

# FIRST TERM

## WEEKLY LESSON NOTES

### WEEK 7

<b>Week Ending:</b> 17-11-2023	<b>Day:</b>	<b>Subject:</b> Career Technology (PT)													
<b>Duration:</b> 60MINS		<b>Strand:</b> Materials For Production													
<b>Class:</b> B9	<b>Class Size:</b>	<b>Sub Strand:</b> Resistant Materials													
<b>Content Standard:</b> B9.2.2.1 Demonstrate skills in selecting resistant materials for making products/artefacts		<b>Indicator:</b> B9.2.2.1.1: Discuss the factors that influence the selection of resistant materials	<b>Lesson:</b> 1 of 2												
<b>Performance Indicator:</b> Learners can identify the properties of compliant materials and understand safe practices when working with tools/equipment.		<b>Core Competencies:</b> Communication and Collaboration (CC), Critical Thinking and Problem Solving (CP), Creativity and Innovation													
<b>Reference:</b> Career Technology Curriculum Pg. 83															
<b>New words:</b> Resistant, Materials, Properties, Safety, Tools															
<b>Phase/Duration</b>	<b>Learners Activities</b>		<b>Resources</b>												
<b>PHASE 1: STARTER</b>	<p>Begin with a scenario-based question: "Imagine you're designing a bridge to withstand extreme weather conditions.</p> <p>What materials would you consider using, and why?" Encourage learners to share their initial thoughts.</p> <p>Share performance indicators with learners.</p>														
<b>PHASE 2: NEW LEARNING</b>	<p>Start by reviewing the concept of resistant materials, discussing their properties, and the safe practices for working with tools and equipment when handling these materials.</p> <table border="1"> <thead> <tr> <th>Resistant Materials</th> <th>Properties</th> </tr> </thead> <tbody> <tr> <td>Rubber</td> <td>Elasticity, good resistance to abrasion, and weather resistance. Rubber is used in tires, seals, and various vibration-damping applications.</td> </tr> <tr> <td>Polyethylene</td> <td>Chemical resistance, lightweight, and low moisture absorption. It's used in various applications, including plastic containers, pipes, and liners for chemical tanks.</td> </tr> <tr> <td>Fiberglass</td> <td>High tensile strength, corrosion resistance, and lightweight. It's used in boat hulls, automotive parts, and building materials.</td> </tr> <tr> <td>PVC</td> <td>Good chemical resistance, electrical insulation, and low moisture absorption. PVC is widely used in plumbing, electrical cables, and construction materials.</td> </tr> <tr> <td>Ceramic Materials</td> <td>High-temperature resistance, excellent electrical insulating properties, and resistance to wear and corrosion. Ceramics are used in ball bearings, cutting tools, and as insulators in electronics.</td> </tr> </tbody> </table>		Resistant Materials	Properties	Rubber	Elasticity, good resistance to abrasion, and weather resistance. Rubber is used in tires, seals, and various vibration-damping applications.	Polyethylene	Chemical resistance, lightweight, and low moisture absorption. It's used in various applications, including plastic containers, pipes, and liners for chemical tanks.	Fiberglass	High tensile strength, corrosion resistance, and lightweight. It's used in boat hulls, automotive parts, and building materials.	PVC	Good chemical resistance, electrical insulation, and low moisture absorption. PVC is widely used in plumbing, electrical cables, and construction materials.	Ceramic Materials	High-temperature resistance, excellent electrical insulating properties, and resistance to wear and corrosion. Ceramics are used in ball bearings, cutting tools, and as insulators in electronics.	Pictures and charts of compliant materials
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<p><b>PHASE 3: REFLECTION</b></p>	<p>Emphasize the importance of safety in material selection and use.</p> <p>Discuss the various factors that influence the selection of resistant materials, such as purpose/function of the product, environmental conditions, durability, cost, and availability.</p> <p>Engage learners in a group discussion where each group is tasked with exploring one of these factors in more detail.</p> <p>Divide the class into small groups, and assign each group one of the factors influencing material selection.</p> <p>In their groups, learners should brainstorm and share examples of situations where their assigned factor is crucial in selecting resistant materials.</p> <p>Encourage learners to think critically and apply the knowledge they have gained.</p> <p>Demonstrate the processes involved in working with resistant materials, such as cutting, shaping, joining, and finishing.</p> <p>Highlight the importance of choosing the right tools and techniques for the specific material and its intended use.</p> <p><u>Assessment</u></p> <ol style="list-style-type: none"> <li>1. How does the purpose or function of a product influence the choice of resistant materials? Give an example.</li> <li>2. Discuss the factors to consider when ensuring the durability of a resistant material in a product.</li> <li>3. What safety measures should be taken into account when working with resistant materials and tools?</li> </ol> <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>			

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<b>Content Standard:</b> B9.2.2.1 Demonstrate skills in selecting resistant materials for making products/artefacts	<b>Indicator:</b> B9.2.2.1.2: Discuss the reasons why resistant materials require particular techniques and tools for their safe handling and use	<b>Lesson:</b> 1 of 2
<b>Performance Indicator:</b> Learners can identify the properties of compliant materials and understand safe practices when working with tools/equipment.		<b>Core Competencies:</b> Communication and Collaboration (CC), Critical Thinking and Problem Solving (CP), Creativity and Innovation
<b>Reference:</b> Career Technology Curriculum Pg. 86		
<b>New words:</b> Compliant, Materials, Properties, Safety precautions		
<b>Phase/Duration</b>	<b>Learners Activities</b>	<b>Resources</b>
<b>PHASE 1:</b> <b>STARTER</b>	<p>Begin with a simple question: "Why do you think it's important to use the right tools and techniques when working with materials like wood, metal, or plastic?"</p> <p>Allow learners to share their thoughts briefly.</p> <p>Share performance indicators with learners.</p>	
<b>PHASE 2:</b> <b>NEW LEARNING</b>	<p>Explain the importance of using specific techniques and tools when working with resistant materials.</p> <p>Emphasize that using the wrong tools or techniques can lead to accidents, damage to materials, and inefficiency.</p> <p>Discuss the concept of tool-material compatibility. Explain that different materials require specific tools because of variations in hardness, texture, and other properties.</p> <p>Use examples like saws designed for woodwork and cutting metals and the potential consequences of using the wrong tools.</p> <p>Connect safety precautions to specific processes involved in working with resistant materials when creating an artifact.  E.g. - When planning wood, check that the plane is sharp and correctly set.  - When using sharp edged tools, always keep both hands behind the cutting edge.  - Fix the hacksaw blade such that the teeth point away from the handle/operator.</p> <p>Provide examples of safety measures such as ensuring tools are sharp and correctly set, keeping hands behind cutting edges, and fixing hacksaw blades properly.</p>	Pictures and charts of compliant materials

	<p>Encourage a learner-centered discussion on the consequences of using the wrong tools or techniques and the benefits of following safety precautions.</p> <p>In small groups, learners can discuss scenarios where they would work with resistant materials and the correct tools and safety precautions to use.</p> <p><u>Assessment</u></p> <ol style="list-style-type: none"> <li>1. Why is it important to use the right tools for specific resistant materials? Provide an example.</li> <li>2. Discuss the potential consequences of using the wrong tools or techniques when working with resistant materials.</li> <li>3. Name two safety precautions related to working with resistant materials, and explain why they are important.</li> <li>4. In the context of your group discussions, share a scenario where tool-material compatibility and safety precautions are essential when working with resistant materials.</li> </ol>	
<p><b>PHASE 3: REFLECTION</b></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>	