

SECOND TERM WEEKLY LESSON NOTES

WEEK 10

Date: 15 th JULY, 2022	DAY:	Subject: Science
Duration:		Strand: Forces & Energy
Class: B7	Class Size:	Sub Strand: Electricity & Electronics
Content Standard: B7.4.2.1 Demonstrate understanding of forms of electricity, its generation and effects on the environment.	Indicator: B7.4.2.1.1 Describe the various forms of electricity generation.	Lesson: 1 of 2
Performance Indicator: Learners can demonstrate how heat is transferred in various media		Core Competencies: DL 5.3: DL 5.1:CC 8.2: CC 8.5: CI 5.2: CI 6.2:CI 5.4:
References: Science Curriculum Pg. 29-31		
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 search for and discuss information about the nature and generation of thermal and nuclear electricity. Electricity generation is the process of converting some form of energy into electrical energy. Thermal and nuclear energy can be used to produce electricity. <u>Thermal Energy:</u> Thermal energy is a form of energy that is associated with heat. All objects are made up of tiny particles called molecules. In cold things, like ice cubes, the molecules move very slowly. In hot things, like a hot drink, the molecules move very fast. The faster the molecules are moving inside an object, the hotter the object will be. Therefore, hot objects are objects which have high thermal energy. <u>How Thermal Energy is Generated</u> Thermal Energy is a key source of electricity. Thermal energy can be produced from fossil fuels such as crude oil and gas. In Ghana the Aboadze Thermal Plant uses crude oil and gas to generate electricity. <u>Nuclear Energy:</u> Nuclear energy is the type of energy which is produced from atoms of various elements through chemical reactions. Scientists have learnt to capture energy from the atoms of some elements which can be used to generate electricity. <u>How Nuclear Energy is Generated</u> When an atom is split a huge amount of energy is released. This energy is used to generate electricity for industries and homes. This takes place at nuclear power plants. At the nuclear power plant, the heat from the nuclear reaction is used to create steam from water which in turns powers electrical generators.	Charts, pictures and videos

	Have learners produce reports, posters, diagrams and charts about your findings.	
PHASE 3: REFLECTION	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

Date: 15 th JULY, 2022		DAY:	Subject: Science
Duration:		Strand: Forces & Energy	
Class: B7	Class Size:	Sub Strand: Electricity & Electronics	
Content Standard: B7.4.2.1 Demonstrate understanding of forms of electricity, its generation and effects on the environment.		Indicator: B7.4.2.1.2 Explain the impact of electricity generation on the environment.	Lesson: 2 of 2
Performance Indicator: Learners can describe the impact of electricity generation on the environment.		Core Competencies: DL 5.3: DL 5.1:CC 8.2: CC 8.5: CI 5.2: CI 6.2:CI 5.4:	
References: Science Curriculum Pg. 29-31			
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	Engage learners to debate the negative effects of both thermal and nuclear electricity generation on the environment and how to reduce the effects. Almost all part of the electricity system affects the environment and the size of these impact will depend on how and where the electricity is generated. In general, the environmental effect includes: <ol style="list-style-type: none"> 1. Emission of greenhouse gases and other pollutants, especially when a fuel is burnt. 2. Discharge of pollutants into water bodies, including thermal pollution, which makes water hotter than the original temperature of the water body. 3. Generation of solid waste, which may include hazardous waste. 4. Lands used for fuel production, power generation, and transmission and distribution lines. 5. Effects on plants, animals and ecosystem that result from the air, water, waste and land. Have learners create posters leaflets of the outcome of the debate. <u>Assessment</u> <ol style="list-style-type: none"> 1. Briefly distinguish between nuclear and thermal energy. 2. Write any two applications of thermal energy. 3. Describe how nuclear energy is generated in your own words 	Charts, pictures and videos	
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.		