

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	<p>Guide learners to explain the following terms;</p> <ul style="list-style-type: none"> 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. <p><i>This means that a system always has the same amount of energy, unless it's added from the outside.</i></p> <p>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.</p> <p>Guide learners to explain energy conversion and its application to life. Example:</p> <ul style="list-style-type: none"> Turning off the light when leaving the room Unplugging appliances when not in use. Walking instead of driving. <p><u>Assessment</u> What is conservation? State the law of energy conservation. State three examples of energy conservation</p>	Pictures and charts

<p>PHASE 3: REFLECTION</p>	<p>Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson.</p> <p>Take feedback from learners and summarize the lesson.</p> <p><u>Homework</u> Using diagrams, explain the law of conservation of energy</p>	
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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. <i>1. Energy Conversion:</i> <i>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:</i> <i>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.</i> <i>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.</i> <i>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.</i> <i>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.</i> <i>2. Energy Conservation:</i>	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. Impact of Energy Conversion:

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. Impact of Energy Conservation:

	<p><i>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.</i></p> <p><i>b. Preservation of Natural Resources: Energy conservation reduces the reliance on non-renewable energy sources, such as fossil fuels, which deplete finite resources.</i></p> <p><i>c. Improved Air Quality: Energy conservation reduces the need for energy generation, which often involves burning fossil fuels and releasing pollutants into the air.</i></p> <p><i>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.</i></p>	
<p>PHASE 3: REFLECTION</p>	<p>Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson.</p> <p>Take feedback from learners and summarize the lesson.</p>	