

# *EaD Comprehensive Lesson Plans*



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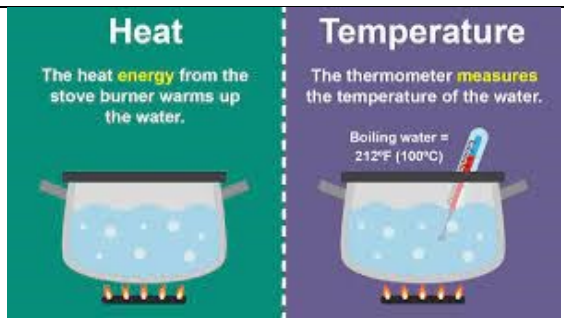
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**BASIC 8**

**WEEKLY LESSON PLAN – WEEK 4**

<b>Strand:</b>	Forces and Energy		<b>Sub-Strand</b>	Energy																					
<b>Content Standard:</b>	B8.4.1.3 Demonstrate understanding of the relationship between heat and temperature.																								
<b>Indicator (s)</b>	B8.4.1.3.1 Discuss the differences and the relationship between heat and temperature in the environment		<b>Performance Indicator:</b> Learners can explain the meaning of heat and temperature.																						
<b>Week Ending</b>	28-04-2023																								
<b>Class</b>	B.S.8	<b>Class Size:</b>		<b>Duration:</b>																					
<b>Subject</b>	Science																								
<b>Reference</b>	Science Curriculum, Teachers Resource Pack, Learners Resource Pack, Textbook.																								
<b>Teaching / Learning Resources</b>	Poster, Pictures, Video, Power Point Presentation.		<b>Core Competencies:</b>	<ul style="list-style-type: none"> <li>• Critical thinking</li> <li>• Problem solving</li> <li>• Digital Literacy</li> <li>• Communication and Collaboration</li> </ul>																					
<b>DAY/DATE</b>	<b>PHASE 1 : STARTER</b>	<b>PHASE 2: MAIN</b>			<b>PHASE 3: REFLECTION</b>																				
<b>MONDAY</b>  24-04-2023	<p>Discuss the meanings of keywords and terminologies in the lesson.</p> <p><b>Keywords;</b></p> <ol style="list-style-type: none"> <li>1. Heat</li> <li>2. Temperature</li> <li>3. Hotness</li> <li>4. Coldness</li> <li>5. Joules</li> <li>6. Energy.</li> <li>7. calories</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss the differences between heat and temperature with the Learners.</li> <li>2. Assist learners to identify the uses of heat .</li> <li>3. Demonstrate how to measure the heat of an object with a formula.</li> <li>4. Learners brainstorm to measure heat of objects.</li> </ol> <div data-bbox="573 1451 1118 1814" data-label="Table"> <table border="1"> <thead> <tr> <th colspan="2">Difference between heat and temperature</th> </tr> <tr> <th>Heat</th> <th>Temperature</th> </tr> </thead> <tbody> <tr> <td>1. Heat is one form of energy. It is the thermal energy.</td> <td>1. Temperature is not an energy. It is the thermal state of a physical body (or system).</td> </tr> <tr> <td>2. Heat transfer is a reason behind temperature change</td> <td>2. Temperature variation can be the result of gain or loss of heat.</td> </tr> <tr> <td>3. Heat is exchangeable. It can flow from one body to another.</td> <td>3. Temperature is not exchangeable. Only heat can be exchanged.</td> </tr> <tr> <td>4. Total amount of heat present in a particular body cannot be measured. It can be measured only during flow or exchange.</td> <td>4. Temperature of a particular body can be measured. Moreover, temperature does not flow.</td> </tr> <tr> <td>5. Heat flow between two bodies do not rely on the amount of heat present in the bodies.</td> <td>5. It is the temperature that decides whether or not heat flow will occur between two bodies.</td> </tr> <tr> <td>6. Heat is not a fundamental property of matter.</td> <td>6. Temp. is fundamental property of the matter.</td> </tr> <tr> <td>7. Heat (similar to work) is not a property of thermodynamic system.</td> <td>7. Temperature is one property of thermodynamic system.</td> </tr> <tr> <td>8. Heat is a path function.</td> <td>8. Temperature is a point function.</td> </tr> </tbody> </table> </div>			Difference between heat and temperature		Heat	Temperature	1. Heat is one form of energy. It is the thermal energy.	1. Temperature is not an energy. It is the thermal state of a physical body (or system).	2. Heat transfer is a reason behind temperature change	2. Temperature variation can be the result of gain or loss of heat.	3. Heat is exchangeable. It can flow from one body to another.	3. Temperature is not exchangeable. Only heat can be exchanged.	4. Total amount of heat present in a particular body cannot be measured. It can be measured only during flow or exchange.	4. Temperature of a particular body can be measured. Moreover, temperature does not flow.	5. Heat flow between two bodies do not rely on the amount of heat present in the bodies.	5. It is the temperature that decides whether or not heat flow will occur between two bodies.	6. Heat is not a fundamental property of matter.	6. Temp. is fundamental property of the matter.	7. Heat (similar to work) is not a property of thermodynamic system.	7. Temperature is one property of thermodynamic system.	8. Heat is a path function.	8. Temperature is a point function.	<p>Through questions and answers, conclude the lesson.</p> <p><b>Exercise;</b></p> <ol style="list-style-type: none"> <li>1. Tabulate 3 difference between Heat and Temperature.</li> <li>2. Explain 2 uses of heat.</li> </ol>
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Heat	Temperature
<p>i. Heat is a form of internal energy obtained due to random motion and attractive force of molecules in a substance.</p> <p>ii. Its S.I. unit is joule (J).</p> <p>iii. It is measured by the principle of calorimetry.</p>	<p>i. Temperature is the quantity which determines the direction of flow of heat between two bodies at different temperatures kept in contact.</p> <p>ii. Its S.I. unit is kelvin (K).</p> <p>iii. It is measured by a thermometer.</p>

**THURSDAY**  
  
27-04-2023

Review Learners knowledge on the previous lesson.

- Learners brainstorm to identify 3 sources of heat.
  - Discuss 5 properties of heat with the Learners.
  - Assist Learners to explain 4 types of heat.
- Sources of Heat;**
- Sun.
  - Earth.
  - Chemical energy.
  - Electrical energy.
  - Atomic energy.
  - Air.

Reflect on the uses of Heat.

**Exercise;**

- State 3 sources of heat.
- Explain 5 properties of heat.
- Mention 4 types of heat and explain.



**Properties of Heat;**

- Thermal conductivity
- Density
- Viscosity
- melting point/glass transition temperature
- heat capacity.

**Uses of Heat;**

- Heat is used to make things warm, to boil water and fry eggs and to melt metal to build cars.
- Heat is used to generate electricity at a thermal power plant for our daily lives.
- Temperature is the measure of how hot or cold matter is.



**Types of Heat Transfer**

**Conduction**



Touching a hot pot

**Radiation**



The Sun's heat rays

**Convection**



Convection currents under the Earth's surface

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**FRIDAY**

28-04-2023

Discuss with Learners the properties of temperature.

1. Using PowerPoint Presentation, explain 3 types of temperature.
2. Learners in small groups to discuss 5 uses of Temperature.
3. Discuss the relationship between Heat and Temperature with the Learners.

**Temperature;**

Temperature is a physical quantity that expresses quantitatively the perceptions of hotness and coldness. Temperature is measured with a thermometer. Thermometers are calibrated in various temperature scales that historically have relied on various reference points and thermometric substances for definition.

Through questions and answers, conclude the lesson.

**Exercise;**

1. Explain 3 types of Temperature.
2. Write 5 uses of Temperature

**Types of Temperature;**

- Fahrenheit (expressed as °F)
- Celsius (°C)
- Kelvin (K).

**Temperature**

- Temperature is a measure of how hot or cold something is using a **thermometer**
- There are four types of temperature scales:
  - Metric = **Celsius**
  - SI = **Kelvin**
  - English = **Fahrenheit** and **Rankine**  
Commonly used in US for weather  
Used in aerospace industry.  
(English equivalent to Kelvin scale)

**Name of Teacher:**

**School:**

**District:**