why the efficiency of simple machines is less than 100%..	

Week Ending: 21st OCT, 2022	**DAY:**	**Subject:** Science
Duration: 100mins		**Strand:** Forces & Energy
Class: B7	**Class Size:**	**Sub Strand:** Simple Machine

Content Standard: B7.4.4.2 Recognize some simple machines, and show understanding of their efficiency in doing work.	**Indicator:** B7.4.4.2.3 Know work input, and output and efficiency as they apply to machines	**Lesson:** 2 of 2

Performance Indicator: Learners can explain the relationship between work input, and output and efficiency as they apply to machines	**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:

References: Science Curriculum Pg. 38-39

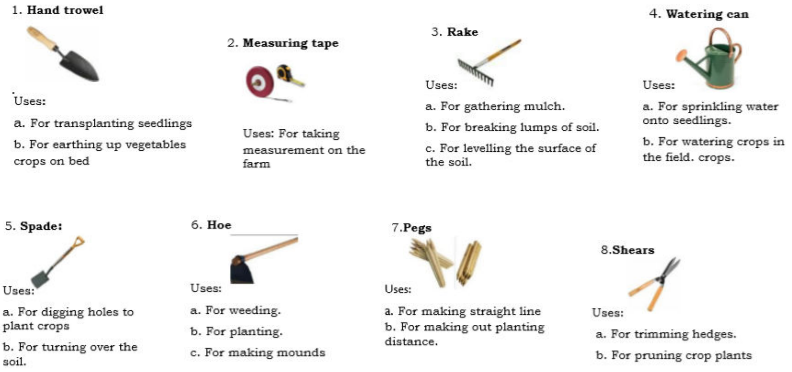
New words: Pulley, lever, machine, efficiency, fulcrum , force, weight , moments, watts, work input, work, output

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 to explain the terms work input, work output and efficiency. • *Work input is the work done by the effort applied on a machine. The work input can be calculated mathematically by multiplying the effort by the distance moved by the effort* • *Work output is the useful work done by a machine.* *Work out put = load × distance moved by the load.* *The output of a machine is always less than input energy because part of the input energy is used to overcome* *1. Friction between moving parts of the machine.* *2. Inertia.* *3. gravitational force* • *Efficiency of a machine is defined as the ratio of the work output to the work input expressed as a percentage* Guide learners to explain the efficiency of a machine as the ratio of work output to work input expressed as a percentage. • Mathematically; Efficiency = $\frac{\text{Work output}}{\text{Work input}}$ x 100% • Efficiency = $\frac{\text{Load x distance moved by load}}{\text{Effort x distance moved by effort}}$ x 100% Guide learners to explain the concept of efficiency of a machine. *The efficiency of a machine is always less than 100% because some or part of the input energy is used to overcome* *1. friction between moving parts of the machine.* *2. gravitational force* *3. air resistance* In groups, learners describe how efficiency of simple machines can be improved (e.g. by oiling its parts to reduce friction. *To improve upon the efficiency of a machine you need to* • *decrease friction by oiling and greasing the metal parts of machines.* • *maintaining the machines from time to time*	Seesaw, crowbar, a pair of scissors, wheel barrow, shovel, spoon, pliers, knife

	<u>Assessment</u> 1. Explain how levers function as simple machines. 2. Find out why the efficiency of simple machines is less than 100%.	
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.	

TERM THREE
WEEKLY LESSON NOTES
WEEK 7

Week Ending: 28th OCT, 2022	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Forces & Energy	
Class: B7	**Class Size:**	**Sub Strand:** Agricultural Tools	
Content Standard: B7.4.5.1 Demonstrate knowledge and skills in handling and maintenance of basic and simple agricultural tools	**Indicator:** B7.4.5.1.1 Explain the basic rules in handling and maintaining simple agricultural tools	**Lesson:** 1 of 2	
Performance Indicator: Learners can describe basic rules in handling and maintaining simple agricultural tools.		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 41-42			

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 list some simple or basic farm tools in agriculture. Examples: hand trowel, measuring tape, rake, watering can, etc. Discuss the meaning and importance of handling and maintenance of agricultural tools.  1. **Hand trowel** Uses: a. For transplanting seedlings b. For earthing up vegetables crops on bed 2. **Measuring tape** Uses: For taking measurement on the farm 3. **Rake** Uses: a. For gathering mulch. b. For breaking lumps of soil. c. For levelling the surface of the soil. 4. **Watering can** Uses: a. For sprinkling water onto seedlings. b. For watering crops in the field. crops. 5. **Spade:** Uses: a. For digging holes to plant crops b. For turning over the soil. 6. **Hoe** Uses: a. For weeding. b. For planting. c. For making mounds 7. **Pegs** Uses: a. For making straight line b. For making out planting distance. 8. **Shears** Uses: a. For trimming hedges. b. For pruning crop plants In groups, learners List and match the basic rules in handling and maintenance of tools with specific simple tools used in agriculture. Guide learners to describe how handling and maintenance of simple and basic agricultural tools are done. The following are some basic rules or safety precautions to remember when using or operating agricultural tools. • *Dress appropriately: An untied shoelace and flowing long hair should be tied when using farm tools. Dressing appropriately can reduce the risk of injuries.* • *Maintain awareness: Stay focused. Beware of what you are doing and where you are going.* • *Avoid alcohol: Even one shot of drink can affect your ability to operate machinery.*	Seesaw, crowbar, a pair of scissors, wheel barrow, shovel, spoon, pliers, knife

	• *Keep alcohol out of the picture until you are done for the day.* • *Have enough rest: Feeling fatigued when using farm tools can be dangerous. Make sure you take break from work when you need rest.* <u>Assessment</u> Identify and state the uses of five basic farm tools in agriculture.	
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> Draw any five basic farm tools.	

Week Ending: 28th OCT, 2022	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Forces & Energy	
Class: B7	**Class Size:**	**Sub Strand:** Agricultural Tools	
Content Standard: B7.4.5.1 Demonstrate knowledge and skills in handling and maintenance of basic and simple agricultural tools	**Indicator:** B7.4.5.1.2 Apply the handling and maintenance of basic and simple agricultural tools in their community.		**Lesson:** 1 of 2
Performance Indicator: Learners can describe ways of maintaining farm tools.		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 41-42			

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 observe and discuss the handling and maintenance of basic and simple agricultural tools used in farms visited in the community and write a report. Through demonstrations, lead learners to assemble agricultural tools from the community and practice handling the tools to perform simple agricultural operations. Write down the operational rules of handling agricultural tools. Assemble agricultural tools from the community and practice the basic rules in tools maintenance and list the rules used. Let learners understand that Agricultural tools need proper care and maintenance so that they can be used efficiently to perform the various farming operations for a longer period of time. • *Sharpen tools before and after use: The cutting edges of tools such as cutlasses, axes, harvesting knives and shears become blunt after regular use. They should be sharpened by rubbing the blunt cutting edge against specially made stone or with a file. When you sharpen tools, it reduces the amount of force you need to apply to perform the task.* • *Oil and grease metal parts: Tools made of iron or metal parts should always be cleaned after use, wash and dry them with rag. They should be rubbed with oil or grease before they are stored to prevent them from rusting.* • *Wooden handles should be strong: Make sure tools with wooden handles are strong and durable. If there is any defect, replace them.* • *Hang tools. They should be Keep your tools hanged. Leaving them on the floor can cause rusts as they come in contact with moisture. Leaving tools on the floor can cause injury to persons or* • *persons stepping on them may break or deform them. This make them unsuitable for work*.	Seesaw, crowbar, a pair of scissors, wheel barrow, shovel, spoon, pliers, knife

	Learners explain reasons for maintaining farm Tools; Maintenance prolong the life span and efficiency of the tools. A well maintained tool is safe to handle and the risk associated with the handling of these tools are reduced. <u>Assessment</u> State and explain four ways of maintaining farm tools	
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.	

TERM THREE
WEEKLY LESSON NOTES
WEEK 8

Week Ending: 4TH NOV, 2022	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Humans & The Environment	
Class: B7	**Class Size:**	**Sub Strand:** Waste Management Systems	
Content Standard: B7.5.1.1 Exhibit knowledge and skill of scientific basis for management practices of types of waste in the environment	**Indicator:** B7.5.1.1.1 Apply information from research on good management practices of waste to make the environment clean.		**Lesson:** 1 of 2
Performance Indicator: Learners can identify the types of waste and discuss ways of managing waste in the community.		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 44			

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	Pictures of dump sites

	plant. Other examples include plastics, Styrofoam containers, bottles, cans, papers, scrap iron, and other trash 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. <u>Homework</u> Assign learners to observe how waste is being minimized at home and then report on it.	

Week Ending: 4TH NOV, 2022	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Humans & The Environment	
Class: B7	**Class Size:**	**Sub Strand:** Waste Management Systems	
Content Standard: B7.5.1.1 Exhibit knowledge and skill of scientific basis for management practices of types of waste in the environment	**Indicator:** B7.5.1.1.1 Apply information from research on good management practices of waste to make the environment clean.		**Lesson:** 2 of 2
Performance Indicator: Learners can identify the types of waste and discuss ways of managing waste in the community.		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 44			

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**	Show videos or pictures that teaches and describes ways of minimizing waste in the environment to learners. In a think-pair-share activity, have learners discuss what will happen if people do not minimize waste in the community. Write major answers on the board for learners to read for more understanding • How can we recycle the waste we produce? Have learners in groups discuss the impact of waste on health and environment.. 1. Chemical poisoning through chemical inhalation. 2. Increase in hospitalization of diabetic residents living near hazardous waste sites. 3. Burning of wastes in the open causes air pollution which has effects on the humans. 4. Gases from incineration (burning) may cause air pollution and contribute to acid rain, while the ash from incinerators may contain heavy metals and other toxins. 5. Incinerating waste also causes problems, because plastics tend to produce toxic substances, such as dioxins, when they are burnt. Brainstorm learners for the meaning of waste disposal *Waste disposal is the proper disposition of waste in accordance with local environmental guidelines or laws*. Guide learners to discuss ways of managing wastes. • Landfill/burying. • Incineration (combustion) • Resource recovery. • Recycling • Plasma gasification	Pictures of dump sites

	<u>Assessment</u> Mention three ways of minimizing waste in the school and home. Have learners plan, design and make their own litterbins for use in the class, school and community.	
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> Instruct learners to use the internet to find out how waste is minimized in other places. Then prepare a poster to show their information	

TERM THREE
WEEKLY LESSON NOTES
WEEK 9

Week Ending: 11TH NOV, 2022	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Humans & The Environment	
Class: B7	**Class Size:**	**Sub Strand:** Human Health	
Content Standard: B7.5.2.1 Demonstrate knowledge of common deficiency diseases of humans, their causes, symptoms, effects and prevention	**Indicator:** B7.5.2.1.1 Explain the relationship between food nutrients and common deficiency diseases and how they affect humans		**Lesson:** 1 of 2
Performance Indicator: Learners can explain the relationship between food nutrients and common deficiency diseases and how they affect humans		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 45			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Review the previous lesson with learners through questions and answers. Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Guide learners to name and analyze food nutrients such as carbohydrates, proteins, fatty acids, and their uses in the human body Have learners discuss and make presentations on deficiency diseases associated with lack of food nutrients such as carbohydrates, proteins, fatty acids, vitamins and others in the human body Have learners relate the nutrients they gain or lack to the foods they normally eat e.g. lack of protein leads to kwashiorkor, lack of iron lead to anaemia, etc. In groups, let learners describe symptoms, effects and prevention of common deficiency diseases such as night blindness, rickets, scurvy, kwashiorkor and others.	Pictures of dump sites
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: 11TH NOV, 2022	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Humans & The Environment	
Class: B7	**Class Size:**	**Sub Strand:** Human Health	
Content Standard: B7.5.2.2 Demonstrate knowledge of the nature of selected viral, diseases of humans, their causes, symptoms, effects and management	**Indicator:** B7.5.2.2.1 Explain the nature of viral diseases with special emphasis on corona virus (COVID-19) /Ebola/H1N1 disease its causes, symptoms, effects on humans and its prevention		**Lesson:** 2 of 2
Performance Indicator: Learners can explain the nature of viral diseases with special emphasis on corona virus		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 46			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Review the previous lesson with learners through questions and answers. Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Brainstorm learners to discuss the nature of viral diseases. In groups, learners search for information and make presentations on the corona virus disease (COVID -19), Ebola, and H1N1 diseases their mode of transmission from person to person, community to community and from country to country. Guide learners to describe the symptoms, effects and prevention of COVID-19), Ebola, and H1N1 diseases and why they are declared pandemic. Guide learners to describe the role of individuals, community members and government in managing COVID-19 Ebola, and H1N1 diseases. Engage learners to design and produce a poster to educate their community members on the incidence and control of named viral diseases: COVID-19, Ebola, and H1N1.	Pictures of dump sites
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.	

TERM THREE
WEEKLY LESSON NOTES
WEEK 10

Week Ending: 18TH NOV, 2022	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Humans & The Environment	
Class: B7	**Class Size:**	**Sub Strand:** Science & Industry	
Content Standard: B7.5.3.1 Realise how careers in science can improve life of humans and research about Ghanaian and internationally recognised scientists and science educators and model after them	**Indicator:** B.7. 5.3.1.1 Discover and explain how careers in science can improve human conditions and relate these careers to the work of great national and international scientists and science educators	**Lesson:** 1 of 2	
Performance Indicator: Learners can discover and explain how careers in science can improve human conditions		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 46			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Review the previous lesson with learners through questions and answers. Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Engage learners to mention the type of career they wish to take up in future. Let learners describe the various careers in science and relate them to the work of national scientist e.g. Prof. Ibok Nsa Oduro, Prof. Francis Allotey Professor Ewurama Addy, and science educationists: Professor Anamuah-Mensah, Professor Theophilus Ossei-Anto, Professor Christian Anthony-Krueger and others in groups. Let learners describe various careers in science and relate them to the work of international scientists: Albert Einstein, Alexander Fleming, Charles Darwin, Paul Ratnei, Stephen Hawkins etc through group presentations. Let learners explain the impact of science, technology and innovation in homes, schools, communities and the universe and create interest for learners to research for information to build portfolios Let learners identify the science and technology careers that Ghana must focus on and explain their reasons in groups. Let learners relate the lesson to everyday life to understand why Ghana should focus on specific science and technology careers Let learners discuss how careers can improve human conditions.	Videos, Pictures, Text books, Internet search

	<u>Assessment</u> 1. Name and write five science-related careers you can identify in your community. 2. Write the impact of the careers you have named in your community.	
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: 18TH NOV, 2022	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Humans & The Environment	
Class: B7	**Class Size:**	**Sub Strand:** Science & Industry	
Content Standard: B7.5.3.1 Realise how careers in science can improve life of humans and research about Ghanaian and internationally recognised scientists and science educators and model after them	**Indicator:** B.7. 5.3.1.1 Discover and explain how careers in science can improve human conditions and relate these careers to the work of great national and international scientists and science educators	**Lesson:** 1 of 2	
Performance Indicator: Learners can discover and explain how careers in science can improve human conditions		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 46			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Review the previous lesson with learners through questions and answers. Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Engage learners to mention the type of career they wish to take up in future. Let learners describe the various careers in science and relate them to the work of national scientist e.g. Prof. Ibok Nsa Oduro, Prof. Francis Allotey Professor Ewurama Addy, and science educationists: Professor Anamuah-Mensah, Professor Theophilus Ossei-Anto, Professor Christian Anthony-Krueger and others in groups. Let learners describe various careers in science and relate them to the work of international scientists: Albert Einstein, Alexander Fleming, Charles Darwin, Paul Ratnei, Stephen Hawkins etc through group presentations. Let learners explain the impact of science, technology and innovation in homes, schools, communities and the universe and create interest for learners to research for information to build portfolios Let learners identify the science and technology careers that Ghana must focus on and explain their reasons in groups. Let learners relate the lesson to everyday life to understand why Ghana should focus on specific science and technology careers Let learners discuss how careers can improve human conditions. <u>Assessment</u>	Videos, Pictures, Text books, Internet search

	1. Name and write five science-related careers you can identify in your community. 2. Write the impact of the careers you have named in your community.	
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.	

TERM THREE
WEEKLY LESSON NOTES
WEEK 11

Week Ending: 25TH NOV, 2022	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Humans & The Environment	
Class: B7	**Class Size:**	**Sub Strand:** Climate Change & Green Economy	
Content Standard: B7.5.4.1 Demonstrate understanding of sustainable energy choices and their impact on the environment	**Indicator:** B7.5.4.1.1 Search for information on ways sustainable energy choices and scientific ideas are used to protect the environment.		**Lesson:** 1 of 2
Performance Indicator: Learners can search for information on ways sustainable energy choices and scientific ideas are used to protect the environment		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 48			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Review the previous lesson with learners through questions and answers. Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Drill learners on the correct pronunciation and meaning of key terms. ***Weather**: Weather describes the condition of the atmosphere over a short period of time. It describes the state of the atmosphere for example the degree to which it is hot or cold, wet or dry, calm or stormy, clear or cloudy.* ***Climate**: Climate is the condition of the atmosphere at a particular location over a long period of time. It is the long-term summation of the atmospheric elements and their variations.* ***Climate change**: The term climate change refers to significant changes in average weather patterns (i.e. precipitation, temperature, wind and other indicators) that persist within a climate system, caused directly or indirectly by human activities.* In groups, let learners discuss the effects of climate change on the Environment. *1. Direct physical harm on humans* *2. Crop failure and farmland loss* *3. Sea level rises and coastal submersion* *4. Freshwater loss and desertification* Brainstorm learners for the meaning of greenhouse effect. *The greenhouse effect is a natural process that warms the Earth's surface.* *The major greenhouse gases are* *i. water vapor (H2O)* *ii. carbon dioxide (CO2)* *iii. methane (CH4)* *iv. chlorofluorocarbons(CFCs)* *v. Hydrogenated chlorofluorocarbons (HCFCs)* *vi. Tropospheric ozone (O3)* *vii. Dinitrogen oxide (N2O).*	Pictures of plants an Pictures and videos depicting greenhouse effect d animals depicting how they survive

	Have learners research on the meaning of green economy. *Green economy is one whose growth of income and jobs is driven by investments that reduce carbon emissions and pollution, enhance efficiency and sustain biodiversity and ecosystem service*. Guide learners to discuss the advantages of green economy. *1. Green economy potentially works towards decreasing environmental pollution, and thus improves the quality of soil, water and air and also protects environmental well-being.* *2. Global warming, loss of biodiversity, deforestation, desertification, resource depletion can gradually be obstructed by implementing green economy which will automatically save the earth and its animals from destruction as far as possible.* *3. Economic growth is also enhanced due to the establishment of new markets for biofuels and renewable energy resources.* *4. Establishment of new markets have potential to support international advantages when these new markets will invite funds through exports and also increase domestic sales.* *5. Agricultural industries will be able to achieve a dignified place due to the emphasis on green technologies*.	
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: 25TH NOV, 2022	**DAY:**	**Subject:** Science	
Duration: 100mins		**Strand:** Humans & The Environment	
Class: B7	**Class Size:**	**Sub Strand:** Climate Change & Green Economy	
Content Standard: B7.5.4.1 Demonstrate understanding of sustainable energy choices and their impact on the environment	**Indicator:** B7.5.4.1.1 Search for information on ways sustainable energy choices and scientific ideas are used to protect the environment.		**Lesson:** 2 of 2
Performance Indicator: Learners can search for information on ways sustainable energy choices and scientific ideas are used to protect the environment		**Core Competencies:** DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 48			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Review the previous lesson with learners through questions and answers. Share learning indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Describe how people use sustainable energy choices and scientific ideas to protect the environment. **Sustainable Energy**: Energy is sustainable if it meets the need of the present without compromising the ability of the future generation to meet their own needs. Guide learners to identify sustainable energy choices as; solar energy, wind energy, hydropower, geothermal energy and ocean energy. *1. **Solar Energy**: Solar energy is derived by capturing radiant energy from the sun and convert it into electricity. Photovoltaic (PV) systems can convert direct sunlight into electricity through the use of solar cells.* ***Benefits**: One of the benefits of solar energy is that sunlight is always available. It improves public health and environmental conditions because there no release of greenhouse gases in the environment.* *2. Wind Energy: Wind farms capture the energy of the wind by using turbines and converting it into electricity.* *Benefits: Wind energy is clean energy source which means that it does not pollute the air like other forms of energy.* *3. Geothermal Energy: Geothermal energy allows us to fetch energy from beneath the earth.* *4. Ocean Energy: The waves or tides of the ocean have great power which can tapped can generate a lot of energy to power millions of homes.* *5. Biomass Energy: Bioenergy is a renewable energy derived from biomass. Biomass is organic matter that comes from living plants and organisms.* *6. Hydroelectric Power: There are the rivers or waterfalls whose energy of the moving water when captured that can turn turbines to generate power.* In groups, let learners discuss the need for Sustainable Energy. *1.Sustainable energy fights against climate change.* *2. Renewable energy will never deplete or run out.*	Pictures and videos depicting greenhouse effect

	3. Sustainable energy does not harm the environment and can help improve public health. *4. Renewable energy resources emit little or no greenhouse gases, which is better for the environment and our health.* *5. Sustainable energy can reduce or eliminate our reliance on fossil fuels.* Guide learners to discuss the Impact of sustainable energy choices on the environment. <u>Assessment</u> Explain the following terms: • Sustainable energy choice • Greenhouse effects • 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.	