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TEACHER'S GUIDE FOR TANZANIA SCHOOLS

CLEAN COOKING WITH ELECTRONIC PRESSURE COOKER – EPC

ELECTRONIC PRESSURE COOKER PROGRAM FOR SCHOOLS
EPC4S

SUPPORTED BY



DEVELOPED BY



Developed by: NICE Consulting Tanzania

Funded by: UKAid from the UK Government through Sustainable Energy for All (SEforAll)

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Sustainable Energy for All (SEforALL) is an international organization that collaborates with governments, private sectors, and civil society to accelerate progress toward Sustainable Development Goal 7 (SDG7), which aims for universal access to sustainable energy by 2030. Achieving this goal requires a transformation in how energy is produced, distributed, and consumed, ensuring that no one is left behind.

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CHAPTER 1: INTRODUCTION

BACKGROUND- CONTEXT IN TANZANIA

Globally, over 2.1 billion people—including a significant share of Tanzania's population—lack access to clean cooking solutions and depend on traditional biomass fuels. This reliance poses severe health risks, particularly for women and children, contributing to more than 3.2 million premature deaths annually—exceeding fatalities from tuberculosis, malaria, and HIV/AIDS combined. Additionally, inefficient cooking methods drive deforestation and contribute significantly to carbon emissions, exacerbating environmental degradation, which also have additional consequences on mental health.

Recognizing these challenges, Tanzania has launched the National Clean Cooking Strategy 2024-2034, aiming to ensure that 80% of the population has access to clean cooking solutions by 2034. A key policy directive by President Samia Suluhu Hassan mandates that all public institutions serving over 100 people transition from firewood and charcoal to cleaner energy sources. This bold initiative highlights Tanzania's commitment to sustainable development and positions the country as a regional leader in advancing clean cooking solutions.

SCHOOLS AS A CATALYST FOR CHANGE

With over 17,686 government primary schools and more than 11 million students, schools in Tanzania serve as a powerful platform for driving the adoption of clean cooking solutions. A 2023 World Food Programme (WFP) survey revealed that approximately 9,200 schools operate feeding programs, with 99% still relying on firewood for cooking. However, nearly 5,600 of these schools are connected to the national electricity grid, creating a significant opportunity to introduce electric cooking (eCooking) solutions.

To accelerate this transition, **Sustainable Energy for All (SEforALL)** and **World Food Programme (WFP)** have partnered to implement an eCooking program in Tanzania, aligning with the government's commitment to eliminating polluting fuels in schools. This initiative not only enhances environmental sustainability and improves the health of direct users such as school cooks, but also serves as a model for similar programs worldwide.

Empowering Teachers as Agents of Change: For this initiative to succeed, teachers must be at the forefront of driving change within their schools and communities. As educators and role models, they have the unique ability to influence students, parents, and the broader society. To support this, the program will provide teachers with a comprehensive guide and practical tools to lead the transition to clean cooking. By equipping teachers with the necessary knowledge and resources, this initiative ensures a lasting impact, fostering a healthier and more sustainable future for Tanzania.

OBJECTIVE AND PURPOSE OF THE GUIDE

This teacher's guide is designed to help educators effectively teach students about clean cooking and the use of electric pressure cookers (EPCs). The guide begins by exploring broader topics such as climate, energy, and the environment before narrowing its focus on clean cooking methods. The objective is to equip teachers with the knowledge, tools, and methodologies to effectively communicate these concepts to students in Tanzania. By using engaging real-life examples, hands-on activities, and

interactive learning, teachers can inspire students to adopt sustainable energy practices in their daily lives.

THE ROLE OF TEACHERS IN THE TRANSITION AND CHANGE MANAGEMENT

Teachers play a crucial role in guiding students and communities through the transition from traditional cooking methods to clean cooking solutions. As educators, they are responsible for:

- **Raising Awareness:** Educating students on the environmental and health (both physical and mental) impacts of traditional cooking methods.
- **Encouraging Behavioral Change:** Inspiring students to become advocates for clean cooking in their homes and communities.
- **Facilitating Community Engagement:** Bridging the gap between schools and local communities to promote the adoption of clean cooking technologies.
- **Providing Hands-On Experience:** Demonstrating practical applications of clean cooking solutions in the school environment.
- **Supporting Government Initiatives:** Aligning with Tanzania's National Clean Cooking Strategy 2024-2034 to meet the goal of 80% clean cooking access nationwide.

CHAPTER 2: UNDERSTANDING CLIMATE, ENERGY, AND ENVIRONMENT

WHAT IS CLIMATE?

Definition of Climate and How It Differs from Weather

Climate refers to the long-term patterns of temperature, humidity, wind, and precipitation in a specific region, while weather describes short-term atmospheric conditions. For example, if it rains today, that is weather, but if a region experiences consistently heavy rainfall every year, that is climate. Unlike weather, which changes daily, climate describes the typical atmospheric conditions over many years.

Why is Climate Important?

- It influences agriculture, water supply, and living conditions.
- Changes in climate can affect health, economy, and biodiversity.

The Impact of Human Activities on Climate Change

Human activities such as deforestation, industrial emissions, and burning fossil fuels release greenhouse gases like carbon dioxide (CO₂), which trap heat in the atmosphere, leading to climate change. This results in rising temperatures, extreme weather events, and prolonged droughts, affecting water sources and agriculture.

How Human Activities Impact Climate

- **Deforestation:** Cutting down trees for firewood and charcoal reduces the earth's ability to absorb carbon dioxide. It also removes homes for animals which contribute to the natural regeneration of the ecosystem.
- **Burning Fossil Fuels:** Using coal, petrol, and gas for energy releases greenhouse gases, leading to global warming.
- **Industrial Pollution:** Factories release harmful gases that contribute to climate change.

Engaging Activity:

- **"Climate Detective" Game:** Show students images of various places before and after climate-related changes (e.g., shrinking glaciers, dried-up lakes, or deforested land). Ask them to discuss what may have caused these changes.

The Importance of Protecting Our Climate for Future Generations

A stable climate ensures fertile land, stable weather for farming, and abundant water sources. Without urgent action, younger generations will face food shortages, water scarcity, and more natural disasters. These, in turn, contribute to worsening mental and physical health. Protecting our climate means using clean energy, reducing waste, planting trees, and caring for our environment and its role in our lives.

Hands-on Activity:

- **"Green Pledge":** Have students write down one action they can take to protect the climate, such as using less plastic, not throwing trash in the streets, or planting a tree.

UNDERSTANDING ENERGY

Energy is the ability to do work, and it powers everything from homes and schools to industries and transportation.

Different Sources of Energy (Renewable vs. Non-Renewable)

Energy can be classified into two types:

1. **Renewable Energy:** Comes from natural sources that replenish over time, that do not run out such as:
 - **Hydropower:** Generating electric energy from water movement.
 - **Solar Energy:** Using the sun's rays to generate electricity.
 - **Wind Energy:** Using wind turbines to generate electricity.
 - **Biogas:** Using organic waste to produce gas for cooking and electricity.
2. **Non-renewable energy:** Comes from sources that take millions of years to form, such as coal, oil, and natural gas.

 **Real-Life Example:** Tanzania has abundant sunshine throughout the year, making solar energy and a lot of electricity from gas and water (hydroelectricity) a great alternative to firewood and charcoal for cooking in schools.

 Interactive Learning:

- **Energy Scavenger Hunt:** Ask students to identify different energy sources used in their homes and categorize them as renewable or non-renewable.

How Energy is Used in Cooking and Daily Life

Energy is used for cooking, lighting, transportation, and powering industries. In many Tanzanian households, firewood and charcoal are still the primary sources of cooking energy. However, alternatives such as electricity, biogas, and improved cookstoves can make cooking cleaner and more efficient.

 Demonstration:

- Bring or take the students to an electric cooker or bring an LPG cookstove to class and show how it works compared to traditional firewood cooking. Ask them what differences they see, sense, taste, smell, and feel between the two types of cooking. Use the 5 senses.

Why Sustainable Energy Sources are Important for Tanzania

Using renewable energy can:

- Reduce deforestation.
- Improve air quality.
- Lower cooking costs for families and schools.
- Create green jobs and boost the economy.
- Improve mental and physical health of communities.

 Class Discussion:

- Ask students: "What would happen if all the trees were cut down for firewood? How would it affect your community?"

THE ENVIRONMENT AND ITS PROTECTION**How Deforestation for Firewood Affects the Environment**

Cutting down trees for firewood leads to soil erosion, loss of wildlife habitats, and reduced rainfall. It also means less oxygen production and green spaces, making the air more dirty and dangerous for mental and physical health.

 Real-Life Example:

Some regions in Tanzania, like Dodoma and Singida, have experienced reduced rainfall and soil degradation due to excessive tree cutting.

 Activity:

- **Tree Planting Challenge:** Have students plant a tree at school or home and monitor its growth over time. Help them understand when the plant is being over or underwatered, and observe how it is impacted by its surroundings.

Pollution from Traditional Cooking Methods

Burning firewood and charcoal releases smoke and toxic gases that cause respiratory diseases, especially in women and children who spend more time near cooking fires.

 Demonstration:

- Burn a small piece of paper and ask students to observe the smoke and smell. Then, compare it to clean energy sources like a gas or electric stove.

The Benefits of Sustainable Environmental Practices

Switching to cleaner cooking solutions benefits the entire community by:

- Reducing indoor air pollution.
- Conserving forests.
- Lowering carbon emissions.
- Improving overall health and well-being.

 Final Reflection:

- Have students create posters showcasing the benefits of clean energy and display them in the school.

CHAPTER 3: INTRODUCTION TO CLEAN COOKING

WHAT IS CLEAN COOKING?

Definition and Importance of Clean Cooking

Clean cooking refers to using energy-efficient, environmentally friendly, and safe methods for preparing food. Unlike traditional methods that rely on firewood, charcoal, or kerosene, clean cooking technologies include solar cookers, LPG cookstoves, biogas, and electric cooking (eCooking). These methods significantly reduce exposure to harmful smoke and greenhouse gas emissions. Electricity from all sources has proven to be purely, highly and significantly exposed to no harmful smoke or greenhouse gases.

Real-Life Example:

In Tanzania, most schools often use firewood for cooking, causing both health and environmental problems. By switching to clean cooking technologies, such as electric cookers and specific EPC, students can benefit from healthier air and a cleaner environment.

Engaging Activity:

- **"Clean Cooking Show and Tell":** Show a variety of clean cooking technologies like an electric stove, LPG Stove, and an improved cookstove. Ask students to compare how each one works and discuss its benefits and advantages- Use the Picture for the items that are not in school.

Health Benefits of Using Clean Cooking Technologies

Traditional cooking methods release smoke that contains harmful particles, which can cause respiratory diseases, especially in women and children who spend long hours near the stove. Clean cooking technologies eliminate or reduce this harmful smoke, significantly improving indoor air quality and reducing health risks.

Real-Life Example:

A school in Zanzibar switched to an improved cookstove, reducing respiratory illnesses among students and staff. The cleaner air in the kitchen area improved attendance and overall well-being.

Hands-On Activity:

- **"Clean Air Experiment":** Light a small incense stick near a traditional stove and ask students to observe how the smoke affects their breathing. Then, compare this with a clean stove or solar cooker, showing how clean cooking improves air quality.

Economic and Environmental Benefits

Clean cooking technologies save families money by using less fuel. Over time, they reduce the amount spent on firewood or charcoal. Environmentally, these technologies produce fewer carbon emissions and require less deforestation, contributing to healthier forests and a better climate.

 Real-Life Example:

A family in Tanzania that switched to an improved cookstove found they saved money by using less charcoal, while also reducing the time spent collecting firewood, which freed up more time for other productive activities.

 Activity:

- **"Savings Calculator":** Use a simple calculator to demonstrate how much money a family can save in one year by switching to clean cooking, comparing the costs of firewood, charcoal, and cleaner alternatives like improved stoves or electric cooking.

CHALLENGES OF TRADITIONAL COOKING METHODS

Health Risks from Indoor Air Pollution

The smoke from burning firewood and charcoal contains harmful gases and particulate matter, which can lead to respiratory diseases, heart problems, and eye irritation. It's estimated that around **4 million people globally** die each year from illnesses caused by indoor air pollution from traditional cooking methods.

 Real-Life Example:

In rural areas of Tanzania, children who are exposed to smoke from cooking stoves are more likely to develop chronic respiratory problems, such as asthma or bronchitis.

 Interactive Discussion:

- Ask students: "What happens when you breathe in smoke? How do you think it affects your body?" Ask students how many of them suffer from a breathing condition. After the discussion, show a video or infographic about the harmful effects of indoor air pollution on health.

Deforestation Due to Firewood Collection

In many parts of Tanzania, firewood is the main cooking fuel. However, cutting down trees for firewood contributes to deforestation, soil erosion, and loss of biodiversity. Over time, this has devastating consequences for local ecosystems, reducing rainfall and affecting agriculture.

 Real-Life Example:

In areas like **Singida** and **Dodoma**, the growing demand for firewood has led to widespread deforestation, leaving communities with fewer trees for shade, fuel, and soil protection.

 Activity:

- **"Deforestation Simulation":** Set up a simple model of a forest with small plants or pictures of trees. Remove some of the trees and ask students to observe how the ecosystem changes. Discuss how deforestation impacts the environment and how using firewood contributes to this issue.

The High Cost of Charcoal and Firewood

For many households, the cost of firewood and charcoal is a significant burden. As wood resources become scarcer, prices increase, making it harder for families to afford fuel.

Real-Life Example:

In **urban areas** like Dar es Salaam, where firewood is often transported from rural regions, the cost of charcoal has risen dramatically, putting pressure on low-income families.

Interactive Learning:

- **"Price Comparison":** Have students research the cost of firewood and charcoal in their local area and compare it to the cost of electric cooking or biogas solutions. Use this data to discuss how switching to clean cooking methods can be more affordable in the long term.

BENEFITS OF CLEAN COOKING TECHNOLOGIES

Reduced Exposure to Harmful Smoke

One of the primary benefits of clean cooking technologies is the elimination or reduction of harmful smoke. With improved stoves, biogas, or electric cooking, families are less exposed to pollutants, leading to fewer respiratory illnesses and a cleaner home environment.

Real-Life Example:

A school in a rural area of Tanzania adopted an improved cookstove and saw a drastic reduction in the number of students and staff experiencing coughs or respiratory issues during the school year.

Hands-On Activity:

- **"Breathing Better" Simulation:** Have students take deep breaths in a smoke-free room and then again in a room with smoke. Make sure to not keep the children too long in the room with smoke. Discuss how cleaner cooking environments contribute to better health.

Efficient Use of Energy, Saving Money and Resources

Clean cooking technologies are energy-efficient, meaning they require less fuel to cook the same amount of food. This efficiency leads to cost savings for households and schools, freeing up resources for other essential needs.

Real-Life Example:

A school in a rural area of Tanzania that adopted electric cooking technology reduced its cooking costs by over 30%, allowing the savings to be used for other school activities.

Activity:

- **"Energy Efficiency Challenge":** Have students compare the energy consumption of traditional stoves with that of clean cooking methods. Use a simple experiment where they compare cooking times and fuel usage.

Lower Environmental Impact

Clean cooking technologies help protect the environment by reducing deforestation, lowering carbon emissions, and minimizing waste. By using renewable energy sources like solar, biogas, or electricity, communities can help combat climate change while improving their health and economy.

Real-Life Example:

In some parts of Tanzania, communities that switched to clean cooking technologies have helped restore local forests, improving biodiversity and water availability.

Activity:

- **"Eco-Impact Poster":** Ask students to create a poster illustrating the positive impact of clean cooking on the environment, showing how it helps preserve forests, reduce emissions, improve health, and promote sustainability.

CHAPTER 4: THE ROLE OF ELECTRIC PRESSURE COOKERS (EPCS) IN CLEAN COOKING

INTRODUCTION TO EPCS: WHAT IS IT? ITS ORIGIN, FEATURES, AND COMPONENTS

What is an Electric Pressure Cooker (EPC)?

An Electric Pressure Cooker (EPC) is a modern, energy-efficient kitchen appliance that uses electricity to cook food faster than conventional cooking methods, such as stoves or open fires. The EPC functions by trapping steam inside a sealed pot, building pressure to cook food more quickly and at a lower temperature, preserving nutrients and flavors.

Real-Life Example:

In many parts of Tanzania, people traditionally use firewood or charcoal to cook. However, the introduction of EPCs in urban and rural areas is transforming cooking practices. Schools and homes are shifting to EPCs, reducing the burden of gathering firewood and improving cooking efficiency.

The Origin of EPCs

Electric Pressure Cookers first became widely available in the mid-20th century and have since evolved with modern technology, becoming more energy-efficient, user-friendly, and affordable. The EPC is gaining popularity globally due to its ability to save time, energy, and reduce the need for traditional cooking fuels.

Key Features and Components of an EPC

1. **Cooking Pot:** The inner part of the EPC, made of stainless steel, where food is placed for cooking.
2. **Heating Element:** Provides heat to cook the food, powered by electricity.
3. **Pressure Valve:** Regulates and releases steam to maintain the correct cooking pressure.
4. **Control Panel:** The interface where users select cooking settings, including cooking time, temperature, and pressure levels.
5. **Sealing Ring:** Ensures that the lid is tightly sealed, trapping steam and pressure inside.

HOW EPCS WORK

The electric pressure cooker works by converting electrical energy into heat, which is then used to heat the food inside the sealed cooking pot. Here's a step-by-step guide to how an EPC functions:

1. **Preparing the Food:** Add food and cooking liquid (such as water or broth) into the EPC's cooking pot.
2. **Sealing the Lid:** Secure the lid of the EPC, making sure the sealing ring is in place.
3. **Setting the Cooking Time:** Use the control panel to select the desired cooking mode and time.

4. **Building Pressure:** As the EPC heats up, steam is generated, and pressure begins to build inside the cooking pot.
5. **Cooking Under Pressure:** The high-pressure environment accelerates the cooking process, making it faster and more efficient than traditional methods.
6. **Release the Pressure:** Once the cooking time is complete, the pressure valve is carefully released to ensure that it is safe to open the lid.

Hands-On Activity:

- o **"EPC Demonstration":** Have students watch a live demo or video of an EPC in use. Discuss the benefits of the EPC's cooking process and how it compares to traditional cooking methods.

ADVANTAGES OF USING AN EPC

General Advantages of EPCs

1. **Efficiency:** EPCs cook food much faster than traditional cooking methods. A meal that would take 45 minutes to cook on a stove might be ready in just 20-30 minutes using an EPC.
2. **Energy Savings:** EPCs use less energy than conventional cooking methods, as they require shorter cooking times and trap heat, reducing overall energy consumption.
3. **Convenience:** With preset programs, EPCs offer ease of use, allowing users to cook a variety of dishes with minimal effort and supervision.
4. **Flavor and Nutrition Retention:** The pressure-cooking method retains more nutrients and flavors in the food than boiling or frying.

Advantages Over Other Sources of Cooking Energy

1. **Efficiency:** EPCs are much more efficient compared to firewood or charcoal stoves because they cook food in less time and with less energy.
2. **Time-Saving:** EPCs significantly reduce cooking time, freeing up time for other activities.
3. **Cost-Effective:** Although the initial cost of an EPC may be higher than traditional stoves, the reduction in fuel costs (such as charcoal or firewood) and the energy efficiency make EPCs more affordable in the long run.
4. **Safety:** EPCs have built-in safety features like automatic pressure release and secure locking lids, minimizing the risk of burns or accidents.
5. **Cleaner Cooking Environment:** EPCs produce no smoke, unlike traditional methods, reducing indoor air pollution and health risks.

Real-Life Example:

In a school in Dar es Salaam, switching from traditional firewood stoves to electric pressure cookers has not only improved the cooking time but also helped the school save significantly on fuel costs, allowing them to invest in other school activities.

Interactive Activity:

- **"Time and Cost Comparison":** Have students compare the cooking time and fuel cost of a traditional stove (firewood or charcoal) versus an EPC by preparing a simple dish like rice. Record the time and energy used for both methods and discuss the differences.

Common Misconceptions and Myths About EPCs

1. **"EPCs are too complicated to use."**
 - **Reality:** EPCs are user-friendly with intuitive controls, making them easy to operate even for beginners.
2. **"EPCs use too much electricity."**
 - **Reality:** EPCs are more energy-efficient than traditional cooking methods. They use less electricity because they cook food faster and don't require constant monitoring.
3. **"EPCs can't cook traditional dishes."**
 - **Reality:** EPCs are versatile and can cook a variety of dishes, including traditional Tanzanian meals, such as rice, stews, and beans, with ease.

FEATURES OF AN EPC

Energy Efficiency

Electric pressure cookers are designed to use less energy than conventional cooking methods. They cook food in a sealed environment, which means they require less heat to cook food faster. This not only saves time but also reduces the energy required to prepare meals.

Interactive Activity:

- **"Energy Efficiency Test":** Ask students to calculate the energy savings of using an EPC over a traditional stove for a week of cooking. Compare electricity consumption with the cost of firewood or charcoal used for the same time period.

Safety Mechanisms

EPCs come with built-in safety features like pressure release valves, secure locking mechanisms, and automatic shut-off features that ensure the device operates safely. This makes them safer than traditional stoves, especially for schools and homes with children.

Real-Life Example:

In a cooking school in Tanzania, after transitioning to EPCs, the number of cooking-related accidents, such as burns from hot stoves, decreased by over 50%, demonstrating the improved safety of using EPCs.

Cooking Versatility and Ease of Use

EPCs are incredibly versatile and can cook a wide range of foods—from soups and stews to rice and vegetables. They can even be used for steaming, slow cooking, and sautéing, making them ideal for diverse cooking needs.

Hands-On Activity:

- **"Recipe Creation with EPCs":** Have students brainstorm recipes that could be prepared with an EPC, highlighting the different cooking functions it offers. They can also prepare a simple meal using an EPC, such as a vegetable stew or rice dish.

COMPARISON BETWEEN EPCS AND TRADITIONAL COOKING METHODS

Feature	Traditional Cooking	Others – LPG Stove, Improved Stove	Electric Pressure Cooker
Energy Source	Firewood, Charcoal	LPG (Liquefied Petroleum Gas), Improved Biomass Stoves	Electricity
Cooking Time	Long (45+ minutes)	Moderate (30-45 minutes)	Short & Efficient (20-30 minutes)
Smoke Emission	High (due to incomplete combustion of biomass)	Low to Moderate (depending on stove type and fuel efficiency)	None (electric cooking produces no smoke)
Health Impact	Respiratory Issues (due to smoke inhalation), Burns (open flames)	Reduced Respiratory Issues (compared to traditional cooking), Risk of Burns	Safe & Healthy (no smoke, reduced risk of burns)
Environmental Impact	High (deforestation, carbon emissions, air pollution)	Moderate (LPG emits CO ₂ but less than firewood; improved stoves reduce emissions)	Low (depends on electricity source; renewable energy makes it eco-friendly)
Cost	Low initial cost -for set Up High Running Cost (firewood/charcoal is Costly Monetary)	Moderate (LPG refills- Higher Cost) and stove maintenance costs)	Higher initial cost (appliance purchase), but lower operating costs over time
Ease of Use	Labor-intensive (collecting firewood, lighting fire, constant monitoring)	Easier (quick ignition, adjustable flame)	Very Easy (set timer and forget; automated cooking)
Portability	Not portable (can't be used anywhere with firewood)	Not Portable (LPG stoves are lightweight and movable)	Portable- All in One (requires electricity source)
Maintenance	High (regular cleaning of soot, ash disposal)	Moderate (cleaning required, occasional LPG cylinder replacement)	Low (easy to clean, minimal maintenance)
Safety	Low (open flames, risk of fire, burns, and smoke inhalation)	Moderate (risk of gas leaks or burns if not handled properly)	High (automatic shut-off, no open flames, safer for children and elderly)
Cooking Quality	Not Consistent (smoky taste not preferred in some cuisines)	Consistent and controlled cooking	Consistent and efficient (retains nutrients and flavors well)
Energy Efficiency	Low (much of the heat is lost to the environment)	Moderate to High (depending on stove design and fuel efficiency)	High (most of the energy is used for cooking, minimal waste)
Cultural Preference	Strong (traditional methods are deeply rooted in many cultures)	Growing acceptance (modern and convenient)	Increasingly popular (especially in urban areas for convenience and speed)

Be the Change you want to see – Sustainable Clean Cooking

CHAPTER 5: PRACTICAL LESSONS ON USING AN ELECTRIC PRESSURE COOKER (EPC)

LESSON 1: INTRODUCTION TO THE EPC

Demonstrating the Different Parts of the EPC

In this lesson, students will get a hands-on introduction to the Electric Pressure Cooker (EPC) by learning about its various components and how they work together. Understanding these parts is essential for using the EPC safely and efficiently.

Key Parts of an EPC:

1. **Lid:** The airtight cover of the cooker, which locks in place when cooking.
2. **Control Panel:** The interface that allows the user to select cooking programs and set time and pressure levels. It's typically equipped with buttons for different cooking modes like rice, beans, stew, and meat.
3. **Pressure Valve:** Regulates the amount of pressure inside the cooker. It releases excess steam to keep the pressure within safe limits.
4. **Inner Pot:** The removable vessel where food is placed and cooked.
5. **Heating Element:** The part that heats the cooker to generate steam and build pressure.
6. **Steam Release Button:** Allows users to safely release steam at the end of cooking, preventing accidents.
7. **Handle and Locking Mechanism:** Keeps the lid secure during cooking and ensures safety.

Interactive Activity:

- **"EPC Component Scavenger Hunt":** Have students explore the EPC and identify each part listed above. Students can work in pairs to label and explain each component's function. Afterward, they can discuss how each part contributes to the efficiency and safety of the EPC.

Understanding the Control Panel and Settings

The control panel of an EPC is user-friendly and designed for various cooking tasks. It typically has several buttons that correspond to cooking functions such as "Rice," "Stew," "Soup," and "Meat." Each of these settings automatically adjusts time and pressure based on the food being prepared.

Hands-On Activity:

- **"Control Panel Demo":** Show students how to navigate the control panel by selecting different cooking modes. For example, demonstrate how to set the cooking time for rice and beans. Allow students to practice setting the panel themselves. Discuss the importance of using the correct setting for different types of food.

Real-Life Example:

In many Tanzanian households, students have seen their parents struggle with cooking traditional meals on stoves that require constant attention. With the EPC, the press of a button ensures meals are prepared efficiently, allowing families to focus on other tasks.

LESSON 2: COOKING WITH AN EPC

Step-by-Step Guide on Cooking Common Tanzanian Meals

This lesson will walk students through cooking common Tanzanian dishes like rice, beans, or vegetables using the EPC. By cooking these meals, students will understand how easy it is to use an EPC and experience firsthand how much time and energy it saves compared to traditional methods.

Step-by-Step Cooking Process:

1. **Rice:**
 - **Ingredients:** 1 cup of rice, 1 ½ cups of water, salt (optional).
 - **Method:**
 1. Add rice and water to the EPC's inner pot.
 2. Lock the lid and set the control panel to the "Rice" setting.
 3. Once the cooking cycle finishes, carefully release the steam using the steam release valve.
 4. Open the lid and fluff the rice with a fork.
2. **Beans (with coconut milk):**
 - **Ingredients:** 2 cups of beans, 4 cups of water, coconut milk, salt, and seasoning.
 - **Method:**
 1. Add soaked beans, water, and coconut milk to the inner pot.
 2. Set the EPC to the "Beans" setting.
 3. After cooking, allow the EPC to release pressure naturally, then open the lid and serve.

Comparing Cooking Time and Energy Use with Other Methods

One of the key benefits of using an EPC is the reduction in both cooking time and energy consumption. In this lesson, students will compare how long it takes to cook the same dishes using traditional methods versus using an EPC.

- **Rice:**
 - **Traditional Cooking:** Approximately 30 minutes (if using a stove and pot).
 - **EPC Cooking:** 10-15 minutes.
- **Beans:**
 - **Traditional Cooking:** 1 hour or more (if using a stove and pot).
 - **EPC Cooking:** 30-40 minutes.

 Activity:

- **"Time and Energy Comparison":** Have students measure the time it takes to cook rice or beans using both traditional methods and an EPC. They can track energy consumption (if possible) by comparing the energy use of a stove versus an EPC. Afterward, ask students to reflect on how the EPC saves time and reduces the need for fuel.

 Real-Life Example:

A local school in Tanzania switched to using EPCs for their meals and reported significant time and fuel savings. Students were able to get meals faster, and the kitchen staff didn't have to deal with the mess and inefficiency of traditional cooking.

LESSON 3: SAFETY AND MAINTENANCE

Safe Handling of an EPC

While EPCs are safe to use, it's essential to follow proper safety guidelines to avoid accidents. Understanding how to handle the EPC safely ensures a smooth cooking experience for everyone.

Key Safety Tips:

1. **Before Cooking:** Always check the sealing ring and ensure the lid is securely locked before starting the cooking cycle.
2. **During Cooking:** Never attempt to open the lid while the cooker is pressurized. Wait until the pressure has been released.
3. **Releasing Steam:** Use the steam release valve carefully to avoid burns from hot steam.
4. **Handling Hot Food:** Always use oven mitts when handling the inner pot after cooking, as it can be hot.
5. **Keep the Area Dry:** Ensure the power cord and control panel remain dry to avoid electric shocks.

 Activity:

- **"Safety Role Play":** Divide students into groups and have them role-play the steps of using an EPC safely. One group can act out how to safely release steam, while another demonstrates how to securely close the lid. Afterward, have students discuss what could go wrong if safety precautions aren't followed.

 Real-Life Example:

In a Tanzanian cooking school, instructors emphasize safety when using EPCs. One incident occurred where a student mistakenly tried to open the lid too early. Since the instructor had explained safety protocols beforehand, the student was able to safely release the pressure without injury.

How to Clean and Maintain an EPC

Proper cleaning and maintenance of an EPC ensure its longevity and efficient operation. It's important to clean the cooker after every use to prevent food residue from building up and to ensure it works properly.

Cleaning and Maintenance Tips:

- **Turn off the Cooker:** Always ensure the EPC is turned off and unplugged before cleaning.
- **Remove the Inner Pot:** Wash the inner pot with warm, soapy water. The inner pot is usually dishwasher safe for easy cleaning.
- **Clean the Lid and Pressure Valve:** Use a soft cloth or sponge to clean the lid and pressure valve. Avoid using harsh chemicals.
- **Check the Sealing Ring:** Regularly inspect the sealing ring for any wear and tear. Replace it if necessary to maintain a tight seal during cooking.
- **Wipe the Exterior:** Clean the outer surface of the EPC with a damp cloth. Avoid getting moisture in the control panel or electrical parts.

Activity:

- **"Cleaning Race":** Have students work in pairs to clean an EPC after cooking. They will race to see who can clean the appliance the quickest while still following all safety and maintenance steps correctly. This activity reinforces the importance of regular cleaning and care.

Real-Life Example:

In a rural Tanzanian community, families that regularly clean and maintain their EPCs have reported a longer lifespan for the appliances. They also avoid issues like pressure leaks, ensuring that the EPC remains safe and effective for daily use.

By engaging students with hands-on activities, real-life examples, and discussions on the safety, efficiency, and benefits of EPCs, these lessons will not only help them learn how to use the technology but also inspire them to incorporate clean cooking methods into their daily lives. Through interactive experiences, students will better appreciate the importance of sustainable cooking practices in improving health, saving energy, and protecting the environment.

CHAPTER 6: TEACHING STRATEGIES FOR DIFFERENT AGE GROUPS

Effective teaching strategies can help students of different age groups understand the importance of clean cooking, sustainable energy, and environmental preservation. This chapter will outline strategies that teachers can use to engage younger and older students in understanding these crucial topics through interactive learning, real-life examples, and hands-on activities.

FOR YOUNGER STUDENTS (AGES 6-12)

Use of Storytelling to Explain Environmental Issues

Storytelling is a powerful tool for younger students. By using relatable characters and simple narratives, teachers can explain complex environmental concepts in a way that is accessible and engaging for children.

Activity:

- **"The Journey of Smoke":** Tell a story about a child who lives in a village where their family uses firewood for cooking. The child learns about the dangers of smoke and how their family switches to clean cooking technology, like an electric pressure cooker (EPC). The story could include descriptions of the child feeling healthier, the environment improving, and the family saving time and energy. After the story, have students discuss how switching to clean cooking would affect their own lives and families.

Real-Life Example:

- **"Nia's Story":** In a rural Tanzanian village, a young girl named Nia noticed how her mother always had a cough from the smoke in their kitchen. Nia's school then introduced clean cooking technologies, and soon after, her family switched to an electric cooker. Nia noticed the difference in how they felt and how the environment around them looked cleaner.

SIMPLE EXPERIMENTS ON CLEAN VS. SMOKY AIR

Experiments help children visualize and understand the concepts they are learning. Simple, hands-on experiments are ideal for younger students to show the impact of smoke on air quality and health.

Activity:

- **"The Balloon Experiment":** Fill a balloon with air from a smoky area (such as around a burning fire or charcoal) and another with clean air (from outside or a well-ventilated room). Let the students compare the balloons to see which one smells and feels different. Discuss the importance of clean air for health and the environment.
- **"Smoke vs. Fresh Air":** Use two transparent jars and two cotton balls. Soak one cotton ball in smoke (you can use incense or a piece of burning paper) and the other in clean air. Ask students to observe how the cotton ball in smoke turns brown and becomes dirty, while the one in clean air remains white. This visual experiment helps them understand the negative effects of smoke.

Real-Life Example:

- A family in a Tanzanian village who used to cook with firewood now uses a clean cookstove. Their children noticed the improvement in the air quality and no longer felt the effects of smoke when playing outside.

HANDS-ON ACTIVITIES SUCH AS DRAWING POSTERS ABOUT CLEAN COOKING

Art is a great way for younger students to express what they have learned and internalize key concepts. Drawing activities can be a fun way to reinforce the idea of clean cooking and a healthier environment.

Activity:

- **"Poster Design Contest":** Ask students to draw posters that showcase the benefits of clean cooking. The posters can include visuals of clean stoves, happy families, and clean air. Encourage students to include slogans like "Breathe Easy, Cook Clean" or "Save Trees, Cook Clean." Display the posters around the school to raise awareness among the wider community.

Real-Life Example:

- In schools across Tanzania, students have participated in poster campaigns promoting clean cooking methods. The posters were displayed in local shops, public spaces, and community centers to spread the word.

FOR OLDER STUDENTS (AGES 13-18)**Classroom Discussions and Debates on Clean Energy**

For older students, discussions and debates are an excellent way to engage them with the complexities of energy use, the environment, and health. Encouraging critical thinking about the pros and cons of clean cooking will help them make informed decisions in the future.

Activity:

- **"Debate on Clean Cooking":** Organize a debate where students are divided into two groups: one supporting the use of traditional cooking methods and the other advocating for clean cooking technologies. Students can research and prepare their arguments, addressing topics such as health risks, environmental impact, and economic factors. This will help them understand the broader implications of cooking practices on their health and environment.

Real-Life Example:

- At a Tanzanian high school, students debated the environmental and health impacts of traditional cooking methods compared to clean cookstoves. The debate helped students recognize how sustainable energy solutions could positively impact their own communities.

CASE STUDIES ON THE IMPACT OF CLEAN COOKING IN TANZANIA

Case studies allow students to examine real-world situations and see the tangible benefits of adopting clean cooking technologies. This helps them understand the relevance of clean cooking in their own lives.

Activity:

- **"Case Study Review":** Present a case study of a village in Tanzania that transitioned from using firewood and charcoal to electric cooking technologies. Students can analyze the case study and answer questions such as:
 - What were the health benefits of switching to clean cooking?
 - How did the environment improve after adopting clean cooking methods?
 - What were the financial savings for the families in the village?
- After the case study review, engage students in a discussion about how such changes could be implemented in other parts of Tanzania or their own communities.

Real-Life Example:

- A Tanzanian community that switched to electric cooking methods reduced the amount of time spent collecting firewood, improved air quality, and saw a reduction in respiratory illnesses. Students can research similar stories from other parts of Africa or the world.

RESEARCH PROJECTS ON SUSTAINABLE COOKING METHODS

Older students can deepen their understanding of clean cooking technologies through research. They can explore the different types of clean cooking methods, how they work, and their impact on health and the environment.

Activity:

- **"Research Project":** Assign students to research different clean cooking methods, such as electric pressure cookers, improved cookstoves, or biogas stoves. They should focus on:
 - How these technologies work.
 - The benefits of each method.
 - The challenges and opportunities for implementing these technologies in Tanzania.
 - Compare the environmental, economic, and health impacts of each method.
- **Project Presentation:** Have students present their findings to the class. This activity can involve visual aids, demonstrations (if applicable), and even a "technology fair" where students showcase the technologies they researched.

Real-Life Example:

- Tanzanian students at a vocational school researched clean cooking technologies and presented their findings to local community leaders. This led to discussions about implementing clean cooking in their village and the surrounding areas.

By tailoring these strategies to the appropriate age groups, teachers can engage students in learning about clean cooking, sustainable energy, and the environment. Younger students can benefit from stories, experiments, and hands-on activities, while older students can explore more complex topics through discussions, research, and case studies. These interactive, real-life examples will empower students to become advocates for sustainable energy practices in their communities.

CHAPTER 7: CLASSROOM ACTIVITIES AND EXPERIMENTS

Classroom activities and experiments play a crucial role in helping students internalize the concepts of clean cooking, sustainable energy, and environmental preservation. This chapter provides interactive activities that allow students to explore the real-life impact of cooking practices on health, energy efficiency, and the environment. By actively engaging in these experiments and activities, students can gain a deeper understanding of how their choices affect the world around them.

ACTIVITY 1: THE SMOKE TEST

Objective:

To help students understand the difference in air quality between traditional cooking methods (using firewood or charcoal) and clean cooking technologies (such as electric pressure cookers).

Materials Needed:

- Incense or burning paper to simulate smoke.
- Two transparent containers or jars.
- A fan to simulate ventilation (optional).
- Air quality measurement tools (e.g., air quality index app, if available).

Procedure:

1. Setting Up the Experiment:

Set up two stations in the classroom. In the first station, burn some incense or a small piece of paper to simulate the smoke produced by traditional cooking methods (like firewood or charcoal). In the second station, place an electric pressure cooker (EPC) or any other clean cooking technology, but leave it unpowered to show that it doesn't produce any smoke.

2. Demonstrating Smoke and Air Quality:

Ask students to observe the air around the burning incense or paper. Discuss how the smoke fills the room and the impact it would have on indoor air quality. Then, compare this to the EPC station, where no smoke is produced.

3. Engage Students:

Allow students to test the air quality with a tool or simply by using their senses (smell, visibility, and breath). Discuss how breathing in the smoke from traditional methods can cause health issues, like respiratory problems. Ask them to compare the air quality in both stations and discuss the findings.

4. Real-Life Example:

- **Community Impact:** In Tanzanian villages where families primarily use firewood for cooking, people often experience respiratory issues like coughing and shortness of breath, especially children and the elderly. The introduction of clean cooking technologies significantly improves air quality and reduces these health risks.

Discussion:

- Why is it important to reduce indoor smoke in homes?
- How does smoke from traditional cooking methods affect health over time?
- How can we encourage families to switch to clean cooking?

ACTIVITY 2: ENERGY EFFICIENCY EXPERIMENT**Objective:**

To compare the energy efficiency, cooking time, and resource use of traditional cooking methods (charcoal stove) versus clean cooking technologies (Electric Pressure Cooker, EPC).

Materials Needed:

- Charcoal stove or any traditional cooking method.
- Electric Pressure Cooker (EPC).
- Two identical cooking pots or containers.
- A common Tanzanian dish (e.g., rice or beans).
- Timer to measure cooking times.
- Water and food ingredients.
- Thermometer (optional, for measuring energy output).

Procedure:

1. **Preparing the Ingredients:**
Prepare the same amount of food (e.g., rice) and water for both cooking methods to ensure a fair comparison.
2. **Cooking with Charcoal Stove:**
Start by cooking the food using a charcoal stove. Time how long it takes to cook the dish and observe how much charcoal is consumed during the process.
3. **Cooking with Electric Pressure Cooker (EPC):**
After the charcoal stove cooking is complete, repeat the process using the EPC. Time how long it takes to cook the same amount of food and note the amount of electricity used (if you have a meter or estimation tool).
4. **Comparison:**
Compare the cooking times, energy use, and the resources consumed (charcoal vs. electricity). Discuss the difference in efficiency and how the EPC uses less energy and reduces cooking time significantly.
5. **Real-Life Example:**
 - **Tanzania's Adoption of EPCs:** In Tanzanian communities, where charcoal and firewood are often used, families spend a significant amount of time collecting firewood. Switching to EPCs could save time, reduce the environmental impact of deforestation, and lower household energy costs.

Discussion:

- Which cooking method was more time-efficient?
- How much energy (or resources) did each method consume?
- How does the use of an EPC benefit the environment and household economy?
- Why is energy efficiency important for sustainable living?

ACTIVITY 3: ROLE-PLAYING GAME: "THE CLEAN COOKING POLICY DEBATE"**Objective:**

To engage students in understanding the different perspectives on clean cooking adoption by assigning roles such as community leaders, scientists, and farmers. This activity encourages critical thinking and helps students understand the importance of clean cooking policies and the various factors that influence their adoption.

Materials Needed:

- Role cards with different character descriptions (e.g., community leader, scientist, farmer).
- Information about clean cooking technologies and policies.
- Props for role-playing (optional, for fun and engagement).

Procedure:**1. Assign Roles:**

Divide the class into groups of 4-6 students. Assign each student a role such as a community leader, scientist, farmer, local politician, or government official. Provide them with information about their roles and the clean cooking policies they represent. For example:

- **Community Leader:** Advocates for improved health and cleaner cooking technologies.
- **Scientist:** Provides data on the health risks associated with traditional cooking methods.
- **Farmer:** Discusses the impact of deforestation on agriculture and the need for sustainable fuel alternatives.

2. Set the Scene:

Tell the students that their town or village is considering implementing clean cooking technologies and creating a policy to support it. They must now come together to discuss the benefits and challenges of adopting these technologies.

3. Role-Playing Discussion:

Let each student present their character's point of view and discuss the pros and cons of adopting clean cooking technologies. Encourage students to think critically and advocate for their assigned role's interests.

4. Debate:

Allow the class to debate the best way forward for adopting clean cooking in their community. They can discuss financial challenges, health concerns, environmental impact, and the potential for community education.

5. Real-Life Example:

- In Tanzania, local leaders and community health workers often lead the charge in promoting clean cooking policies. They collaborate with organizations like SEforALL and WFP to bring clean cooking solutions to rural and underserved areas.

Discussion:

- How did each role contribute to the decision-making process?
- What are some of the challenges in implementing clean cooking solutions in rural areas?
- How can we address the concerns of different community members (e.g., cost, accessibility, education)?

Conclusion:

These activities and experiments are designed to engage students in the science and practical aspects of clean cooking and sustainable energy. By incorporating real-life examples, hands-on experiments, and interactive role-playing games, teachers can foster a deeper understanding of how clean cooking technologies can benefit individuals, families, and the environment. These activities encourage students to think critically about energy use, health, and the future of their communities.

CHAPTER 8: ASSESSMENT AND STUDENT ENGAGEMENT STRATEGIES

Assessment and student engagement are essential components of teaching clean cooking and sustainable energy practices. By using a variety of assessment methods and engagement strategies, teachers can not only evaluate students' understanding but also inspire them to take active roles in advocating for and adopting clean cooking technologies. This chapter provides assessment techniques and ways to encourage sustained student interest in environmental and energy-related topics.

ASSESSMENT METHODS

Assessing students' understanding of clean cooking and sustainable energy practices should be both comprehensive and engaging. Below are a variety of methods to evaluate students' knowledge and skills.

1. Quizzes and Worksheets on Clean Cooking Topics

Objective:

To assess students' knowledge on key topics such as clean cooking, EPC, energy efficiency, and environmental impact.

How to Implement:

- Create short quizzes covering the core topics of clean cooking, EPCs, health risks of traditional cooking methods, and the environmental impact of deforestation. Questions can include multiple-choice, short-answer, and true/false formats.
- For worksheets, provide practical scenarios where students need to identify which cooking method (traditional vs. clean cooking technologies) is more efficient, healthier, and environmentally friendly.

Example:

- **Quiz Question:**
Which of the following cooking methods emits harmful smoke?
A) Electric Pressure Cooker (EPC)
B) Firewood stove
C) Gas stove
D) Solar oven
(Answer: B - Firewood stove)
- **Worksheet Activity:**
Draw a diagram showing how an electric pressure cooker works and list its benefits over a charcoal stove.

2. Practical Demonstrations Where Students Attend the Kitchen and see the Cook Using an EPC

Objective:

To evaluate students' ability to use clean cooking technologies in a practical setting, ensuring they can confidently operate an EPC and understand its efficiency.

How to Implement:

- Organize a cooking session where students use an EPC to prepare a simple meal (e.g., rice, beans, or vegetables). Assess their ability to follow instructions, understand the functionality of the EPC, and compare the cooking time and energy usage to traditional methods.
- Have students record the time taken, energy consumed, and compare this with traditional cooking methods.

Example:

- **Demonstration:**
Students can prepare rice using an EPC while tracking the time, energy usage (e.g., electricity consumption), and comparing these metrics with cooking on a charcoal stove or open fire.
- **Assessment:**
After the demonstration, students can fill out a worksheet comparing the cooking times and energy used, helping to solidify their understanding of the EPC's advantages.

3. Group Projects on Finding Solutions for Local Energy Challenges

Objective:

To encourage students to work collaboratively to find solutions to local energy issues and promote clean cooking adoption.

How to Implement:

- Assign students to groups and ask them to research energy challenges in their local communities, such as the reliance on firewood or charcoal for cooking. Each group can then design a proposal or project to promote the adoption of clean cooking technologies like EPCs in their community.
- The groups will present their findings and proposals, providing an opportunity to assess their critical thinking, creativity, and ability to apply classroom learning to real-world challenges.

Example:

- **Project:**
A group of students may research a nearby rural area where firewood is commonly used. They could design a community-based campaign to promote the use of EPCs, complete with potential funding strategies, awareness campaigns, and a plan for local implementation.
- **Assessment:**
Evaluate their proposals based on feasibility, the potential impact of clean cooking technologies, and the students' ability to present their ideas logically and convincingly.

ENCOURAGING STUDENT ENGAGEMENT

Engagement is crucial for helping students not only learn about clean cooking and sustainability but also take initiative in their communities. Below are several strategies to keep students motivated and involved.

1. School Clean Cooking Clubs

Objective:

To create a student-led initiative focused on clean cooking education, advocacy, and community outreach.

How to Implement:

- Establish a "Clean Cooking Club" within the school where students can learn about sustainable energy practices, participate in awareness campaigns, and organize clean cooking demonstrations or events.
- The club can take part in designing and distributing educational materials, hosting cooking workshops, or conducting surveys on energy practices in the school or community.

Example:

- **Activity:**
Students in the Clean Cooking Club can conduct workshops at school events or parent-teacher meetings to educate families about the benefits of EPCs and clean cooking technologies. The club can also distribute pamphlets or create posters to raise awareness.
- **Incentives:**
To encourage participation, consider offering rewards such as certificates or public recognition for active members.

2. Competitions for the Best Student-Led Clean Cooking Campaign

Objective:

To encourage students to take ownership of their learning by creating and executing campaigns that promote clean cooking in their communities.

How to Implement:

- Organize competitions where students develop their own campaigns to raise awareness about clean cooking technologies. These campaigns can include posters, videos, skits, or social media strategies to promote the use of EPCs.
- The campaigns can be judged based on creativity, effectiveness in delivering the message, and the potential impact on the community.

Example:

- **Campaign Ideas:**
A group of students might create a video campaign showcasing how an EPC can save time and money in cooking. They could interview families who use traditional cooking methods and show them cooking with an EPC to highlight the differences.

- **Prizes:**

Offer prizes for the most impactful campaign, such as recognition at school assemblies or an opportunity to present their work to local community leaders.

3. Field Trips to Communities Using Clean Cooking Technologies

Objective:

To give students firsthand exposure to communities that have adopted clean cooking technologies and learn about the real-world impact of these technologies.

How to Implement:

- Organize field trips to local villages or communities that have successfully adopted clean cooking technologies like EPCs. Students can interact with community members who use these technologies and learn about the practical challenges and benefits they experience.
- During the trip, students can interview community members, take notes, and participate in cooking demonstrations to observe the technology in use.

Example:

- **Trip to a Village:**

Students could visit a rural village/urban where a clean cooking initiative has been implemented. They could observe families cooking with EPCs and discuss with local leaders and farmers the environmental and health benefits they've experienced since making the switch from traditional cooking methods.

- **Reflection:**

After the field trip, students can write reflections or present what they learned from the experience, discussing how clean cooking technologies have positively impacted the community.

CHAPTER 9: LESSON PLAN TABLE FOR TEACHERS: CLEAN COOKING AND SUSTAINABLE ENERGY EDUCATION

Chapter	Lesson Focus	Preparatory Steps	Tools/Materials
1. Introduction to Clean Cooking	Introduce clean cooking, its importance, and the health, economic, and environmental benefits.	1. Prepare a brief introduction about clean cooking. 2. Gather information on the benefits of clean cooking and how traditional methods harm health. 3. Create flashcards or posters showing clean vs. traditional cooking methods.	Flashcards, posters, real-life examples (if possible), handouts, projector for video presentation.
2. The Role of Electric Pressure Cookers (EPCs) in Clean Cooking	Teach the basic function and benefits of EPCs compared to traditional cooking methods.	1. Ensure you have access to an EPC for demonstration. 2. Prepare comparison charts of EPCs vs. traditional methods. 3. Organize a hands-on demonstration.	Electric Pressure Cooker, comparison charts, recipe ingredients for simple cooking demonstration, projector for visuals.
3. Practical Lessons on Using an EPC	Teach students how to use an EPC, including its parts, control panel, and basic cooking steps.	1. Familiarize yourself with the EPC's features. 2. Prepare simple recipes for the demonstration. 3. Set up the classroom for the practical session.	Electric Pressure Cooker, recipe ingredients, step-by-step guide handouts, safety instructions.
4. The Role of Electric Pressure Cookers (EPCs) in Clean Cooking (Continued)	Dive deeper into EPCs' efficiency, advantages, and debunking myths.	1. Prepare fact sheets on common misconceptions. 2. Prepare a presentation showing benefits of EPCs. 3. Plan student group discussions about the advantages.	Myth-busting fact sheets, projector, EPC, comparison charts, handouts for group discussions.
5. Practical Lessons on Using an EPC (Continued)	Focus on cooking common Tanzanian meals using EPCs.	1. Select simple Tanzanian dishes for demonstration. 2. Prepare necessary ingredients and ensure availability of EPC. 3. Practice cooking with the EPC beforehand.	Electric Pressure Cooker, recipe ingredients, cooking utensils, safety gear, cooking instruction handouts.
6. Teaching Strategies for Different Age Groups	Design age-appropriate methods to engage students in clean	1. Divide students into appropriate age groups (6-12, 13-18).	Storybooks or visual aids, debate prompts, research resources,

	cooking discussions.	2. Create storytelling activities for younger students. 3. Prepare debate topics and research assignments for older students.	posters, and materials for experiments.
7. Classroom Activities and Experiments	Conduct experiments like the Smoke Test, Energy Efficiency Experiment, and Role-Playing Games to reinforce concepts.	1. Prepare materials for each experiment. 2. Set up a safe space for experiments. 3. Assign roles for the role-playing game.	Smoke test materials (firewood, electric stove, smoke meter), energy efficiency experiment materials (EPC, charcoal stove), and role-playing cards.
8. Assessment and Student Engagement Strategies	Implement quizzes, practical demonstrations, and group projects to assess student learning.	1. Prepare quizzes or worksheets on clean cooking concepts. 2. Organize practical demonstrations of EPC cooking. 3. Plan a group project where students identify local energy challenges.	Quizzes/worksheets, EPC for cooking demos, group project guidelines, and assessment rubrics.
9. Additional Resources for Teachers	Provide further reading, videos, and contacts for local organizations.	1. Collect books, articles, videos, and contact information for local clean energy organizations. 2. Create a resource list for students and teachers. 3. Ensure access to multimedia equipment for video presentations.	Books and articles, access to videos/documentaries, a projector, resource list handouts, and internet access for further research.

NOTES FOR TEACHERS:

- **Preparatory Steps:** These involve preparing materials, ensuring the availability of tools, and familiarizing yourself with each lesson's content before class. It's essential to review any videos, articles, or cooking processes to ensure smooth delivery.
- **Tools/Materials:** These include any physical items or media required for teaching, such as clean cooking devices (like EPCs), cooking ingredients for practical lessons, handouts, and multimedia tools (projectors, videos, etc.).
- **Classroom Setup:** For practical lessons like cooking, ensure the classroom has enough space, ventilation, and safety precautions in place. Prepare any safety gear for handling cooking equipment like EPCs or stoves.

By following this structured lesson plan, teachers will be able to guide their students through the various aspects of clean cooking and sustainable energy, providing engaging and hands-on learning experiences while fostering important life skills related to health and the environment.

This guide equips teachers with the necessary tools to educate students on the importance of clean cooking and the role of EPCs in promoting sustainable energy use. Through interactive lessons, practical demonstrations, and engaging activities, teachers can inspire students to adopt clean cooking practices and contribute to a healthier, more sustainable Tanzania.

End of Guide



ABOUT SEforALL

Sustainable Energy for All is an independent organization, hosted by UNOPS, with a global mandate to accelerate progress on the energy transition in emerging and developing countries. We work at the intersection of energy, climate, and development. We collaborate with governments and partners worldwide to end energy poverty, accelerate the deployment of renewable energy solutions, and combat climate change.

Our vision is a world where everyone, everywhere, can lead a dignified life on a healthy planet, powered by sustainable energy. We promote this vision by pushing for higher ambitions, stronger policies, greater finance flows, increased localization and green jobs, and faster results toward an energy transition that leaves no one behind.

For more information, visit www.SEforALL.org

