

# FIRST TERM

## WEEKLY LESSON NOTES

### WEEK 5

<b>Week Ending:</b> 03-11-2023	<b>Day:</b>	<b>Subject:</b> Career Technology (HE)
<b>Duration:</b> 60MINS		<b>Strand:</b> Health & Safety
<b>Class:</b> B9	<b>Class Size:</b>	<b>Sub Strand:</b> Environmental Health
<b>Content Standard:</b> B9.1.3.2 Demonstrate understanding of clean energy, and Improved Cookstoves (ICS) and their accompanying fuels		<b>Indicator:</b> B9.1.3.2.1: Discuss what is meant by clean energy and improved cookstoves and fuels.
		<b>Lesson:</b> 2 of 2
<b>Performance Indicator:</b> Learners can comprehend what is meant by improved cookstoves and cleaner fuels, and recognize their advantages.		<b>Core Competencies:</b> CP 6.5: CI 5.4: CI 5.2: CI 6.10:
<b>Reference:</b> Career Technology Curriculum Pg. 82		
<b>New words:</b> Clean Energy, Renewable, Cookstoves, Emissions		
<b>Phase/Duration</b>	<b>Learners Activities</b>	<b>Resources</b>
<b>PHASE 1: STARTER</b>	<p>Display two images side by side: one showing traditional open-fire cooking and the other depicting solar panels or wind turbines.</p> <p>Ask learners: "How do these images relate to energy? What might be the differences in the type of energy they represent?"</p> <p>Share performance indicators with learners.</p>	
<b>PHASE 2: NEW LEARNING</b>	<p>Guide learners to explain what is meant by clean energy. E.g., It is energy produced through means that do not pollute the atmosphere.</p> <p>Have learners identify improved cookstoves and fuels</p> <p>Engage learners to watch pictures and videos on improved cookstoves and fuels and traditional cookstoves and fuels and make comparison of them. Note: Visit the website <a href="https://www.ghacco.org">https://www.ghacco.org</a> for more information.</p> <p>Lead learners to discuss what happens when clean energy is used. E.g., They are more efficient, give off less emission and are safer than the traditional cook stoves or three-stone-fires.</p> <p>Learners in their groups search and present in class, the various improved cookstoves and fuels using ICT tools and other sources. E.g., Gyapa, holy cook, gas stoves, pellets, briquettes, Liquefied Petroleum Gas (LPG).</p>	Pictures of cookstoves

	<p><u>Assessment</u></p> <p>How does clean energy differ from traditional energy sources?  Why is there a push towards using cleaner fuels in cookstoves?  Name one type of improved cookstove and its advantage.  What is one significant benefit of transitioning to clean energy?</p>	
<p>PHASE 3:  <b>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>	

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<b>Content Standard:</b> B9.1.3.2 Demonstrate understanding of clean energy, and Improved Cookstoves (ICS) and their accompanying fuels		<b>Indicator:</b> B9.1.3.2.2: Discuss the benefits of improved cookstoves and fuels.
<b>Performance Indicator:</b> Learners can understand the advantages of using improved cookstoves and cleaner fuels and recognize the various types of improved cookstoves and their uses.		<b>Lesson:</b> 2 of 2
<b>Reference:</b> Career Technology Curriculum Pg. 83		<b>Core Competencies:</b> CP 6.5: CI 5.4: CI 5.2: CI 6.10:
<b>New words:</b> Cookstoves, Efficiency, Emissions, Sustainable		

Phase/Duration	Learners Activities	Resources												
PHASE 1: <b>STARTER</b>	<p>Display pictures of traditional open-fire cooking methods and improved cookstoves.</p> <p>Ask learners: "What differences do you see between these cooking methods? Why might someone choose one method over the other?"</p> <p>Share performance indicators with learners.</p>													
PHASE 2: <b>NEW LEARNING</b>	<p>Brainstorm the benefits of improved cookstoves and fuels.</p> <p>Divide learners into small groups and provide each group with a chart paper and markers.</p> <p>Ask them to brainstorm and jot down the benefits of using improved cookstoves and cleaner fuels. Benefits might include health, environmental impact, efficiency, They save money, protect the cook and people around against illness, etc.</p> <p>After brainstorming, each group presents their list to the class.</p> <p>Demonstrate the uses of the following stoves. E.g. • improved cookstoves and fuels • traditional stoves.</p> <table border="1"> <thead> <tr> <th>Stove type</th> <th>Description</th> <th>Uses</th> </tr> </thead> <tbody> <tr> <td colspan="3">Improved Cookstoves</td> </tr> <tr> <td>Rocket Stoves</td> <td>These stoves are designed with an insulated vertical chimney that ensures complete combustion of fuel. It reduces the amount of smoke and emissions produced.</td> <td>They are primarily used for boiling and simmering. Can be used with a variety of biomass fuels including wood and agricultural residues.</td> </tr> <tr> <td>Gasifier Stoves</td> <td>These stoves use a process called</td> <td>Cooking various dishes, especially in regions</td> </tr> </tbody> </table>	Stove type	Description	Uses	Improved Cookstoves			Rocket Stoves	These stoves are designed with an insulated vertical chimney that ensures complete combustion of fuel. It reduces the amount of smoke and emissions produced.	They are primarily used for boiling and simmering. Can be used with a variety of biomass fuels including wood and agricultural residues.	Gasifier Stoves	These stoves use a process called	Cooking various dishes, especially in regions	Pictures of Cookstoves
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		gasification to convert solid biomass into a gaseous form before combustion. This process reduces harmful emissions.	where wood or biomass is the primary fuel source.
	Solar Cookers	Uses the sun's energy to cook food. It can either concentrate sunlight to produce heat or trap sunlight within an insulated box to cook.	Baking, boiling, and simmering food without the need for fuel. Suitable for sunny regions.
	LPG (Liquefied Petroleum Gas) Stoves	These stoves run on propane or butane. They produce a clean flame with minimal emissions.	Frying, boiling, simmering, and baking. They're used worldwide for a range of cooking needs and are particularly sought after for their clean and efficient burn.
	Traditional Stoves		
	Open Hearth or Indoor Open Fire	Essentially a contained open fire inside a dwelling, often without proper ventilation.	Basic cooking tasks but comes with significant health risks due to indoor air pollution.
	Charcoal Stoves	Made of metal or clay, these stoves burn charcoal as fuel. While they are more efficient than open fires, they still emit harmful fumes.	Frying, boiling, and other basic cooking tasks. Common in urban areas where wood is less available but charcoal can be purchased.
	Clay or Mud Stoves	Made from local materials, these are sometimes an upgrade from the three-stone fire but still emit a lot of smoke.	Boiling, simmering, and other basic cooking tasks. Common in rural parts of many developing countries.
	Three-Stone Fire	As the name suggests, it's a basic setup with three stones placed in a triangle, supporting a pot, with an open fire beneath.	General cooking needs. Predominantly used in rural areas due to its simplicity.
	Use real cookstoves, models, or pictures to show how each stove operates.		

	<p>Highlight the specific benefits of each stove type. If possible, demonstrate the difference in emissions or fuel efficiency between traditional methods and the improved stoves.</p> <p>In groups, plan and organize a campaign to educate the school and the community on the use and benefits of improved cookstoves.</p> <p><u>Assessment</u></p> <ol style="list-style-type: none"> <li>1. Why are improved cookstoves better for our health compared to traditional cooking methods?</li> <li>2. How do improved cookstoves benefit the environment?</li> <li>3. Name one type of improved cookstoves you learned about today.</li> <li>4. How can using cleaner fuels be more cost-effective in the long run?</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> <p>Emphasize the importance of transitioning to improved cookstoves and cleaner fuels, not just for individual health and savings but also for the broader environmental and societal benefits.</p>	