

# *EaD Comprehensive Lesson Plans*



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**BASIC 8**

**WEEKLY LESSON PLAN – WEEK 5**

Strand:	Force and Energy		Sub-Strand:		Conversion and Conservation of Energy	
Content Standard:	B8.4.3.1 Evaluate the impact of conversion of energy and energy conservation on the environment					
Indicator (s)	B8.4.3.1.1. Explain the importance of conversion of energy and energy conservation in daily life			Performance Indicator: learners can differentiate between Energy Conservation and Energy Conversion.		
Week Ending	28-07-2023					
Class	B.S.8	Class Size:		Duration:		
Subject	Science					
Reference	Science Curriculum, Teachers Resource Pack, Learners Resource Pack.					
Teaching / Learning Resources	Word chart, Poster, Pictures, Video		Core Competencies:		<ul style="list-style-type: none"><li>Digital Literacy</li><li>Critical Thinking and Problem Solving</li><li>Communication and Collaboration.</li></ul>	
DAY/DATE	PHASE 1 : STARTER	PHASE 2: MAIN				PHASE 3: REFLECTION

MONDAY	Discuss the meaning of “Energy transformation ” or “Energy Conversion” with the Learners.	<div><div><div><div>1. Using a Poster, explain the types of Energy Conversion.</div><div>2. Assist Learners to describe examples of energy conversion in real life.</div><div>3. Learners brainstorm to identify 5 importance of energy conversion.</div><div>4. Discuss the law of conversion with the Learners.</div></div><div><div>Types of Energy Conversion</div><div><div><div>• Chemical Potential Energy - this is the energy stored in atomic bonds.</div><div>• Elastic Potential Energy - this is the energy stored in objects due to application of force.</div><div>• Gravitational Potential Energy - this is the energy stored due to the position of an object.</div></div></div><div><div>Law of Energy Conversion</div><div><div><div>Scenario</div><div>Energy conversions involved</div></div><div><div>Photosynthesis in Plants</div><div>Solar Energy to Chemical Energy</div></div><div><div>In Piezoelectrics</div><div>Strain Energy to Electric Energy</div></div><div><div>In Electric lamp</div><div>Electric Energy to Heat Energy and Light Energy</div></div><div><div>Burning of wood</div><div>Chemical energy to Heat and Light Energy</div></div></div></div></div></div></div>	<div><div>Through questions and answers, conclude the lesson.</div><div><div>Exercise;</div><div><div>1. Explain 3 types of Energy Conversion.</div><div>2. Write 5 examples of energy conversion.</div><div>3. State 3 importance of energy conversion.</div></div></div></div>
THURSDAY	Learners brainstorm to explain the meaning of “Energy Conservation”.	<div><div><div><div>1. Discuss with Learners on 5 ways of conserving energy.</div><div>2. Assist Learners to explain 3 types of Energy Conservation with examples.</div><div>3. Using a Chart, explain the law of energy conservation .</div><div>4. Learners brainstorm to identify 4 importance of Energy Conservation.</div></div><div><div>Energy Conservation;</div><div>Energy conservation is the effort to reduce wasteful energy consumption by using fewer energy services. This can be done by using energy more effectively or changing one's behavior to use less service.</div><div><div>ways to conserve energy;</div><div><div><div>• Turn Off Lights and Electronics When You Aren't Using Them.</div><div>• Replace Traditional Light Bulbs with LEDs.</div><div>• Get a Smart Thermostat.</div><div>• Ensure Your Home is Properly Insulated.</div><div>• Put Decorative Lights on a Timer.</div></div></div></div></div></div></div>	<div><div>Reflect on the importance of Energy Conservation.</div><div><div>Exercise;</div><div><div>1. State 5 ways of Conserving Energy</div><div>2. Explain 4 types of Energy Conservation</div></div></div></div>

		<ul style="list-style-type: none"> <li>Identify and Unplug Energy Vampires.</li> <li>Reduce Appliance Use.</li> <li>Use Less Hot Water.</li> </ul>	
<b>FRIDAY</b>	Learners brainstorm to explain how they can conserve energy with regards to the use of electronic devices.	<ol style="list-style-type: none"> <li>Assist Learners to explain the concept of “Energy Efficiency”.</li> <li>Discuss with Learners about the types of Energy Efficiency.</li> <li>Demonstrate on Calculating for energy efficiency using a formula.</li> <li>Learners practice calculating more examples of energy efficiency.</li> </ol> <p><b>Importance of Energy Efficiency;</b></p> <ul style="list-style-type: none"> <li><b>Environmental:</b> Increased efficiency can lower greenhouse gas (GHG) emissions and other pollutants, as well as decrease water use.</li> <li><b>Economic:</b> Improving energy efficiency can lower individual utility bills, create jobs, and help stabilize electricity prices and volatility.</li> <li><b>Utility System Benefits:</b> Energy efficiency can provide long-term benefits by lowering overall electricity demand, thus reducing the need to invest in new electricity generation and transmission infrastructure.</li> <li><b>Risk Management:</b> Energy efficiency also helps diversify utility resource portfolios and can be a hedge against uncertainty associated with fluctuating fuel prices.</li> </ul> <p style="text-align: center;"><b>Energy Efficiency Formula:</b></p> $\frac{\text{Energy Output}}{\text{Energy Input}} \times 100 = \% \text{ Efficiency}$ <p>Energy Efficiency = (energy output / energy input) × 100</p> <p>Energy output is the useful energy offered by an item such as the light generated by a light bulb</p> <p><b>Example:</b> An older piece of equipment receives 500 joules of power to produce the equivalent of 100 joules of output. <math>100/500 = 0.2</math>, or 20% efficiency.</p>	Assist Learners to identify 5 importance of Energy Efficiency.

		<p>A newer equipment version takes the same 500-joule input to generate 400 joules of productive output. <math>400/500 = 0.8</math>, or 80% efficiency—much better!</p> <p>In some cases, the “wasted” energy will result in a byproduct that can be utilized, such as the heat generated by lamps that are primarily designed to illuminate. If you can’t capture that energy, it simply disperses itself and provides no benefit.</p>	
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*Name of Teacher:*

*School:*

*District:*