



# BUREAU OF FIRE PROTECTION

**VOLUME 4**

# *for* Fire Safety General Public

A black and white photograph of a person's face, heavily shadowed, with a bright white vertical shape superimposed on the forehead area.



**VOLUME 4**

# **Fire Safety** *for the* **General Public**

**Standardized Public Fire Education Manual**



**BUREAU OF FIRE PROTECTION**

## **Volume 4: Fire Safety for General Public Standardized Public Fire Education Manual**

The BFP Standardized Public Fire Education Manual will serve as a reference guideline in conducting fire safety education lectures and seminars in the community.

**Module 6: Fire Safety Lectures and Seminars for General Public**  
This Fire safety module will include the lecture on Fire Safety purposes of fire safety enforcement, fire prevention activities and other requested seminars by the business sector and or government offices. Areas and development focuses in general Fire Prevention subjects ans special activities procedures.

### **Module 7: Standardized Procedures for Fire Drills and Demonstration Activities**

The module will include the standard procedures and evaluation tools for activities involving drills and demonstrations such as the use of LPG, cooking devices, Fire Extinguishers, Evacuation of victims and similar demonstrations.

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Philippines

Published by the Material Production and Development Section, Fire Safety Information Division — Bureau of Fire Protection National Headquarters, Miriam Defensor-Santiago Ave., Brgy. Bagong Pagasa, Quezon City, 1008, Philippines.

National Library of the Philippines

ISBN: 978-621-8396-07-4 (hbk)  
ISBN: 978-621-8396-08-1 (pbk)  
ISBN: 978-621-8396-09-8 (ebk)

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**Standardized  
Public Fire  
Education  
Manual**

**Volume 4:**  
**Fire Safety for General Public**

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# Preface

## Volume Overview

This volume is entitled 'Fire Safety Seminars for the General Public and Standardized Procedures for Fire Drills and Demonstration Activities.' It serves as a guide for our facilitators when conducting fire safety lectures integrated with demonstration activities for the general public. Module 6 primarily focuses on theoretical discussions about instilling a fire safety culture within the community. Module 7, on the other hand, is centered around the return demonstration, which aims to enhance the participants' performance and skills in dealing with various fire hazards in the community.

Therefore, participants are encouraged to actively engage in the practical demonstrations, complemented by motivational activities, to empower them with the knowledge and skills to handle fire and other emergencies effectively.

The primary emphasis is to promote fire safety practices among the public, starting with households, with the aim of saving lives and properties. This includes fostering fire safety awareness. The content encompasses a range of lessons standardized for various situations, such as rural fire safety, basic electrical fire safety at home, kitchen fire safety, LPG safety measures, fire suppression methods using ordinary materials, intensified home fire exit drills, community/school fire simulation drills, and more. These lessons are presented with comprehensive instructions to guide the lecturers/facilitators in delivering fire safety lectures for the general public.

## **Volume Objective**

In this volume, the objectives are the following:

1. Acquire knowledge through fire safety seminars/lectures for the general public;
2. Gain competence in various standardized procedures for conducting fire drills and demonstration activities; and
3. Perform a return demonstration on fire drills and demonstration activities.

## **Audience and Specific Use of the Volume/book**

The target audience for this volume includes the general public within the community. This encompasses family members such as fathers, mothers, and siblings, as well as community officials like Tanods, CFAG members, functionaries, and other individuals residing in the Districts, Barangays, and Sitio or Purok.

# Acknowledgment

## Volume 4: Fire Safety for General Public Standardized Public Fire Education Manual

Module 6: Fire Safety Lectures and Seminars for General Public

Module 7: Standardized Procedures for Fire Drills and Demonstration Activities

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\*New Corella Fire Station- helps provide the ideal electrical system model chart in a single family dwelling.

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## **MODULE 6**

# **Fire Safety Lectures and Seminars *for the* General Public**



**SPFE**  
Standardized  
Public Fire  
Education  
Manual

## MODULE 6 OUTLINE

# Fire Safety Lectures and Seminars for the General Public

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## Scope/ Overview

In the heart of our communities, the importance of fire safety cannot be overstated. This module, “Fire Safety Lectures and Seminars for the General Public,” stands as a beacon of knowledge and preparedness for all. With a wide scope encompassing multiple crucial subjects, its goal is to empower individuals and communities with the understanding and skills required to prevent and respond effectively to fire incidents.

This module is a comprehensive guide that equips participants with the knowledge and skills needed to safeguard themselves, their families, and their communities from fire-related risks. It is more than just a collection of lessons; it represents a commitment to a culture of safety and responsibility, contributing to the creation of safer homes and neighborhoods. Through this education, participants gain a deeper understanding of fire safety and become empowered to act swiftly and effectively should a fire emergency arise. It's a journey toward a safer and more prepared community for all.

## Module Objectives

1. To raise awareness among the general public about the importance of fire safety, equipping them with knowledge and skills to prevent fires and respond effectively in emergency situations.
2. To empower individuals in the community with the necessary information and tools to reduce fire hazards in their homes and workplaces, fostering a culture of fire prevention.
3. To engage the general public in fire safety discussions and promote a proactive approach to fire prevention, ultimately contributing to a decrease in fire-related incidents and injuries.

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## Delivery Methodology

Interactive Lecture

## Module Objectives

At the end of the session, the participants will be able to:

1. Understand the Origin of Fires in the community setting, its causes and growth;
2. Know the simple fire suppression methods using ordinary household materials and fire extinguishers
3. Learn good housekeeping practice for fire safety in the homes; and
4. Learn the basic fire safety tips for kitchen, electrical and LPG induced fires.

## Learning Materials Needed

- ✓ Visual Aides and Visual Cards
- ✓ Multimedia Projectors
- ✓ Demonstration Materials as maybe required per subject

**4      MODULE 6 Fire Safety Lectures and Seminars for the General Public**

# Subject 1

Fire Safety Lectures and Seminars for the General Public

# Origins and Chemistry of Fire

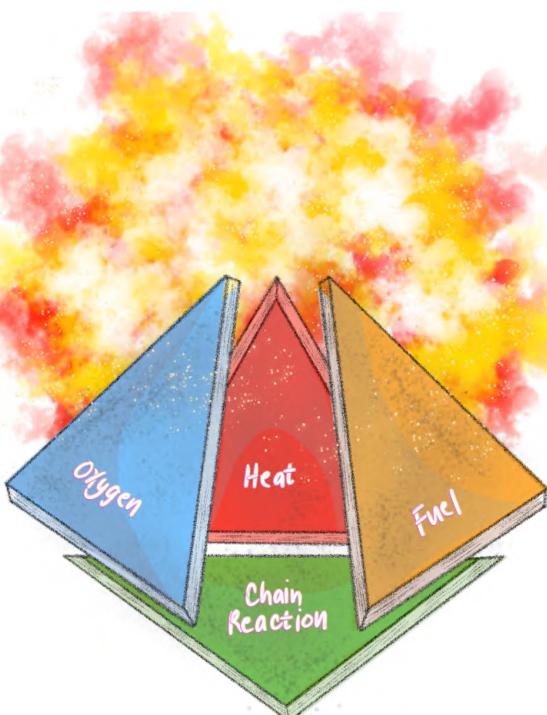


ILLUSTRATION BY: F01 Ricjun P Almacen

# In this Subject 1...

## Goal

For the audience to understand the basic concepts of fire, how it occurs, its causes, and risks.

## Objectives

By the end of the session, participants should be able to:

1. Explain the most straightforward terms of the origin of the fire;
2. Identify common causes of fires; and
3. Understand the scenario of how fire spread.

---

### Subject Aids Needed:

#### A. Primary Tools

1. Printed Trapaulins
2. Flip Cards
3. Visual Examples
  - i. Candle
  - ii. Lighters
  - iii. Piece of Crumpled Scratch Paper
  - iv. Any useable means of making an example

#### B. Alternative Tools

1. Projector with screen
2. PowerPoint Presentation

---

### Total Time of Delivery:

*25 to 30 minutes*

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## Subject Overview

**Purpose:** To introduce to the participants the concepts behind fire's origin, probable causes, and heat transfer. The participants will be made aware through visual examples of how a fire starts and what everyday items may cause it.

**General Guidance:** In this subject, the lecturer/facilitator must deliver the lesson in the simplest terms that are understandable to the participants. Use simple words in elaborating the task and show enthusiasm for their interest in the topic.

**Things to Consider:** The participants' level of comprehension must be considered. The lecturer must connect with them through jokes and active interaction. However, be aware of personal sensitivities.

# Cheat Sheet

## Subject Outline:

Audio/Visual Aids	Outline	Notes
PPTS-1	<h3>1. Preparatory</h3> <p>1.1 Greet the participants and start by introducing your name and your teammates.</p>	The following questions are not suggestions to choose one but should all be asked in the presented manner.
	<p>1.2 Engage the participants by asking the following initial questions:</p> <ul style="list-style-type: none"><li>• <i>Do you have any idea about fire? To you, what is fire?</i></li><li>• <i>For what do we use fire? Can anyone give an example?</i></li><li>• <i>When you touch fire, what can you feel?</i></li><li>• <i>Do you think we have to play with fire?</i></li><li>• <i>Are you afraid of fire?</i></li></ul>	Acquaint the participants about awards & rewards will be given to those who are participative and active during the discussion.
PPTS-2	<h3>2. Motivation</h3> <p>2.1 Start with a demonstration activity.</p> <p>2.2 Incorporate the following questions:</p> <ul style="list-style-type: none"><li>• <i>What do you think they represent?</i></li><li>• <i>What would happen if we lit the paper using the matchstick/lighter?</i></li></ul>	Give the participants time to interact and give their answers to the questions on the flip cards. Entertain and mention all their answers until one passes the critical response.
	<p>2.3 Present subject objectives.</p>	Refer to Goals and Subject Objectives
PPTS-3-4 LG1-1	<h3>3. Lesson Proper</h3> <p>3.1 Start by discussing the topic "<i>What is fire?</i>" And its definition based on the The Fire Code of the Philippines (RA9514). Introduce the process of combustion</p>	Utilize powerpoint presentation/flip cards for the presentation and use simple language to ensure everyone understands the concept.
PPTS-5-8 LG1-2	<p>3.2 Discuss "<i>What makes a fire?</i>"</p> <ul style="list-style-type: none"><li>• Air is presented as the wind.</li><li>• Heat is presented as the feeling of the sun</li><li>• Fuel presented as dry grasses in the field.</li></ul>	Utilize diagrams or animations to illustrate the components of fire (fuel, oxygen, and heat).

# Cont.

Audio/Visual Aids	Outline	Notes
PPTS-9 LG1-3	3.3 Discuss the Fourth Component and the Fire Tetrahedron	Use a simple diagram showing the fire tetrahedron to visually reinforce the concept.
PPTS-4 LG1-4	3.4 Discuss the process of combustion	Skip this part if necessary, as it was already covered in the first topic.
PPTS-10-13 LG1-5	3.5 Discuss "How fire spreads?" A. Conduction B. Convection C. Radiation	Clearly describe the differences between conduction, convection, and radiation heat transfer processes as they relate to the propagation of fire.
<b>4. Generalization</b>		
4.1 Summarize the lesson and provide a generalization of the things the participants must remember.		
<b>5. Closing Evaluation</b>		
PPTS-14	5.1 Review the objectives by asking the questions. <ul style="list-style-type: none"><li>• <i>Can you explain how the fire originated?</i></li><li>• <i>Can you identify common causes of fire? What are they?</i></li><li>• <i>How does fire spread at home and in schools?</i></li><li>• <i>Can you give ways to prevent these?</i></li></ul>	
5.2 Ask if there are questions or clarification.		
PPTS-15	5.3 End the subject	

# Lecturer's Guide and Talking Points

## I. Preparatory

Below are samples of guide questions for the participants.

- Do you have any idea about fire? To you, what is fire?
- For what do we use fire? Can anyone give an example?
- When you touch fire, what can you feel?
- Do we have to play with fire?
- Are you afraid of fire?

### Facilitator's Key Guide

- Acquaint the participants about awards, and rewards will be given to those who are participative and active during the discussion. Deliver the questions one at a time and ensure that questions are answered to assess and elicit information that will allow the participants to engage more in the discussion. As facilitators, ensure the openness and the feeling of comfort toward participants to promote interactive discussion.

## II. Motivation

This demonstration will explain the components of fire.

### Materials Needed

Prepare the following materials before the demonstration.

1. Lighter
2. Piece of Scratch Paper or anything that can be burned

### Instruction to Facilitator

During the demonstration, incorporate the guide questions below while taking the actions.

1. Take out a piece of paper and a matchstick/lighter.
2. Ask the participants the following questions:
  - *What do you think they represent?*
  - *What would happen if we lit the paper using the matchstick/lighter?*
3. Then, set the paper on fire while observing safety precautions.

### Facilitator's Key Guide

- Perform this activity in front of the participants. Make sure to observe safety precautions in doing the exercise. Begin discussing the idea that some kind of energy must be present, whether from flame or heat from friction.
- A good vocabulary word to introduce at this point is ignition. (The facilitator can relate the scenario to any actual experiences to catch the participants' attention).
- Then, explain to the participants that for the fire to start, there should be combustible materials. These flammable materials, when met with heat agents and with the presence of air, fire can be created. Without the other, fire cannot be formed.

### III. Lesson Proper

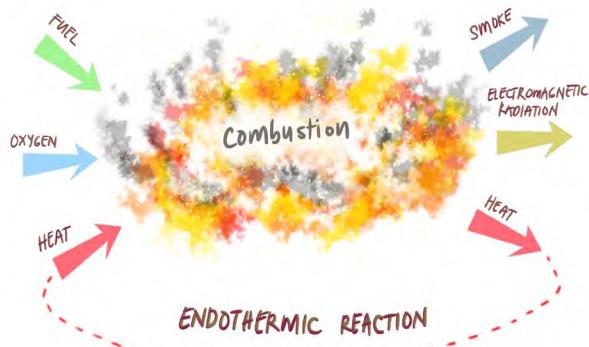
#### Facilitator's Note [1/6]

- ▶ Expand on the idea of the components that make up fire, stressing how they are everywhere in our daily lives. Share specific examples or situations where these elements have caused things to catch fire, giving a thorough insight into how fires work in ordinary scenarios.

#### ► What is Fire? [1/5]

The First step in preventing fires is to understand exactly what it is. The Fire Code of the Philippines (RA9514) defines fire as the active principle of burning, characterized by *heat* and *light* of combustion.

It is a rapid oxidation of a material in the exothermic chemical processes of combustion, releasing heat, light, and various reaction products. It is neither solid nor liquid. Fire is a chemical reaction that results in light and heat and it usually occurs only in the gas phase. Solids must be heated first, to decay and produce gases, a process called pyrolysis. Liquids must be heated to produce ignitable mixtures in air (vaporization).



It illustrates the process of combustion.

*Combustion* or “burning” on the other hand is a high-temperature exothermic (heat-producing) reaction between a fuel, oxidizer (oxygen), and an initial heat source. Combustion occurs when a fuel or other materials chemically react with available oxygen and in the process, produce light, heat, and a flame. The visible, gaseous part of a fire resulting from the heat produced during the reaction is called the flame and consists primarily of carbon dioxide, water vapor, oxygen, and nitrogen.

#### Facilitator's Note [1/6]

- ▶ Utilize diagrams or animations to illustrate the components of fire (fuel, oxygen, and heat).

#### ► The Elements of Fire [2/5]

For the initial combustion to occur, three essential components needed, we often refer to this as the three elements of fire: Fuel, Heat and, Oxygen. These elements are interdependent with each other where all three are constantly consumed during the combustion process. The absence or removal of one or more these elements will break the combustion cycle and lead to the extinguishment of the fire.

## Fuel

It is anything that can burn and contains the chemical potential energy released during combustion. Initially, the fuel may be in the form of a solid, liquid, or gas at the ambient temperature.

Some materials burn easier than others, this has to do with their fire point or the minimum temperature at which a fuel emits sufficient vapors (vaporization) to ignite when exposed to a flame or heat source. A high fire point means that a certain material has a lower hazard when exposed to heat sources. Since all materials have a fire point, nothing is ever truly fireproof only fire – resistant.

### Facilitator's Note [3/6]

- Offer guidance on preventing the ignition of these fire elements. Give clear warnings and practical tips on how individuals can take precautions to avoid situations where these elements might catch fire.



Dried crops are depicted as an example of fuel.

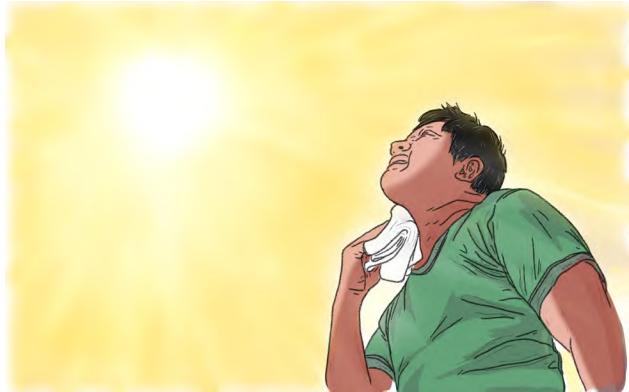
Another factor to be considered, particularly in the case of solids, is the physical size and shape of the fuel. The more surface area subjected to heat and resulting vaporization, the more easily ignitable it becomes. As an example – it is very difficult to light a large log in a fireplace with a single match, but very small pieces of wood, having more combined surface area exposed to heat, can easily be ignited.

## Heat

It is the energy component of the combustion process and is responsible for the initial ignition. When heat comes into contact with a fuel, energy imparted supports the initial combustion reaction. Heat also allows fire to spread by drying out and preheating nearby fuel (pyrolysis) as well as warming the surrounding air.

The amount of heat required to start the reaction largely depends on the type of fuel and its fire point.

Heat/ignition sources include anything capable of generating heat for example lightning, cigarettes, powerlines, catalytic converters, small engine sparks, matches, and sunlight hitting a magnifying glass.



The source of heat is depicted as coming from the sun.

### Oxygen

It is present in the air we breathe and serves as the oxidizing agent for the combustion process. Because combustion or “burning” is essentially oxygen combining with fuel through the application of heat, the amount of oxygen available controls the speed of the reaction.

With a diminished amount of oxygen, the combustion process is slowed (i.e., Rusting). With an abundant amount of oxygen, the chemical reaction is accelerated. (i.e., when fanning flames)



It represents the presence of oxygen in the air.

### *More oxygen means a fire will burn hotter*

Air contains about 21 percent oxygen, and most fires require at least 16 percent oxygen content to burn. When fuel burns, it reacts with oxygen from the surrounding air, releasing heat and generating combustion products (gases, smoke, embers, etc.) in a process known as oxidation.

## The Fourth Component and the Fire Tetrahedron [3/5]

### The Chemical Chain Reaction

While it is true that fire cannot exist without each of the three elements present, simply combining them at random does not guarantee ignition. Otherwise, everything would ignite spontaneously seeing that each element is constantly present at varying levels in our surroundings.

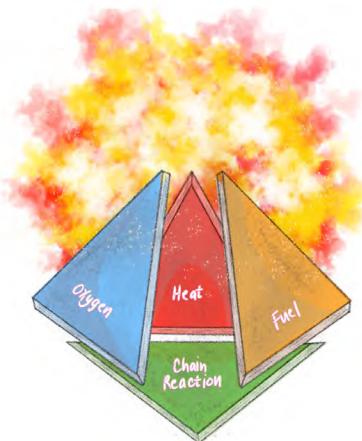
For combustion to occur, requires that the three elements combine in the correct ratio to initiate and sustain combustion — this is called the chemical chain reaction and is the most essential component of the burning process.

### The Fire Tetrahedron

In addition to the elements of fire, the fire tetrahedron introduces the fourth component — Chemical Chain Reaction. Each face of the tetrahedron represents the interdependent elements needed to ignite and sustain fire. At its base is the chemical chain reaction which brings together the other components to create fire. Having this fourth component together with the three elements of fire provides a clearer understanding of what causes fires to ignite and continue to burn over time.

#### Facilitator's Note [3/6]

- Offer a brief overview of the fire triangle and introduce the fire tetrahedron, highlighting the reason for the shift from a triangle to a tetrahedron in understanding fire dynamics.



It illustrates the Fire Tetrahedron

### How the Chemical Chain Reaction Happens

When the three elements of fire coalesce in the correct ratio, initial ignition occurs, the chemical chain reaction then continues to support the burning process by providing enough heat to sustain the fire. To do this, the combustion must produce more heat than it loses to the environment.

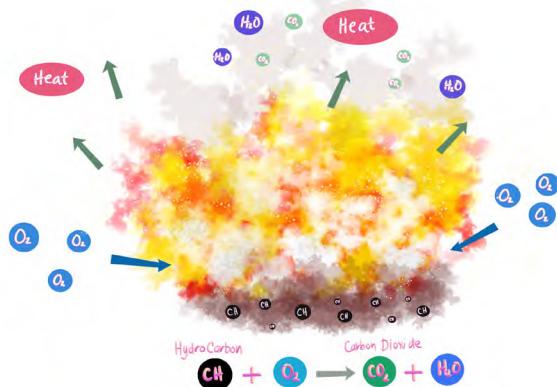
and is achieved by having fuel at their ignition temperature and enough oxygen to support the reaction. As long as this golden ratio is sustained, the fire grows and continue to burn until one or more of the elements run out.

### Facilitator's Note [4/6]

- ▶ Provide an example illustrating the concept of combustion, or consider this analogy: Picture combustion as a vibrant bonfire. When substances burn, it's akin to an animated dance where they seize oxygen from the air. This lively dance results in the production of heat, light, and a newfound companion called carbon dioxide. In essence, combustion resembles a dynamic dance generating warmth, light, and the distinctive presence of carbon dioxide.

### Combustion – A Closer Look [4/5]

Combustion occurs when the products of a series of chemical reactions contribute to another reaction. This transformation of products to reactants allows a reaction to continue with minimal or no outside influence. These chain reactions are generally triggered by a single initial reaction where an unstable product from the first reaction becomes the reactant ( $\text{CO}_2 + \text{Heat}$ ). This is how fire propagates over



A closer examination reveals the Combustion Process.

a larger area.

There are three “phases” to a chemical chain reaction: the first is the initiation or the initial spark, the next is the propagation, and the final state is the termination where the system reaches a stable state.

Let's take a lit campfire as a way of illustrating the processes taking place during combustion. When a piece of wood or other flammable material is surrounded by enough oxygen and is exposed to a source of heat bringing it to a temperature above its flash point, a fire is then ignited. This process will continue as long as there is enough oxygen, fuel, and heat to maintain the chemical reaction of the fire.

Additionally, in this example the products of combustion (Heat +  $\text{CO}_2$ ) act against other nearby sources of fuel by preheating them, eventually leading to further spread of the fire until such time that all available fuel is consumed.

### Different Fuels, Different Products of Combustion

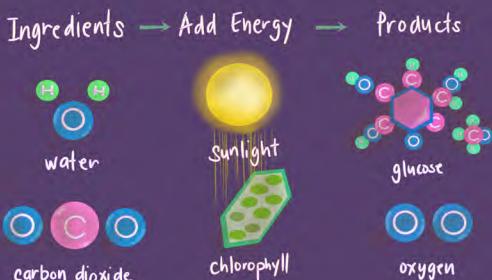
Typically, during complete combustion, when there is enough oxygen available to react with all the fuel, very few byproducts are left over. For instance, take

hydrocarbons such as wood or gasoline (CHO). When these undergo complete combustion, the reaction will primarily yield carbon dioxide and water. The same is true when elements burn, only that they mainly produce oxides of the original reactant element. Burning Carbon will yield carbon dioxide, sulfur will produce sulfur dioxide and iron-iron oxide. This is the reason why, some fires have toxic smoke, while others release acids when burned.

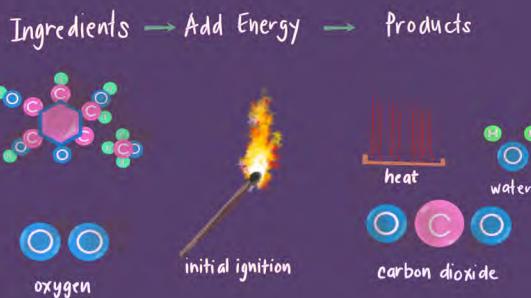
*Trivia: Did you know that combustion is the opposite process of photosynthesis? Combustion is the process of breaking apart the building blocks put together during photosynthesis, thereby releasing the stored chemical energy within the fuel to create the byproducts of combustion plus heat.*

### Facilitator's Note [5/6]

- ▶ Describe how combustion and photosynthesis are different by looking at how they break things down. Emphasize that combustion is the opposite of photosynthesis, pointing out their unique steps and results.



The breakdown of the Photosynthesis Process is depicted.



The breakdown of the Combustion Process is illustrated.

### Some Fires More Toxic than Others

An example of this happens in the case of refrigerator fires, specifically the refrigerant (cooling agent) they contain. Did you know that the most common commercial refrigerant (R134A) releases, hydrogen fluoride in addition to the other products of combustion? And when this gas makes contact with the moisture in your lungs it creates HYDROFLUORIC ACID. So yes, next

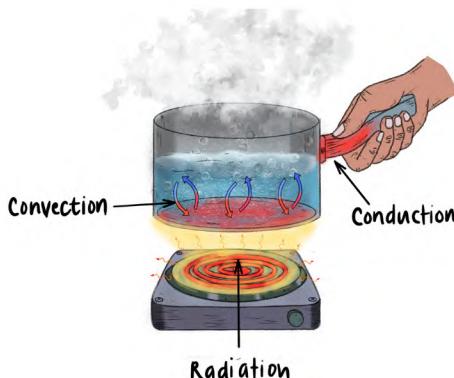
time your refrigerator goes up in flames, close the door and stay away.

### Facilitator's Note [6/6]

- ▶ Clearly outline the distinctions in how fire spreads through the heat transfer methods of conduction, convection, and radiation.

## Spread- Heat Transfer [5/5]

Understanding heat transfer is important because a major aspect of *fire dynamics* is to understand how heat is transferred to and from a fire. Heat spreads through 3 methods: convection, conduction, or radiation.



It shows three ways of heat transfer.

### Conduction

It is the transfer of heat from one body to another by direct contact of the two bodies or by an intervening heat-conducting medium. For example, a flame touching and lighting a candle wick is an example of conductive heat.

Conduction contributes to the spread of fires either by:

1. Conduction via Direct Contact with Flames  
(Example: *Flames Directly Touching Objects in the vicinity of a fire*)
2. Conduction through objects via a Medium with High Thermal Conductivity  
(Example: *A Steel pipe going through the floor of a multi-story building can spread the heat throughout the building during a fire.*)



It shows an example of heat transfer through conduction.

**Thermal Conductivity** is defined as the ability of any material to conduct/transfer heat. Because some materials conduct heat better, fires can spread faster depending on the material being burned.

**Trivia:** Did you know that even air can conduct heat? This is because conduction is defined as the transfer of heat through particles of matter without bulk motion.

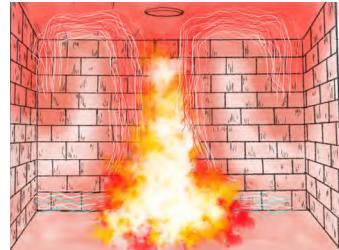
## Convection

It is the transfer of heat energy by the movement of fluids from the source of heat to a cooler part of the environment. It is the most common method of heat transfer; when liquids or gases are heated, they become less dense and will expand and rise.

### Convection Heat Transfer During Fires

In a typical fire, the heated air continues to rise, creating a plume of heat, smoke, and ash which dissipates into the atmosphere. In enclosed fires however, this heated air makes contact with the ceiling, where it is trapped causing it to move horizontally throughout the structure creating currents of hot air. Because the heated air is trapped, it eventually becomes denser, which is then forced down through the air column increasing ambient room temperatures by hundreds of degrees in a matter of minutes.

This is the most dangerous way a fire can spread through a structure since this method of heat transfer tends to dry and preheat fuels faster.



This illustration shows an example of heat transfer through convection .

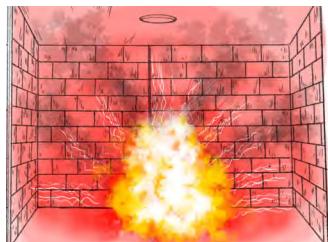
## Radiation

This is the transfer of heat by infrared radiation (heat waves, e.g., the sun) which generally is not visible to the naked eye. Radiant heat generally travels from the sides or edges of a fire until the heat waves reach another object. It is the least efficient method of heat transfer to fuels and is greatly affected by distance.

### Radiated Heat During Fires

Because radiated heat moves in all directions away from the initial fire, a sufficiently hot fire may spread to any burnable material close enough to absorb enough heat. In extreme cases, burnable object my spontaneously combust when subjected to enough heat for it to reach its fire point.

Conduction is the transfer of heat through a material due to the vibration and collision of particles without the material itself moving. It depends on temperature difference, material properties, and occurs mainly in solids.



This illustration shows an example of heat transfer through radiation.

## PowerPoint and Visual Aids

### Origin and Chemistry of Fire

1

### What makes a fire?

5

**Goal:** For the audience to understand the basic concepts of fire, how it occurs, its causes, and risks.

**Objectives:** At the end of the session, the participants will be able to:

1. Explain the most straightforward terms of the origin of the fire;
2. Identify common causes of fires; and
3. Understand the scenario of how fire spread.

2



#### Heat

Heat/ignition sources include anything capable of generating heat for example lightning, cigarettes, powerlines, catalytic converters, small engine sparks, matches, and sunlight hitting a magnifying glass.

6

#### What is fire?

The Fire Code of the Philippines (RA9514) defines fire as the active principle of burning, characterized by heat and light of combustion.

It is a rapid oxidation of a material in the exothermic chemical processes of combustion, releasing heat, light, and various reaction products. must be a heat or ignition source that allows the fire to begin.

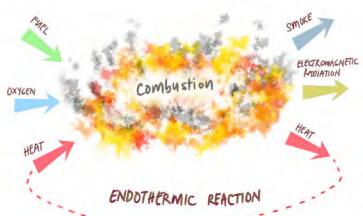
3



#### Fuel

It is anything that can burn and contains the chemical potential energy released during combustion. Initially, the fuel may be in the form of a solid, liquid, or gas at the ambient temperature.

7



4



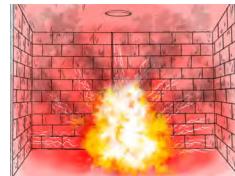
#### Oxygen

Air contains about 21 percent oxygen, and most fires require at least 16 percent oxygen content to burn.

8

*Fire Tetrahedron*

9

*Radiation*

This is the transfer of heat by infrared radiation (heat waves, e.g., the sun) which generally is not visible to the naked eye. Radiant heat generally travels from the sides or edges of a fire until the heat waves reach another object.

13

*How fire spread?*

10

- Can you explain how the fire originated?
- Can you identify common causes of fire? What are they?
- How does fire spread at home and in schools?
- Can you give ways to prevent these?

14

*Conduction*

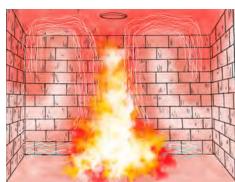
It is the transfer of heat from one body to another by direct contact of the two bodies or by an intervening heat-conducting medium.

11

# Thank You!

-End-

15

*Convection*

It is the transfer of heat energy by the movement of fluids from the source of heat to a cooler part of the environment.

12

**20 MODULE 6 Fire Safety Lectures and Seminars for the General Public**

## **Subject 2**

**Fire Safety Lectures and Seminars for the General Public**

# **Fire Development Stage and Its Contributing Factors**



ILLUSTRATION BY: F01 Ricjun P Almacen

# In this Subject 2...

## Goal

To fully understand the stages of fire development.

## Objectives

By the end of the session, participants should be able to:

1. Explain each stage of fire;
2. Discuss the contributing factors that lead to the development of destructive fire;
3. Appreciate their roles in suppressing a destructive fire; and
4. Familiarize local hotline numbers Explain the most straightforward terms of the origin of the fire.

### Subject Aids Needed:

#### A. Primary Tools

1. Printed Tarpaulins
2. Flip Cards
3. Visual Examples
  - i. Pictures that shows stages of fire

#### B. Alternative Tools

1. Projector with screen
2. PowerPoint Presentation
  - i. Video clips that shows actual incident of stages of fire

### Total Time of Delivery:

*30 to 45 minutes*

## Subject Overview

**Purpose:** For the participants to be knowledgeable about fire development stages. Using visual examples and alternative tools, the participants will be able to learn the stages of fire and appreciate their roles in suppressing a destructive fire by simply analyzing each stage of fire. The emphasis must be placed on the participant's ability to detect the early stage of fire development.

**General Guidance:** The lecturer must teach the lesson in the native language. Use simple words in elaborating the lesson and show enthusiasm for them to be interested in the topic.

**Things to Consider:** The participants' level of comprehension must be considered. The lecturer must connect with them through jokes and active interaction. However, be aware of personal sensitivities.

# Cheat Sheet

## Subject Outline:

Audio/Visual Aids	Outline	Notes
<b>1. Preparatory</b>		
PPTS-1	<p>1.1 Greet the participants and start by introducing your name and your teammates.</p> <p>1.2 Engage the participants by asking the following initial questions:</p> <ul style="list-style-type: none"><li>• <i>Have you witnessed a fire incident in your community?</i></li><li>• <i>How will you know that a fire is in progress?</i></li><li>• <i>How do people respond to a fire incident?</i></li></ul>	<p>The following questions are not suggestions to choose one but should all be asked in the presented manner.</p> <p>Acquaint the participants about awards &amp; rewards will be given to those who are participative and active during the discussion.</p>
PPTS-2	<p>2.1 Engage participants through the activity <b>"Lost and Found"</b></p> <p>2.2 Incorporate the following questions:</p> <ul style="list-style-type: none"><li>• <i>What did you notice about the pictures arranged by the participants?</i></li><li>• <i>What does it show?</i></li></ul>	<p>Refer to the Lesson Guide for the mechanics.</p> <p>Always present the Goals and Objectives of the lesson first for them to become aware of what they need to learn.</p>
PPTS-3	2.3 Present subject objectives.	
<b>3. Lesson Proper</b>		
PPTS-4 LG2-1	<p>3.1 Start by discussing the topic, "<i>Can we detect a destructive fire from its initial stage?</i>" And discuss further its development.</p>	Show the diagram of the stages of fire. Present the pictures and utilize the flip cards.
PPTS-5-8 LG2-2	<p>3.2 Discuss the stages of fire.</p> <ol style="list-style-type: none"><li>A. Ignition Phase/ Incipient Stage</li><li>B. Growth Phase/ Smouldering Stage</li><li>C. Fully Developed Stage</li><li>D. Decay Stage</li></ol>	Always use the sample pictures to discuss each common cause of the fire. Cater questions and clarifications. Allow them to share personal experiences and ideas.

# Cont.

Audio/Visual Aids	Outline	Notes
PPTS-9	<b>4. Generalization</b>  4.1 Sum up the lessons and provide brief explanations of the things that participants need to remember.	
PPTS-10	<b>5. Closing Evaluation</b>  5.1 Make a quick review of the Lesson Objectives: <ul style="list-style-type: none"><li>• <i>Why do we need to know the stages of fire?</i></li><li>• <i>What are the contributing factors for its development?</i></li></ul> 5.2 Ask if there are questions or clarification.  5.3 End the subject	

# Lecturer's Guide and Talking Points

## I. Preparatory

Below are samples of guide questions for the participants.

- Have you witnessed a fire incident in your community?
- How will you know that a fire is in progress?
- How do people respond to a fire incident?
- Are you afraid of fire?

### Facilitator's Key Guide

- Acquaint the participants about awards, and rewards will be given to those who are participative and active during the discussion. Deliver the questions one at a time and ensure that questions are answered to assess and elicit information that will allow the participants to engage more in the discussion.

## II. Motivation

In this activity, participants will be introduced to the stages of fire as they have to arrange the given pictures that show fire stage scenarios.

### Materials Needed

Prepare the following materials before the demonstration.

1. Scotch/Masking tape
2. Simple token for the participants
3. Printed pictures of stages of fire

### Instruction to Facilitator

During the demonstration, incorporate the guide questions below while taking the actions.

1. Prepare the printed pictures before the session. The images can be printed onto legal size bond paper.
2. Fold the picture into four, then put it under the chair used by the participants.
3. Make sure the folded pictures are placed before the participants arrive.
4. As the session begins, announce that there are four pictures hidden under the lucky participants' chairs.
5. Call the lucky participants in front and ask them to arrange the picture based on the scenario shown in the photos.

### Facilitator's Key Guide

- As the participants arranged the pictures correctly. Ask the questions at the end of the activity.
- ✓ *What did you notice about the pictures arranged by the participants?*
  - ✓ *What does it show?*

### III. Lesson Proper

#### Facilitator's Note [6/6]

- ▶ Initiate a meaningful conversation by posing the question, "Is it possible to identify a harmful fire in its early stages?" This question aims to guide individuals in comprehending the various phases and behaviors of fires.

#### “Can we detect a destructive fire from its initial stage ?” [1/2]

Understanding the stages of fire is understanding its behaviors. Using it, individuals can prevent fires, take appropriate actions, minimize their impact, and control their spread.

#### Stages of a Fire [2/2]

Fires can be devastating and can happen anytime when you least expect them. Generally, the earlier you can suppress a fire, the better. This is because fires grow in intensity, temperature, and size if they have the resources they need to burn- oxygen, heat, fuel, and, in some cases, a chain reaction.

The NFPA and most other standards classify four stages of a fire.

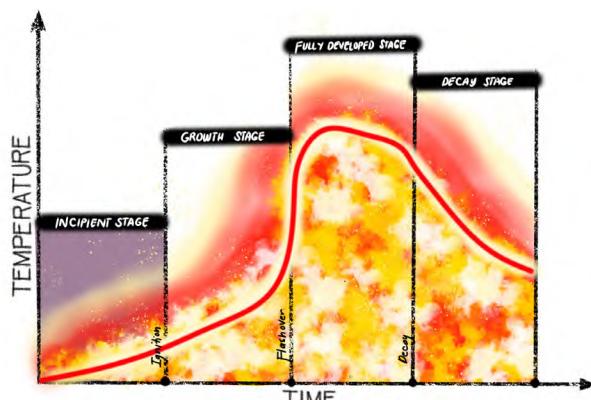
#### *Ignition Phase/Incipient Stage*

The incipient stage is when fighting a fire is crucial because it is easiest to suppress at this point and will cause the most minor damage.

It's difficult to manually fight and extinguish a fire at this stage because it takes time to identify the fire, locate a handheld extinguisher, and perform the proper steps to spray it. That's why Fire trace's detection tubing detects and suppresses fires automatically during this early stage. Fire suppression systems allow you to suppress the fire right after ignition without needing a person to be present.



It shows the example of Ignition Phase of Stages of Fire



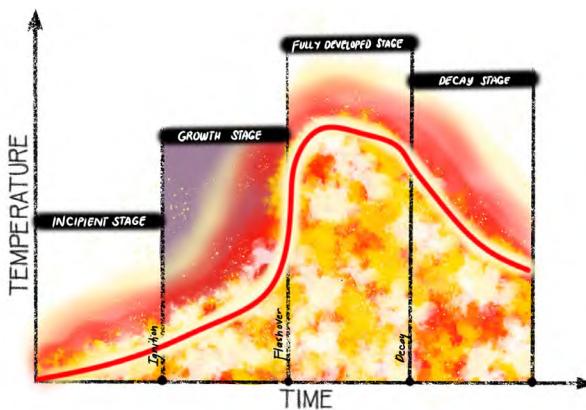
It shows the highlighted Ignition Phase of Stages of Fire

## Growth Phase/ Smouldering Stage

Once a fire reaches this stage, it becomes harder to control. If a fire detector recognizes a fire at this point, you have little time to put it out before it reaches a flashover.

NFP 921 defines flashover as “a transitional phase in the development of a compartment fire in which surfaces exposed to thermal radiation reach its ignition temperature simultaneously, and fire spreads rapidly throughout the space, resulting in full room or total involvement of the compartment or enclosed area.”

This means there is a sudden ignition of everything combustible in a contained area. Temperatures can rise to 1,000 degrees Fahrenheit in just a few seconds. Humans are not likely to survive in a compartment that has a flashover.



It shows the highlighted Growth Phase of Stages of Fire



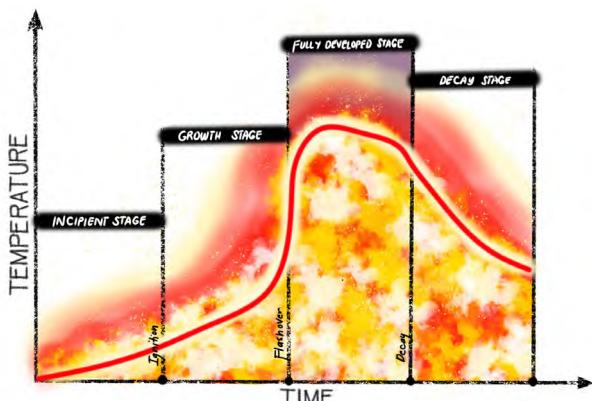
It shows the example of Growth Phase of Stages of Fire

## Fully Developed Stage

Attempting to control a fully developed fire presents a formidable challenge. Once a fire has reached this stage, it is operating at maximum temperatures, resulting in the most intense heat damage. The difficulty lies in the fact that, if you haven't successfully intervened before this critical juncture, the odds of effectively halting the fire diminish considerably. The heightened temperature and intensity make the firefighting efforts more complex, requiring a strategic and concerted response to mitigate the extensive heat impact.



It shows the example of Fully-Developed Phase of Stages of Fire



It shows the Fully-Developed Phase of Stages of Fire

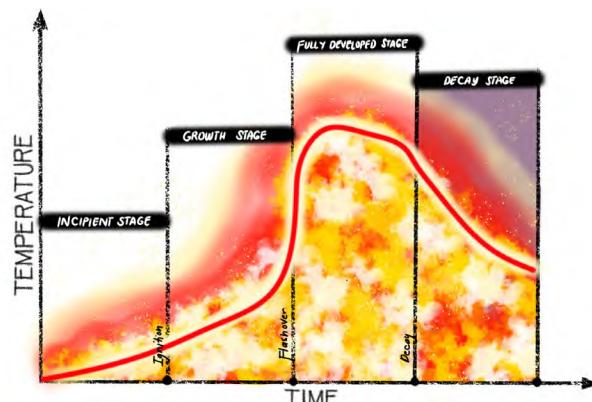
### Decay Stage

A fire's decay stage is when it decreases in intensity until it is either smoke or non-existent. If there was no suppression, this is likely when there is nothing left for the fire to burn.

The key parameters determining fire growth include the interior finish of space, fuel continuity, feedback, material ignitability, fuel's thermal inertia, and flames' proximity to walls.



It shows the example of Decay Phase of Stages of Fire



It shows the highlighted Decay Phase of Stages of Fire

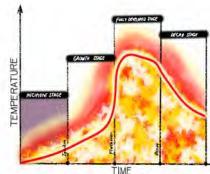
## PowerPoint and Visual Aids

# Fire Development Stages and Its Contributing Factors

1

### Incipient Stage

The incipient stage is when fighting a fire is crucial because it is easiest to suppress at this point and will cause the most minor damage.



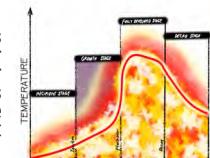
5



2

### Growth Stage

Once a fire reaches this stage, it becomes harder to control. If a fire detector recognizes a fire at this point, you have little time to put it out before it reaches a flashover.



6

**Goal:** To fully understand the stages of fire development.

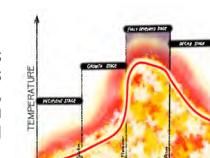
**Objectives:** At the end of the session, the participants will be able to:

1. Explain each stage of fire;
2. Discuss the contributing factors that lead to the development of destructive fire;
3. Appreciate their roles in suppressing a destructive fire; and
4. Familiarize local hotline numbers Explain the most straightforward terms of the origin of the fire.

3

### Fully Developed Stage

A fully developed fire is the hardest to suppress because, at this point, the fire is at maximum temperatures and causing the most heat damage.



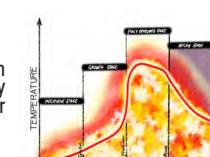
7

*“Can we detect a destructive fire from its initial stage?”*

4

### Decay Stage

A fire's decay stage is when it decreases in intensity until it is either smoke or non-existent.



8

- *Why do we need to know the stages of fire?*
- *What are the contributing factors for its development?*

9

Thank You!

-End-

10

## **Subject 3**

**Fire Safety Lectures and Seminars for the General Public**

# **Common Causes and Classes of Fire**



ILLUSTRATION BY: FO1 Ricjun P Almacen

# In this Subject 3...

## Goal

To fully understand the Common Causes and Classes of Fire.

## Objectives

By the end of the session, participants should be able to:

1. Identify the common causes of fire;
2. Differentiate the classes of fire; and
3. Discuss the common causes and classes of fire.

---

### Subject Aids Needed:

#### A. Primary Tools

1. Printed Trapaulins
2. Flip Cards
3. Visual Examples
  - i. Pictures of each common causes of fire

#### B. Alternative Tools

1. Projector with screen
2. PowerPoint Presentation
  - i. Pictures of fire incidents that occurred in the Philippines
  - ii. Any usable means of making an example

### Total Time of Delivery:

*45 minutes*

---

## Subject Overview

**Purpose:** To equip the participants with knowledge about the common causes and classes of fire. Through visual examples and alternative tools, the participants will learn about the common reasons for fire and gain knowledge about the different classes of fire.

**General Guidance:** The lecturer must teach the lesson so the participants will understand the concept more easily. Use simple words in elaborating the lesson and show positive energy to make them more interested in the topic. Be the source of information.

**Things to Consider:** The participants are commonly seen in the community, ages 20 and above. In explaining the lesson, we should always consider their level of comprehension. Deliver the topic in the simplest terms. Also, their participation and interactions are important. So, connect with them by making jokes but be sensitive to their differences. Always stick to the topic.

# Cheat Sheet

## Subject Outline:

Audio/Visual Aids	Outline	Notes
PPTS-1	<b>1. Preparatory</b>  1.1 Greet the participants and start by introducing your name and your teammates.	Facilitators may roam around and select participants to be interviewed to get their attention.
	1.2 Engage participants through the " <b>Scene Size Up!</b> " portion. Ask the following questions: <ul style="list-style-type: none"><li>• <i>How old are you? Have you witnessed a fire incident?</i></li><li>• <i>Where did the incident happen?</i></li><li>• <i>What did you do after witnessing a fire?</i></li><li>• <i>What do you think are the causes of fire?</i></li></ul>	The facilitator may talk about the participants' daily lives to get their hearts and be more secure to promote open communication during the session.
PPTS-2	<b>2. Motivation</b>  2.1 Show some pictures and video clips about a fire incident in the Philippines.	The facilitator may use colloquial terms in communicating with the participants and may add funny stories and lines of jokes for the participants to get more comfortable.
	2.2 Ask the following questions: <ul style="list-style-type: none"><li>• <i>Have you heard or watched the news about the Philippines fire incident ?</i></li><li>• <i>What do you think is the reason or causes of that fire incident?</i></li><li>• <i>Do you think we can prevent that from happening?</i></li></ul>	Allow the participants to observe what they have seen in the pictures and videos.
PPTS-3	2.3 Present subject objectives.	Gather ideas and opinions from their interactions regarding the examples.
PPTS-4	<b>3. Lesson Proper</b>  3.1 Start by discussing the topic, " <i>In your own opinion, what are the things that would create a fire?</i>	Always present the Goals and Objectives of the lesson first. For them to become aware of what are the things, they need to learn.
		Present the pictures and utilize the flip cards.

# Cont.

Audio/Visual Aids	Outline	Notes
PPTS-5-7 LG3-1	3.2 Discuss the Common Causes of Fire	Always use the sample pictures to discuss each common cause of fire. Cater questions and clarifications.
PPTS-8-11 LG3-2	3.3 Dicuss Fire Prevention Tips and Safety Measures	Allow them to share personal experiences and thoughts regarding fire prevention and measures they take at home.
PPTS-12-16 LG3-3	3.4 Discuss the Classes of Fire A. Class "A" Fire B. Class "B" Fire C. Class "C" Fire D. Class "D" Fire E. Class "K" Fire	Ensure they become acquainted with and comprehend the distinctions among each class of fire, and offer brief precautions on how to manage each.
4. Generalization		
PPTS-17-19	4.1 Summarize the lesson and provide a generalization of the things the participants must remember.	
5. Closing Evaluation		
PPTS-20	5.1 Make a quick review of the Lesson Objectives: <ul style="list-style-type: none"><li>• <i>Have we understood what are the possible causes of fire?</i></li><li>• <i>What are the classes of fire?</i></li></ul>	
PPTS-21	5.2 Ask if there are questions or clarification. 5.3 End the subject	

# Lecturer's Guide and Talking Points

## I. Preparatory

Before the discussion, engage the participants with the following questions:

- How old are you? Have you witnessed a fire incident?
- Where did the incident happen?
- What did you do after witnessing a fire?
- What do you think are the causes of fire?

### Facilitator's Key Guide

- Talk about the participants' daily lives to get their hearts and be more secure to promote open communication during the session. Use colloquial terms in communicating with the participants and may add funny stories and lines of jokes for the participants to get more comfortable.

## II. Motivation

Below is a sample picture of the fire incident that transpired in the Philippines. Show it to the participants and let them express what they see in the picture and ask the following questions:

### Guide Questions

- How old are you? Have you witnessed a fire incident?
- Have you heard or watched the news about the Philippines fire incident ?
- What do you think is the reason or causes of that fire incident?
- Do you think we can prevent that from happening?



It shows the fire at the Central Post Office in Manila lasted over seven hours on May 22, 2023.

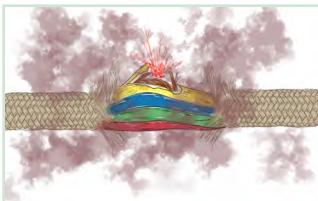
### Facilitator's Key Guide

- The facilitator may use pictures of a fire incident in the Philippines or a fire incident in the community to catch the participants' attention. After the picture is presented, ask the question:
- ✓ *In your own opinion, what are the things that would create fire ?*

### III. Lesson Proper

#### Facilitator's Note [1/6]

- ▶ Employ illustrations or images depicting examples of common fire causes, and initiate a question by asking, "What are potential sources of fires at home?"



It depicts a fire starting due to defective wiring.



It portrays fire being caused by defective appliances.



It demonstrates that cooking can lead to a fire in the kitchen.



It shows children playing with lighted matches.

#### Common Causes of House Fires [1/3]

March marks the start of summer in the Philippines, and it is also the month with the hottest temperature and humidity every year. The Bureau of Fire also declares March as Fire Prevention Month.

According to the National Fire Protection Association, there will be over 13,029 fire incidents in 2022, and the common causes of fires are the following:

#### Faulty Wiring

Most fire incidents occur due to faulty electrical wiring. Among these are excessive use of extension cords, torn wires, and substandard electrical wires. Some people tend to set up electrical connections to save money from hiring a professional technician. As a result, electric wires are either incorrect or improperly connected.

#### Defective Electrical Equipment or Appliances

Electrical equipment or appliances can also cause a house fire if defective. This includes loose or frayed electrical cords and plugs, clogged electrical plugs on outlets, and unplugged appliances when not in use.

Note that fuses blow and circuit breakers trip when overloaded. It can also cause a fire if you try to fix the wiring or electrical systems, especially if you're not an expert.

#### Cooking

Overheating pans or oil while cooking is also one reason fire starts in the kitchen. Also, any distraction while preparing your meal can lead to cooking fires.

#### Children Playing With Fire

Kids always have a playful instinct and are curious about everything. Once they see you lighting up matches, lighters, or torches, they are usually amazed because it's pleasing to their eyes. As a result, they want to copy what you're doing. Hence, it can also lead to serious home fires.

#### Ovens and Stoves Left Unattended

While it's effective to multi-task some household chores while cooking, heating equipment like ovens and stoves left unattended can also harm your home. Oven mitts, dish rags, or hand towels can easily catch fire anytime near the stove.



It illustrates that leaving the oven unattended can result in a fire.

### **Lit Candle Unattended**

Unfortunately, Filipinos always experience power outages during summer while others don't have the electricity to light up their homes. Candles are the cheapest way to keep the home warm and pleasant, and things are visible to see when candles are lit up.

However, if left unattended or in the wrong place, candles may spark fires. Your pets might stumble upon it, or candles are placed near combustible materials like curtains and wallpapers, which causes candle fires.

### **Smoking Carelessly**

Cigarette butts or embers, if thrown carelessly, can also cause a fire. It might not have put out the flame when disposed of, so there's a huge possibility it may land on combustible materials.

#### **Facilitator's Note [2/6]**

- Highlight the significance of the topic, particularly the danger of leaving candles unattended, considering that many Filipinos still rely on candles, and frequent power interruptions are common. Additionally, acknowledge that there are remote areas without electricity access, amplifying the relevance of addressing this concern.



It shows an elderly person carelessly smoking.

**Facilitator's Note [3/6]**

- ▶ Inform the participants that it is totally prohibited to keep flammable liquids at home. Stress the significance of making sure they are stored properly, keeping them away from open flames, and avoiding heat exposure if it cannot be avoided.

***Improperly Stored Flammable Liquids***

You may not have known or forgotten that you have flammable liquids in your garage or kitchen cabinets. Liquids like solvents, thinners, paints, fuels, adhesives, and cleaning agents may explode if improperly stored or not kept in a well-ventilated place.



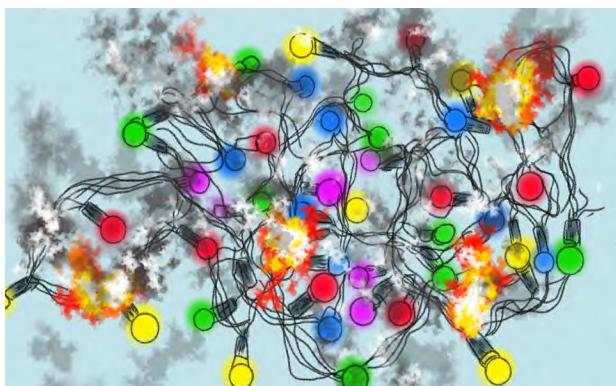
It displays flammable liquids being improperly stored.

***Lighting***

Light fittings and shades too close to light globes can generate heat and friction. If knocked-over lamp bases are not replaced or removed, they can be hazardous and are subject to fire risks.

***Substandard Christmas Tree Light Decorations***

Light connections and wiring of Christmas tree lights are delicate and can easily be damaged, while others are made from substandard materials. If improperly stored, it can also create friction against other things that can start a fire.



It reveals the danger of burning substandard Christmas lights decorations.

**What are the other causes of fire in your homes? Are there any causes of fire that you know?**

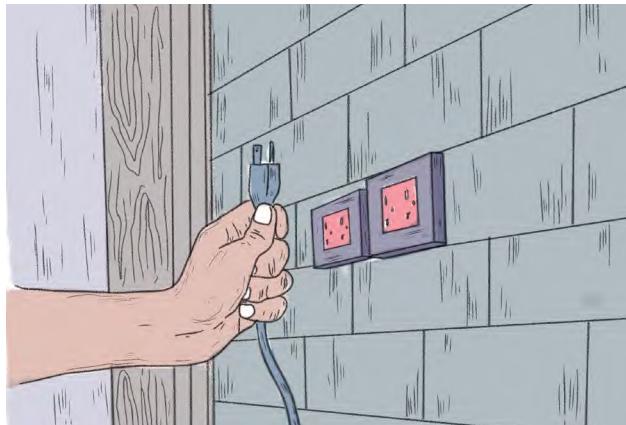
## Fire Prevention Tips and Safety Measures [2/3]

Fire incidents can happen to anyone, and many residents fail to exercise fire safety because they want to save their property. Another contributing factor why some fire incidents were not stopped because the emergency response team is too far from the incident's location.

No one wants to be a fire victim because it can cost a fortune to start over again when everything is lost. Although you can still buy an affordable house and lot, it takes time to save money. But you can prevent them from happening if you follow some fire prevention tips and safety measures.

### Unplug or Disconnect Appliances When Not in Use

Electrical equipment or appliances that are plugged in not only increase your bill consumption but can also cause house fires. Therefore, be sure to unplug appliances when not in use, especially if no one is in the house.



IN THE ILLUSTRATION: It demonstrates the practice of unplugging appliances when they are not in use.

### Have Fire Extinguisher or Install Fire Protection System

Investing in fire protection systems like smoke detectors or alarms can also help you protect against fire incidents. Or keep a fire extinguisher in your home if you have an insufficient budget. You can also install lightning rods to your outdoor antennas to prevent your home from fire due to a lightning strike.

### Facilitator's Note [4/6]

- Elaborate on the significance of understanding Fire Prevention Tips and Safety Measures to steer clear of common fire triggers. Discuss the importance of this knowledge in safeguarding lives, protecting property, and fostering a secure environment. Emphasize how these preventative measures contribute to a proactive approach, mitigating the risk of fires and ensuring the well-being of individuals and their surroundings.

**Facilitator's Note [5/6]**

- ▶ Provide detailed information on the correct procedures for handling, positioning, and maintaining a fire extinguisher. Clarify the appropriate steps to take when using a fire extinguisher, the optimal placement of extinguishers in different settings, and the importance of regular maintenance to ensure their effectiveness in emergency situations.



It shows fire extinguisher installed in the kitchen.

***Stay in the Kitchen while Cooking***

As much as possible, stay focused when doing household chores, specifically when cooking. Avoid multitasking, too. Seek assistance from a family member if you need more hands.



It shows a person cooking attentively in the kitchen.

***Remove or Replace Damaged Appliances***

Sometimes, it is best to let go of other things that might endanger your family, even if they have sentimental value. If these equipment or appliances have torn wires, get rid of them. You're not only saving your family from house fires, but you also save energy consumption.

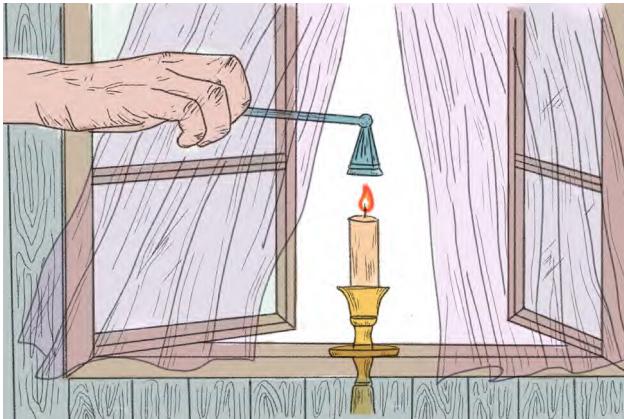


It shows a person disposing a damaged appliance.

***Keeping an Eye on Lit Candle***

Since power outages cannot be avoided, always be mindful of the lighted candles. Keep them away from your pets or children to avoid accidents. Buying solar

lights or lamps is also a great investment instead of frequently using candles.



It highlights the importance of being mindful of lighted candles

*To beat the enemy, one must know the enemy right, likewise, for fire. Fire is not a single-faceted enemy. It is a multi-faceted opponent, five faces to be precise.*

## Classes of Fire [3/3]

Fires are classified according to the type of fuel that is burning. It is very important to understand the different classifications of fires to know how to extinguish them. It is also essential to choose the type of fire extinguisher because fire extinguishers are classified according to the fires they extinguish. Using the wrong substance on a particular fire class is useless and may worsen the damage. Hence, it is crucial to know the fuel source for a fire before fighting it. Here are the classes of fire.

### Class A Fires

These are solid combustible materials of organic nature such as wood, cardboard, paper, hardboard, rubber, and soft furnishings such as carpets and curtains, in which combustion normally occurs with the formation of glowing embers.<sup>1</sup>

Fuel in this class of fire, when burned, produces ashes. Class A fires are the most common of the five different classes of fires. They occur when combustible materials like wood, paper, fabric, trash, and light plastics catch fire.

These accidental fires are abundant across various industries so it's recommended to have adequate protection against "ordinary" fires in addition to other

### Facilitator's Note [6/6]

- Describe the various classes of fire and emphasize that each requires specific extinguishing methods, including conventional methods of fire suppression such as blanketing (removal of oxygen), starving (removal of fuel), and cooling (removal of heat)



It presents examples such as newspapers, wood, and clothes to represent Class A fire.

<sup>1</sup> BFP Oplan Ligtas na Paaralan, Safe School Initiative, Implementing Guidebook 2019

condition-specific fires. Despite being “ordinary” don’t rule this fire class as low risk. If fuel present is abundant these fires can intensify quickly. It’s best to extinguish a Class A fire using water or monoammonium phosphate before it spreads.<sup>2</sup>

### *Class B Fires*



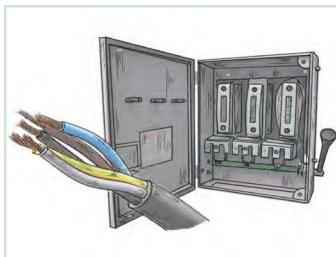
It shows gasoline, paint and castor oil as an examples of Class B fire.

These are *flammable gasses and liquids* such as solvents, oil, gasoline, paint, lacquers, tars, and other synthetic spreads rapidly and, unless properly secured, can rekindle after extinguishing flames.<sup>1</sup>

Class B fires involve flammable liquids and gases, especially fuels like petroleum or petroleum-based products such as gasoline, paint, and kerosene. Other highly flammable gases are propane and butane, which are common causes of Class B fires. The best way to deal with these fires is by smothering them or removing oxygen using foam or CO<sub>2</sub> fire suppression equipment.<sup>2</sup>

*| Be aware that Class B fires do not include grease or cooking fires belonging to their class, Class K.*

### *Class C Fires*

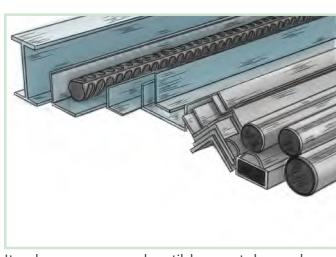


It shows wires as an example of Class C fire.

These are *electrical fires* involving energized electrical equipment, such as wiring, controls, motors, data processing panels, or appliances. They can be caused by a spark, power surge, or short circuit and typically occur in locations that are difficult to reach and see.<sup>1</sup>

Electrical fires fall under Class C and are common in facilities that use electrical equipment heavily. Electrical fires require non-conductive materials to extinguish the flame, so water alone is not a good solution. Facilities with sensitive equipment may prefer clean agent suppression because it won’t leave residue or damage electrical equipment.<sup>2</sup>

### *Class D Fires*



It shows a combustible metal, such as magnesium, as an example of Class D fire.

These are *combustible metals*, such as magnesium, sodium, and potassium. Combustible metal fires are unique industrial hazards that require special dry powder agents.<sup>1</sup>

Class D fires are not as common as the other classes but require special attention because they can be especially difficult to extinguish. Metallic fires involve flammable materials like titanium, aluminum, magnesium, and potassium, commonly occurring in laboratories.

Class D fires cannot be addressed with water, which can

<sup>2</sup> Dickinson, M, 2021, Fire Safety, <https://vanguard-fire.com/what-are-the-5-different-classes-of-fires>

worsen the fire and be potentially dangerous. Dry powder agents are the best solution for smothering the flames and limiting damage to property or people.<sup>2</sup>

### *Class K Fires*

These are *grease fires* or *cooking fires*, which involve combustible cooking oils and fats. Class K fires involve flammable liquids, similar to Class B fires, but are specifically related to food service and the restaurant industry. These common fires start from the combustion of liquid cooking materials, including grease, oils, and vegetable and animal fats, because they can spread quickly and be difficult to manage.

Class K fires are some of the most dangerous. Water can worsen the situation, but smothering the flames or using a wet agent fire extinguisher is effective.<sup>2</sup>



It displays a cooking oil as example of Class K fire.

### *Here's How to Remember Classes of Fire*

We usually use signs or reminders to remember things easily for memory retention. When we hear those cues, we can certainly recall the matter. Here are some mnemonics for memory retention.

#### *It starts with the question, what is burning?*

What's burning?

Wood, paper.

When you burn wood or paper it leaves Ash.

A is for ASH

What is burning?

Liquids (petroleum).

When you heat liquids on the stove, they Boil.

B is for BOIL

What is burning?

Electrical.

Electricity has Current.

C is for CURRENT

What is burning?

Metal.

If you hit your metal truck with a hammer, it puts a Dent in it.

D is for DENT

What is burning?

Cooking oils, animal fats.

Just like in your Kitchen.

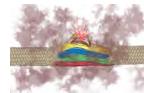
K is for KITCHEN

## PowerPoint and Visual Aids

### Common Causes and Classes of Fire

1

#### Common Causes of House Fire



Faulty Electrical  
Wiring



Defective Electrical  
Equipment or  
Appliances



Cooking

5



2

#### Common Causes of House Fire



Oven and Stove Left  
Unattended



Unattended Lit  
Candle



Children Playing  
With Fire

6

**Goal:** To fully understand the Common Causes and Classes of Fire.

**Objectives:** At the end of the session, the participants will be able to:

1. Identify the common causes of fire;
2. Differentiate the classes of fire; and
3. Discuss the common causes and classes of fire.

3

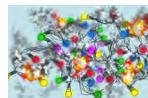
#### Common Causes of House Fire



Smoking Carelessly



Improperly Stored  
Flammable Liquids



Substandard  
Christmas Tree Light  
Decoration

7

*In your own opinion, what are the things that would create fire ?*

4

*In your opinion, what safety steps should we take to avoid fires?*

8

### Fire Prevention Tips and Safety Measures



Unplug or Disconnect Appliances When not in Use



Stray in the Kitchen While Cooking



Have Fire Extinguisher or Install Fire Protection Systems

9

### Classes of Fire

#### Class B Fires

These are **flammable gasses and liquids** such as solvents, oil, gasoline, paint, lacquers, tars, and other synthetic spreads rapidly and, unless properly secured, can rekindle after extinguishing flames.



13

### Fire Prevention Tips and Safety Measures



Keep an Eye on Lighted Candles



Remove or Replace Damaged Appliances

10

### Classes of Fire

#### Class C Fires

These are **electrical fires** involving energized electrical equipment, such as wiring, controls, motors, data processing panels, or appliances. They can be caused by a spark, power surge, or short circuit and typically occur in locations that are difficult to reach and see.



14

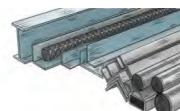
*To beat the enemy, one must know the enemy right, likewise, for fire. Fire is not a single-faceted enemy. It is a multi-faceted opponent, five faces to be precise.*

11

### Classes of Fire

#### Class D Fires

These are **combustible metals**, such as magnesium, sodium, and potassium. Combustible metal fires are unique industrial hazards that require special dry powder agents.



15

### Classes of Fire

#### Class A Fires

These are **solid combustible materials** of organic nature such as wood, cardboard, paper, hardboard, rubber, and soft furnishings such as carpets and curtains, in which combustion normally occurs with the formation of glowing embers



12

### Classes of Fire

#### Class K Fires

These are **grease fires or cooking fires**, which involve combustible cooking oils and fats. Class K fires involve flammable liquids, similar to Class B fires, but are specifically related to food service and the restaurant industry.



16

### *How to Remember Classes of Fire*

*It starts with the question, what is burning?*

What's burning?  
Wood, paper.  
When you burn wood or paper it leaves Ash.  
A is for ASH

What is burning?  
Liquids (petroleum).  
When you heat liquids on the stove, they Boil.  
B is for BOIL

17

### Thank You!

-End-

21

### *How to Remember Classes of Fire*

What is burning?  
Electrical.  
Electricity has Current.  
C is for CURRENT

What is burning?  
Metal.  
If you hit your metal truck with a hammer, it puts  
a Dent in it.  
D is for DENT

18

### *How to Remember Classes of Fire*

What is burning?  
Cooking oils, animal fats.  
Just like in your Kitchen.  
K is for KITCHEN

19

- *Have we understood what are the possible causes of fire?*
- *What are the classes of fire?*

20

## **Subject 4**

**Fire Safety Lectures and Seminars for the General Public**

# **Good Housekeeping, Kitchen and Cooking Fire Safety**



ILLUSTRATION BY: F01 Ricjun P Almacen

# In this Subject 4...

## Goal

To impart awareness about kitchen fire safety and promote good housekeeping and cooking safety tips.

## Objectives

By the end of the session, participants should be able to:

1. Disseminate ways to maintain good housekeeping;
2. Inform the audience about kitchen fire safety and how to prevent and handle kitchen fire accident situations; and
3. Provide awareness about fire safety tips in cooking

### Subject Aids Needed:

#### A. Primary Tools

1. Printed Trapaulins
2. Flip Cards
3. Visual Examples
  - i. Video Presentation

#### B. Alternative Tools

1. Projector with screen
2. PowerPoint Presentation

### Total Time of Delivery:

*25 to 30 minutes*

## Subject Overview

**Purpose:** To introduce to the participants the importance of kitchen fire safety & how to deal with it in an emergency. The participants should be made aware of good housekeeping and how to prevent kitchen fires by learning the safety tips for cooking.

**General Guidance:** In this subject, the lecturer/facilitator must deliver the subject in the simplest terms that are understandable to the public. Facilitators should ensure the lecture is fun and enthusiastic to capture the audience's attention. In addition to this, the lecturer may prepare the following aides.

**Things to Consider:** The participants are community members, roughly around 18 and above. Simplicity and ease of understanding must be considered when delivering the subject. Direct interaction with the participants is advised in this subject, such as moving around the lecture venue and making jokes. Sensitivity should be considered when making or citing examples, especially concerning personal details. Stay on the topic and the schedule as much as possible.

# Cheat Sheet

## Subject Outline:

Audio/Visual Aids	Outline	Notes
PPTS-1	<h3>1. Preparatory</h3> <p>1.1 Greet the participants and start by introducing your name and your teammates.</p>	Facilitators may roam around and select participants to be interviewed to get their attention.
	<p>1.2 Engage participants by asking the following initial questions:</p> <ul style="list-style-type: none"><li>• <i>What is your name? What makes you busy the past few days?</i></li><li>• <i>(If you happen to interview a housewife) How will you organize your house as a housewife?</i></li><li>• <i>Do you segregate trash?</i></li><li>• <i>Who among you runs a business?</i></li><li>• <i>What practices did you do to maintain a well-organized and clean space?</i></li><li>• <i>How will you promote good housekeeping practices?</i></li></ul>	The facilitator may talk about the participants' daily lives to get their hearts and be more secure to promote open communication during the session.
PPTS-2	<h3>2. Motivation</h3> <p>2.1 Start by showing the audience a video of a kitchen, a picture that catches on fire because of open flames from burning oil, or a messy kitchen.</p>	Give the participants time to interact with the video/ picture and take note of their concerns.
	<p>2.2 Ask the following questions:</p> <ul style="list-style-type: none"><li>• <i>What did you see in the picture/video?</i></li><li>• <i>Have you experienced that in your homes?</i></li><li>• <i>What do you think is the reason why it happens?</i></li></ul>	The facilitator may use the primary or alternative tool for motivation.
PPTS-3	<p>2.3 Present subject objectives.</p>	Refer to Goals and Subject Objectives
PPTS-4 LG4-1	<h3>3. Lesson Proper</h3> <p>3.1 Start by discussing the topic, <i>"Why should we pay attention to housekeeping in the kitchen?"</i></p>	Utilize PowerPoint/flip cards for the presentation.

# Cont.

Audio/Visual Aids	Outline	Notes
PPTS-5 LG4-2	3.2 Discuss what a kitchen fire is.	Allow the participants to express their examples.
PPTS-6-7 LG4-3	3.3 Discuss the common causes of kitchen fires.	The lecturer may ask the participants to give examples of possible kitchen fire causes.
PPTS-8-15 LG4-4	3.4 Discuss the key to kitchen fire safety and cooking fire safety tips.	The participants must be engaged in giving examples.
PPTS-16-19 LG4-5	3.5 Discuss what to do if a kitchen fire starts.	The participants must be engaged in giving examples.
4. Generalization		
	4.1 Summarize the lesson and provide a generalization of the things the participants must remember.  Remember, the most important thing is to get out of the house safely. Don't try to fight the fire or save your belongings if it puts you in danger.	
5. Closing Evaluation		
PPTS-20	5.1 Review the objectives by asking the questions: <ul style="list-style-type: none"><li>• <i>Have we understood the advantage of good housekeeping in the kitchen?</i></li><li>• <i>Have we understood the possible causes of kitchen fires?</i></li><li>• <i>Do we now know how to prevent kitchen fires?</i></li><li>• <i>Do we now know what to do if a kitchen fire starts?</i></li></ul>	
	5.2 Ask if there are questions or clarification.	
PPTS-21	5.3 End the subject	

# Lecturer's Guide and Talking Points

## I. Preparatory

Before the discussion, engage the participants with the following questions:

- What is your name? What makes you busy the past few days?
- (If you happen to interview a housewife) How will you organize your house as a housewife?
- Do you segregate trash?
- Who among you runs a business?
- What practices did you do to maintain a well-organized and clean space?
- How will you promote good housekeeping practices?

### Facilitator's Key Guide

► Talk about the participants' daily lives to get their hearts and be more secure to promote open communication during the session. Use colloquial terms in communicating with the participants and may add funny stories and lines of jokes for the participants to get more comfortable.

## II. Motivation

Start by showing the audience a video of a kitchen, a series of pictures that catch fire because of open flames from burning oil, or a messy kitchen.

### Guide Questions

- What did you see in the picture/video?
- Have you experienced that in your homes?
- What do you think is the reason why it happens?



It shows a pan in the kitchen on fire, and the flames are getting more intense.



It shows a man is making an effort to extinguish a fire emanating from a frying pan.

### Facilitator's Key Guide

► Refer to the YouTube link provided for additional content related to this video.  
Inside Edition. (2018, May 8). How to Safely Put Out a Kitchen Fire [Video]. YouTube. <https://www.youtube.com/watch?v=AFwkGTEles8>

### III. Lesson Proper

#### Facilitator's Note [1/12]

- ▶ Inform the participants about the significance of maintaining good housekeeping, emphasizing its role in preventing fires at home, particularly in the kitchen where a majority of fires occur, often linked to flammable liquids like oils.

#### ► *Housekeeping in the Kitchen [1/5]*

##### *Good Housekeeping*

Good housekeeping can help control or eliminate kitchen hazards. Poor housekeeping practices frequently contribute to accidents. If the sight of paper, debris, clutter, and spills is accepted as normal, other more serious hazards may be taken for granted.

Housekeeping is not just about cleanliness. It also includes keeping work areas neat and orderliness, maintaining halls and floors free of slip and trip hazards, and removing fire-prone materials (e.g., paper, cardboard) and other fire hazards from work areas. Good housekeeping is also a basic part of fire accident prevention.



It shows the concept of Good Housekeeping.

#### *Kitchen Fire [2/5]*

Kitchen fires are an extremely common occurrence that carry substantial risks. The possible outcomes include harm to oneself, destruction of property, and even fatalities. For this reason, it is crucial to continue being extremely vigilant during cooking. It entails a diligent dedication to keeping a careful eye on the stove or oven and following the guidelines for using kitchen appliances. Any cooking activity should never be left alone. Furthermore, it is imperative to use caution while positioning objects like dish towels near heat sources in order to stop the spread of fire hazards in the kitchen. By taking these safety measures and paying close attention, people can greatly lower the risk of cooking fires and the negative consequences that come with them.



It depicts a kitchen fire occurring at home.

## Common Causes of Kitchen Fire [3/5]

### Unattended cooking

It is important to stay in the kitchen at all times, especially when using the stove. It is important to turn off the gas stove and the stove itself carefully before leaving the cooking area. This preventive action is essential to preventing the possible start of a fire. Ignoring this step could result in unintentional occurrences, which highlights how crucial it is to carefully follow safety procedures in order to reduce the risk of fire in the kitchen.

### Facilitator's Note [2/12]

- ▶ Explain to the participants in a clear and concise manner the different typical causes of kitchen fires and the need of maintaining utmost cleanliness in this area.



It shows a person cooking without supervision.

### Cooking with a dirty stove top

Grease and other food debris can easily catch fire, so it is important to keep your stovetop clean, free from oil grease.



It portrays a kitchen with a stove top that is dirty or not properly cleaned.

#### Facilitator's Note [3/12]

- ▶ Emphasise how important it is to choose cookware that is compatible with particular cooking appliances because people have a propensity to choose less priced, lower-quality products.

#### Using the wrong cookware

Using cookware that is not suitable for the stovetop, such as plastic or paper, can cause a fire. Always use cookware that is appropriate for the heat source you are using.



It demonstrates the use of inappropriate cookware during the cooking process.

#### Overheating oil

When cooking oil overheats, there could be a fire risk. It is imperative to use a thermometer to ensure that the oil stays at a safe temperature in order to protect against this risk. This keeps the oil from getting to the point where it could catch fire and encourages safe cooking techniques.

It becomes essential to learn how cooking oil reacts to heat when there isn't a thermometer available. Knowing its features, such as the smoking point, makes it easier to determine the right cooking temperature and lowers

the possibility of an unintentional ignite. Additionally, avoiding unanticipated events like flare-ups or fires requires knowing the right methods for managing and using cooking oil. By taking these preventative steps, people may improve cooking safety and greatly reduce the likelihood of fire occurrences during



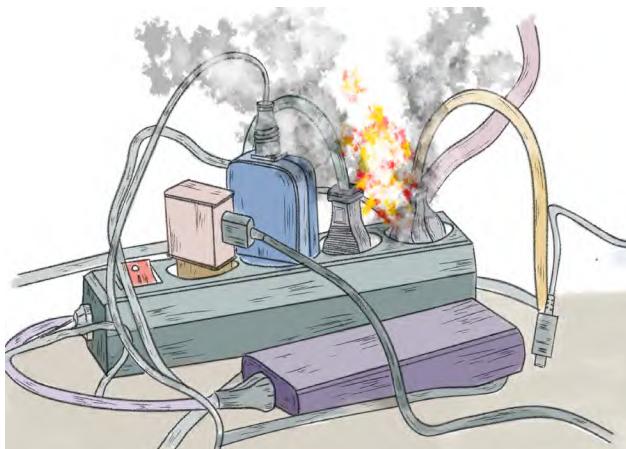
It shows overheating of cooking oil.

### *Electrical malfunctions*

Short circuits and other electrical problems can result in a kitchen fire. It's advisable to routinely check and maintain the appropriate operation of all electrical appliances in your kitchen in order to reduce this risk. Electrical fires can be prevented in large part by taking easy precautions like looking for frayed wires, making sure plugs are tight, and taking immediate action when something is amiss. By taking these safety measures, you can lessen the chance of accidents and make your kitchen a safer place.

#### Facilitator's Note [4/12]

- Cite a recent news report on fire incidents, highlighting the prevailing causes of fire in the Philippines predominantly stem from electrical malfunctions



It showcases an example of electrical malfunction.

## *Key to Kitchen Fire Safety & Cooking Fire Safety Tips [4/5]*

### **Facilitator's Note [5/12]**

- ▶ Encourage participants to commit the 5S Principles to memory as a fundamental aspect of ensuring kitchen fire safety.

### ► *The Application of 5S Principles*

#### *Shine*

Includes cleanliness surrounding the kitchen.

#### *Sort*

Sorting all unnecessary materials in the kitchen especially light materials such paper, plastic and other ordinary combustible materials.

#### *Standardize*

Deals on proper arrangement of your equipment and utensils including your solid waste management.

#### *Sweep*

Sweeping the premises of the kitchen, removes dust or dirt in the kitchen. You may use an absorbent materials like towel, paper towel, mat, sponge or cotton to remove dirt and excess oils.

#### *Safety*

Includes checking regularly your cooking equipment for possible defects as well as the LPG from any leakage, if possible, the construction materials used in the kitchen shall be fire resistive.

*Keep flammable and combustible materials in safe storage and away from the open flames of the kitchen.*

Removing combustible objects from the kitchen and avoiding the storage of dangerous products there are sensible safety precautions. Keep in mind that heat is a constant factor in the kitchen. By shielding combustible materials from potential ignition sources, this precaution helps lower the danger of unintentional fires. Keeping in mind that the kitchen is always heated emphasises how crucial it is to follow safety regulations and take preventative measures to reduce the likelihood of fire occurrences.



It depicts the proper safekeeping of combustible or flammable materials.

*Regularly maintain the cooking device or equipment in good condition and check if they are still functional or serviceable.*

Defective appliances may cause malfunctioning and may ignite a fire in one instant. Better to buy a new one or have it checked by a competent electronic technician.



It shows cleaning and maintaining a cooking equipment such as oven, while checking if its in good condition.

*As a preventive approach, it is ideal to establish a kitchen that is separate or adjacent to the main house or structure. The place should be open and well ventilated.*

It is strongly recommended that a complete fire suppression and alarm system be installed in an enclosed kitchen. This improves safety precautions and

#### Facilitator's Note [6/12]

- ▶ Inform the participants that it is totally prohibited to keep flammable liquids at home. Stress the significance of making sure they are stored properly, keeping them away from open flames, and avoiding heat exposure if it cannot be avoided.

offers a prompt response system in the event of a fire. Furthermore, installing a well-thought-out chimney system is essential for efficiently venting smoke, which helps to create a more controlled and safe atmosphere.

#### Facilitator's Note [7/12]

- ▶ Emphasise how important it is to have a smoke detector installed in the kitchen. Emphasise the significance of this tool as a crucial safety precaution, acting as an early warning system to identify possible fire threats and facilitating prompt actions to stop or lessen fire-related events.

#### *Install a smoke detector in the kitchen at least 5-10 feet from the burner.*

This is to detect early if there's a fire in progress. It has been observed that kitchen fire usually occurs in the evening or in the middle of the night when everyone sleeps. Thus, the smoke detector serves as a lifeguard to alarm occupants in an emergency. It is advisable to designate or let yourself be a fire safety-conscious person whose function is to double-check the hidden fires in the kitchen before going to bed or by simply checking any open flames in the kitchen.



It shows a person installing a smoke detector.

#### Facilitator's Note [8/12]

- ▶ Provide examples or refer to incidents or news reports involving children catching fire either while cooking without supervision or while engaged in play within the kitchen.

#### *Children should not be left unattended as they play with fire in the kitchen.*

Children should never cook without adult supervision. This is especially true for young toddlers. Because of their natural curiosity, you should keep things like matches and lighters out of their reach. Children are put in danger when unsupervised cooking is allowed because they might not have the knowledge or experience to keep themselves safe in the kitchen. In addition to ensuring physical safety, adult supervision fosters a safe learning environment for culinary skills and strikes a balance between promoting curiosity and exercising responsible oversight to avert potential mishaps.



A child is shown attempting to access a pot containing boiling water in the kitchen.

*As a golden rule, never leave the house if you are still cooking or going to sleep without double-checking the open flames or live embers in the kitchen.*

Remember that human beings are forgetful. Practicing not roaming around or doing something else while still cooking is proper.



It illustrates that leaving the house while cooking can lead to a fire.

#### Facilitator's Note [9/12]

- ▶ Highlight the significance of maintaining mindfulness and staying mentally present while cooking, as well as stressing the importance of turning off the gas when going to sleep or leaving the house.

*Wearing loose or cotton clothing may easily catch fire and may cause severe injury or even death to a victim.*

When cooking, it is best to wear loose-fitting clothing that isn't comprised of materials like cotton or silk. This safety measure is crucial since voluminous or billowing clothing composed of combustible materials can

present a serious risk of fire in the kitchen. The danger comes from the possibility that these materials could catch fire if they come into touch with hot surfaces, open flames, or other heat sources that are frequently present in kitchen environments. Thus, wearing loose-fitting apparel made of non-flammable materials promotes a safer cooking environment by reducing the possibility of unintentional fires.



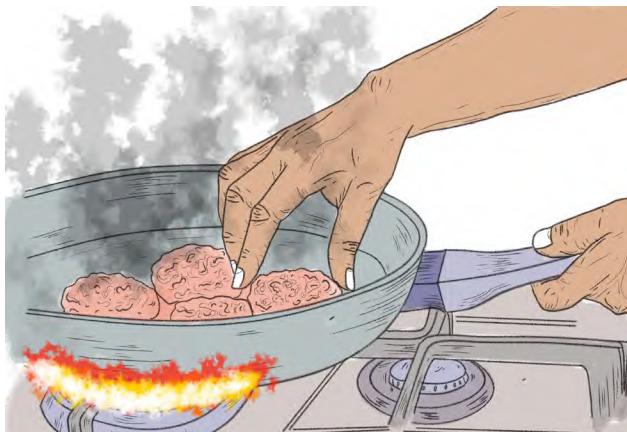
IN THE ILLUSTRATION: It shows a person cooking while wearing a loose clothing.

#### Facilitator's Note [10/12]

- Help the participants comprehend the need for extra caution, especially when frying in hot oil, by emphasizing the importance of being deliberate and not rushing to prevent oil splashing into the fire.

#### ► *During cooking, put the food slowly into the hot oil.*

If we intend to put food into the boiling oil, make sure that it has no enough water or let it dry to avoid the bursting of flames in the pan. Also, do not let the oil reach the burning point. Be attentive always in checking the temperature of your cooking oil.



It shows a person carefully cooking food in hot oil.

## Do not put combustible or flammable materials near the burner or open flame.

Combustible materials like paper, cloth, plastics, and wood and flammables like gas, gasoline, paints, and the like should be placed away from the open flames. Fire may easily engulf your house's structure if the combustible fuels are already available inside the kitchen.



It shows combustible materials positioned near the open flame.

### Facilitator's Note [11/12]

- ▶ Stress the critical importance of refraining from storing combustible or flammable materials in close proximity to burners, open flames, or within the confines of the house. Explicitly communicate that such storage is strictly prohibited and must be kept outside the house. This precaution is vital to minimize the risk of accidental ignition and potential fires, ensuring a safe environment within the living space.

## Never pour water into the burning greases or oils of the fry fan.

Kitchen Fires resulting from unattended cooking, burning oil or greases, and overheating of the cooking equipment are the common causes of fire in homes. A kitchen fire is vulnerable to occur, especially in residential areas, as one element of fire, heat, is already present in the kitchen since the occupants are cooking daily for food consumption. The rolling out of its demonstration on how to deal with it during an emergency is provided in module 7.



It shows someone attempting to extinguish a fire from burning oil by using water.

**Facilitator's Note [12/12]**

- Ensure that participants memorize the steps to take when a kitchen fire initiates. It's imperative that they can recall and follow these procedures promptly in the event of a fire emergency.

**► *What to do if a kitchen fire starts? [5/5]***

Remember the most important thing is to get out of the house safely. Don't try to fight the fire or save your belongings if it puts you in danger. If a kitchen fire starts, it's important to act quickly and carefully to prevent it from spreading and causing more damage.

***Here's what to do if a kitchen fire starts:***

1. *Stay calm and don't panic: Keep a clear head and focus on getting the fire under control.*
2. *If it's safe to do so, turn off the heat source: If the fire is small and contained, turn off the stove or oven to stop the fire from spreading.*
3. *Never use water in putting off the fire.*
4. *Use a fire extinguisher: If you have a fire extinguisher in the kitchen, use it to put off a fire. Aim the nozzle at the base of the flames, and use a sweeping motion to extinguish the fire.*
5. *If fire extinguisher is not available, you can use lid/pot cover or use wet cloth if the fire is small.*
6. *If the fire is too large and uncontrollable: If the fire is too large to control or you don't have a fire extinguisher evacuate the house immediately. Leave the door open as you leave to help the fire department locate the fire.*
7. *Call the fire department: Once you safely got outside, call 911 or your nearest fire station hotline number and report the fire incident. Provide the operator with your address and any information about the fire, such as where it is located and what it is burning.*
8. *Stay outside: Do not go back inside the house until the fire department arrives and gives you the all-clear signal.*

***Kitchen Fire Safety***

Kitchen Fire Safety is extremely important to prevent accidents and injuries at home. You can take several tips to help ensure your's and your family's safety in the kitchen, including having proper ventilation, safe use of appliances, and having a home fire escape plan in your place.

## PowerPoint and Visual Aids

# Good Housekeeping, Kitchen and Cooking Fire Safety

1

### Kitchen Fire

Kitchen fires are frequent and extremely hazardous. They could injure people, break items, or even kill someone. It's critical to focus while cooking, watch the stove or oven, and use kitchen appliances correctly. Never leave anything unattended, and exercise caution when placing items like dish towels close to heat sources.



5



2

### Common Causes of Kitchen Fire



Unattended cooking



Cooking with a dirty stove top



Using the wrong cookware

6

**Goal:** To impart awareness about kitchen fire safety and promote good housekeeping and cooking safety tips.

**Objectives:** At the end of the session, the participants will be able to:

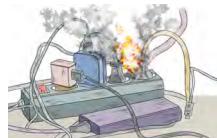
1. Disseminate ways to maintain good housekeeping.
2. Educate the audience about kitchen fire safety and how to prevent and handle kitchen fire accident situations.
3. Provide awareness about fire safety tips in cooking

3

### Common Causes of Kitchen Fire



Overheating oil



Electrical Malfunctions

7

### Good Housekeeping

Good housekeeping can help control or eliminate kitchen hazards. Poor housekeeping practices frequently contribute to accidents.



4

### Key to Kitchen Fire Safety & Cooking Fire Safety Tips

8

### The Application of 5S Principles

**S**hine  
**S**ort  
**S**tandardize  
**S**weep  
**S**afety

9



As a golden rule, never leave the house if you are still cooking or going to sleep without double-checking the open flames or live embers in the kitchen.

13



Keep flammable and combustible materials in safe storage and away from the open flames of the kitchen.

10



During cooking, put the food slowly into the hot oil.

Do not put combustible or flammable materials near the burner or open flame.

14

As a preventive approach, it is ideal to establish a kitchen that is separate or adjacent to the main house or structure. The place should be open and well ventilated.

11



Never pour water into the burning greases or oils of the fry pan.

15



Install a smoke detector in the kitchen at least 5-10 feet from the burner.



Children should not be left unattended as they play with fire in the kitchen.

12

### What to do if a kitchen fire starts?

1. Stay calm and don't panic: Keep a clear head and focus on getting the fire under control.
2. If it's safe to do so, turn off the heat source: If the fire is small and contained, turn off the stove or oven to stop the fire from spreading.
3. Never use water in putting off the fire.

16

4. Use a fire extinguisher: If you have a fire extinguisher in the kitchen, use it to put off a fire. Aim the nozzle at the base of the flames, and use a sweeping motion to extinguish the fire.
5. If fire extinguisher is not available, you can use lid/pot cover or use wet cloth if the fire is small.
6. If the fire is too large and uncontrollable: If the fire is too large to control or you don't have a fire extinguisher evacuate the house immediately. Leave the door open as you leave to help the fire department locate the fire.

17

## Thank You!

-End-

21

7. Call the fire department: Once you safely got outside, call 911 or your nearest fire station hotline number and report the fire incident. Provide the operator with your address and any information about the fire, such as where it is located and what it is burning.
8. Stay outside: Do not go back inside the house until the fire department arrives and gives you the all-clear signal.

18

### Kitchen Fire Safety

Kitchen Fire Safety is extremely important to prevent accidents and injuries at home. You can take several tips to help ensure your's and your family's safety in the kitchen, including having proper ventilation, safe use of appliances, and having a home fire escape plan in your place.

19

- Have we understood the advantage of good housekeeping in the kitchen?
- Have we understood the possible causes of kitchen fires?
- Do we now know how to prevent kitchen fires?
- Do we now know what to do if a kitchen fire starts?

20



# **Subject 5**

**Fire Safety Lectures and Seminars for the General Public**

# **Exit Drill In The Homes (E.D.I.T.H.)**



ILLUSTRATION BY: F01 Ricjun P Almacen

# In this Subject 5...

## Goal

For the audience to understand the importance of EDITH and the proper evacuation procedure.

## Objectives

By the end of the session, participants should be able to:

1. Understand and appreciate the importance of Exit Drills in the Home (EDITH);
2. Identify the role and functions of the Fire Safety Conscious Person; and
3. Perform the proper evacuation procedure.

### Subject Aids Needed:

#### A. Primary Tools

1. Multimedia Projector
2. PowerPoint Presentation
3. Visual Examples
  - i. Coconut Husk
  - ii. Lighters
  - iii. Piece of Crumpled Scratch Paper
  - iv. Any useable means of making an example

#### B. Alternative Tools

1. Fire Blanket
2. Wet Towel
3. Mask
4. Bell or Whistle
5. Cellphone

### Total Time of Delivery:

*25 to 30 minutes*

## Subject Overview

**Purpose:** To introduce to the participants the need to have an EDITH, discuss its importance before performing a return demo, and enable them to know the execution of the procedure and standard evacuation when there is conflagration or emergency. This subject also introduces the importance of FSCP and its vital role in the home or in community.

**General Guidance:** In this subject, the facilitator must remember that the target audience is the general public in the community. Thus, it is advisable to use colloquial or common words that are understandable to the participants. To ensure that the lecture is delivered in a fun and enthusiastic manner to capture the participants' attention using a PowerPoint presentation. In addition to this, the lecturer may prepare the following materials and models to motivate the audience.

**Things to Consider:** The target participants are the mothers, fathers, grandmothers/grandfathers, and the like in the community, roughly around the age of 20 to 60. Care and effort must be considered when it comes to delivering the subject. In this subject, direct interaction with the participants is advised, such as moving around the lecture venue and making jokes. Sensitivity should be kept in mind when making or citing examples, especially concerning personal details. Stay on the topic and follow the time limit as much as possible.

# Cheat Sheet

## Subject Outline:

Audio/Visual Aids	Outline	Notes
<b>1. Preparatory</b>		
PPTS-1	<p>1.1 Greet the participants and start by introducing your name and your teammates.</p> <p>1.2 Engage participants by "<b>Showbiz at Heart</b>" Facilitators may ask the following questions:</p> <ul style="list-style-type: none"><li>• <i>What is your name "Nanay"? (Depends upon the participants gender)</i></li><li>• <i>What have you been doing these past few days?</i></li><li>• <i>How about you "tatay" how old are you?</i></li><li>• <i>What is your routine activity to look younger than your age?</i></li></ul>	<p>Facilitators may roam around and select participants to be interviewed to get their attention.</p> <p>The facilitator may talk about the participants' daily lives to get their hearts and be more secure to promote open communication during the session.</p>
PPTS-2	<p>2.1 Start by showing the participants a video or picture about the danger of being trapped in a house.</p> <p>2.2 Ask the following questions:</p> <ul style="list-style-type: none"><li>• <i>What did you see in the picture/ video?</i></li><li>• <i>Did you experience that?</i></li><li>• <i>What do you think will happen if somebody fails to exit from the house in the event of fire?</i></li></ul> <p>2.3 Present subject objectives.</p>	<p>Give the participants time to interact and may ask for their expectation.</p> <p>Facilitators may cite examples about the lessons of the past and those who were perished due to fire trap</p> <p>Refer to Goals and Subject Objectives</p>
<b>3. Lesson Proper</b>		
PPTS-4 LG5-1	<p>3.1 Introduce the lesson through discussion that will answer the following questions:</p> <ul style="list-style-type: none"><li>• <i>Do you have any idea about EDITH?</i></li><li>• <i>Do you know the importance of EDITH?</i></li></ul> <p>3.2 Discuss the importance of EDITH.</p>	<p>Engage participants by asking about their experiences with Exit Drill in the Home (EDITH) and evacuation procedures during a house fire.</p> <p>Explain the purpose of EDITH, citing instances from news articles where lack of practice led to evacuation challenges.</p>

# Cont.

Audio/Visual Aids	Outline	Notes
PPT S-7 LG5-3	3.3 Discuss safety measures during emergency.	Motivate them to create a practical escape plan with alternative routes for fire emergencies.
PPT S-8 LG5-4	3.4 Discuss what is FSCP.	Encourage the appointment of a Fire Safety Conscious Person (FSCP) within families, emphasizing their crucial role in ensuring safety during evacuations.
PPT S-9 LG5-5	3.5 Discuss the role and function of FSCP.	
PPTS-10-12 LG5-6	3.5 Discuss the standard procedure in evacuation.	Urge active participation in EDITH drills, stressing their importance in enhancing preparedness for emergencies.
PPT S-13 LG5-7	3.6 Discuss when to escape in heavy smoke.	Finally, highlight the value of memorizing acronyms like GCCAI and GSSWE for quick reference during evacuations in situations involving heavy smoke or widespread fire.
PPTS-14 LG5-8	3.7 Discuss how to escape when there is fire all around.	

## 4. Generalization

4.1 Summarize the lesson and provide a generalization of the things the participants must remember.

## 5. Closing Evaluation

PPTS-15

5.1 Review the objectives by asking the questions:

- *Why do we need to practice EDITH?*
- *Why do we need to evacuate properly from a burning structure?*
- *Is FSCP important? Why?*

5.2 Ask if there are questions or clarification.

5.3 Let the participants accomplish the checklist.

PPTS-16

5.4 End the subject.

# Lecturer's Guide and Talking Points

## I. Preparatory

Before the discussion, engage the participants with the following questions:

- What is your name? What makes you busy the past few days?
- What is your name "Nanay"? (Depends upon the participants gender)
- What have you been doing these past few days?
- How about you "tatay" how old are you?
- What is your routine activity to look younger than your age?
- How about you "Untie"? How many children do you have?

### Facilitator's Key Guide

- Talk about the participants' daily lives to get their hearts and be more secure to promote open communication during the session. Use colloquial terms in communicating with the participants and may add funny stories and lines of jokes for the participants to get more comfortable.

## II. Motivation

Start by showing the audience a video or pictures about the danger of being trapped in a house.

### Guide Questions

- What did you see in the picture/video?
- Have you experienced anything like that?
- What do you think will happen if somebody fails to exit the house in the event of a fire?



Three individuals are depicted as trapped in a burning building.



It portrays a person trapped in a building, signaling for rescue

### Facilitator's Key Guide

- Facilitators may use the primary tool or alternative tool in this part. The facilitator may provide a youtube video or a picture about the victims of fire.
- Facilitators may cite examples about the lessons of the past and those who were perished due to fire trap

### III. Lesson Proper

#### Facilitator's Note [1/7]

- ▶ Encourage participant engagement by inquiring whether they have any insights or experiences with Exit Drill in the Home (EDITH) or if they have undergone evacuation procedures during a house fire. This approach aims to maintain their interest by actively involving them in the discussion and drawing on their personal experiences.

#### Do you have any idea what is E.D.I.T.H.? [1/8]

*E.D.I.T.H. is an acronym that stands for Exit Drill In The Homes.*

The latter's concept protects the household members, including those in an apartment or a boarding house, from destructive fire. Although the BFP has introduced EDITH in the country as one of the means of evacuation procedures, several individuals in the community have not seriously taken its practice. Hence, it is the premise of this article to put too much emphasis on the regular conduct of EDITH to save lives and properties.

#### Why do we need EDITH?

As the saying goes, "Constant practice makes you perfect." It is indispensable to practice a culture of propagating awareness, prevention, and preparedness for the public in anticipation for the possible onslaught of destructive fire in the households. Thus, conducting EDITH plays an important role for a fire-safe community and a need to perform this procedure consistently is vital for our families in order for them to be aware on what to do most especially their escape routes and other any means of egress when there is conflagration or emergency.

#### Facilitator's Note [2/7]

- ▶ Explain the purpose of the Exit Drill in the Home (EDITH) and how it helps participants get ready for what to do in the case of a house fire. Give background by referring to a news article that describes events when people had trouble evacuating because EDITH wasn't being practiced.

#### Why EDITH is important? [2/8]

*Practicing EDITH is one way to prepare our family for a fire.* You need to sit down with your family and make a detailed plan of what to do in case of a fire. It is better to preplan your escape and practice it often while there is no emergency so that the family will be eventually ready when the real fire happens. This fire escape plan should be drawn and made known to every member of the family. It is best if it can be printed and posted in visible and strategic location in the home.

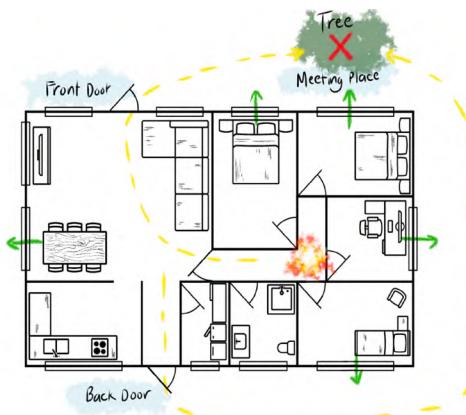
#### The Following Safety Measures the Family Should Prioritize in Their Homes [3/8]

##### Installation of Smoke Alarms

This is to alarm everyone if there is smoke in the area. Test the smoke alarm in the presence of most family members to make them familiar with the sound.

## Know the Escape Route

Draw a floor plan of your home and find at least 2 ways out of every room. Alternate means of egress include doors, windows, and any other exit or opening to get out. Conduct a meeting to the family about the exit route of your house, and make sure that everyone in the house is familiar on the safety exits leading to the public way.



It shows an example of a fire exit plan at home.

## Designate A Safety Meeting Place For Your Family During Evacuation And Account Everyone In The Meeting Place

Somebody is also assigned to call the fire department or any responders within the community. Call BFP Hotline Number 911 or your nearest Fire Station Hotline Number.

## *It Is Better To Conduct An Evaluation After The Drill And Discuss The Things That Need To Be Improved On The Next Exercise*

Conduct EDITH consistently preferably at least twice a year.

## Designation of a Fire Safety Conscious Person/Personnel (FSCP) [4/8]

It is ideal for each household, regardless of the number of living occupants, to designate a Fire Safety Conscious Person/Personnel or FSCP whose main function is to protect his/her family or the living occupants from destructive fire. It can be the father, mother, or anyone who is fire safety conscious.

### Facilitator's Note [3/7]

- ▶ Motivate participants to establish a practical escape plan within their homes, ensuring it includes alternative routes in case one path is blocked during a fire.

**Facilitator's Note [4/7]**

- ▶ Encourage participants to appoint a Fire Safety Conscious Person (FSCP) within their family and help them grasp the responsibilities associated with this role during emergency evacuations. It's important for them to understand that the designated FSCP plays a key role in ensuring everyone's safety and guiding the family through evacuation procedures in case of emergencies.

The same shall consistently perform EDITH on a regular schedule and shall plan when to conduct the drill. He shall conduct a meeting and be the one to determine the fire exit or escape route on his home in case of emergency and lead the orderly passage of his family or occupants towards the direction of the public way. The FSCP is just like a safety officer of the company.

Moreover, to intensify the conduct of EDITH, it is best to hold the drill at least once every quarter of the year. The FSCP shall initiate planning on what to do or implement the emergency action plan in case of emergency to serve as the guidance and reference of the family.

The FSCP shall see to it that his house is protected in case of destructive of fire. This includes constructing fire-resistant materials and being aware of the combustibility of contents or hazards of his house or structure. He shall also conform to the applicable provisions outlined in RA 9514, such as but not limited to the fire safety requirement of the door and other means of egress in a single-family dwelling, including installation of fire safety appliances and protection system and FDAS if necessary, as well as practical homemade fire safety devices.



It shows a family planning together for the fire exit plan at home.

***The Vital Role of FSCP [5/8]***

To help the FSCP be aware of his functions efficiently, he must attend the scheduled conduct of the Fire Safety Seminar or during the OLP program of the BFP. The FSCP or any family member shall memorize their escape routes as much as possible, considering that most fire incidents occur in the evening or dawn. In high-rise residential occupancy or any house with a second storey, it is not advisable to install grills on its windows, or else it is considered a fire trap. In retrospect, most of the casualties

from residential fires have been attributed to installing grills or obstructions in the second-storey house or high-rise structures.

- *Knows how to put out the fire.*
- *Design and sketch the escape floor plan of the house.*
- *Knows the hotline number of the nearest fire stations.*
- *Aware of what is happening inside his house or in the boarding house.*
- *Aware of the hazards in the surroundings.*
- *Conducts Fire Safety Lecture to his family/occupants.*
- *Knows the safety of the LPG.*
- *Knows the acronym SAFETY and chemistry of Fire.*
- *Knows how to put out incipient fires and the use of Fire.*
- *Knows Basic First Aid.*
- *Teaches Fire Safety Tips especially for kids.*

## *Practicing E.D.I.T.H. [6/8]*

Practice in EDITH is important for the house's occupants to be readily familiar on what to do in case of conflagration. This is the law of exercise. According to Edward Thorndike, behavior is more strongly established through frequent stimulus and response connections. Repeated practice strengthens the connection between neurons in the brain, making it easier for the behavior to occur in the future.

### *Procedures During EDITH*

1. *Sound the alarm*
2. *Perform crawling low on the floor (if necessary).*
3. *Follow the escape route.*
4. *Exit through the door or to its designated means of egress .*
5. *Proceed to safe evacuation area.*
6. *Conduct headcount.*
7. *Conduct assessment/ evaluate checklist.*

### **Facilitator's Note [5/7]**

- Motivate participants to actively engage in practicing Exit Drill in the Home (EDITH) and emphasize the importance of remembering the procedures. Help them comprehend the necessity of regular EDITH drills, underscoring how this proactive measure enhances their preparedness and ensures a more effective response in case of an emergency.

### Alternate Routes To Consider

Plan A	Plan B	Plan C
Main Door	Window	Stair or Escape Ladder

### Practice Escaping in Heavy Smoke [7/8]

#### Facilitator's Note [6/7]

- ▶ Encourage participants to memorize the acronym GCCAI, as it can be a crucial aid during evacuation, especially in situations involving heavy smoke. This acronym serves as a helpful guide, reminding them of essential steps to take for their safety.

#### ▶ Remember the acronym G.C.C.A.I.

*G*et a mask or wet towel.  
*C*over your nose from thick smoke.  
*C*rawl low on the floor.  
*A*nticipate for a zero visibility.  
*I*mmediately exit the house.



It demonstrates the evacuation procedure for exiting the house in the presence of heavy smoke and fire at home.

*Remember that smoke is always going up. Oxygen may still be available at least 1 foot from the ground. The lower ground is also cleaner and cooler. Stay crawling on the low ground until you reach the exit point. Do not get up, as you may inhale the toxic products of combustion. Somebody must also call 911.*

### Practice Escaping When There is Fire

## All Around [8/8]

Remember the acronym G.S.S.W.E.

If there is no other way out. The victim may wrap himself with a wet blanket or heavy blanket and exit immediately from the burning structure. However, it is logical to squeeze the wet blanket first before applying this procedure. This is only a last-resort option.

*G*et a fire blanket.

*S*oak the fire blanket in water.

*S*queeze the fire blanket.

*W*rap the blanket in your body.

*E*vacuate immediately the house.

### Facilitator's Note [7/7]

- ▶ Encourage participants to remember the acronym GSSWE, as it can be invaluable in situations where there is fire all around. This acronym provides a quick and memorable reference for essential steps to take in ensuring personal safety during such emergencies.

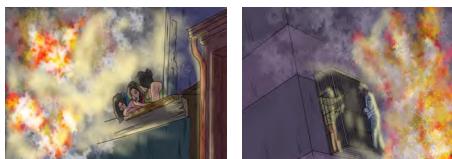
## PowerPoint and Visual Aids

### Exit Drill In The Homes (E.D.I.T.H.)

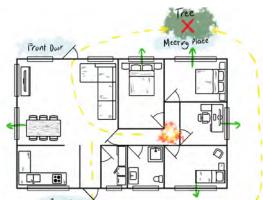
1

*Why E.D.I.T.H. is important?*

5



2



6

**Goal:** For the audience to understand the importance of EDITH and the proper evacuation procedure

**Objectives:** At the end of the session, the participants will be able to:

1. Understand and appreciate the importance of Exit Drills in the Home (EDITH);
2. Identify the role and functions of the Fire Safety Conscious Person; and
3. Perform the proper evacuation procedure.

3

### Safety Measures the Family Should Prioritize in Their Homes

1. Installation of Smoke Alarms
2. Know the Escape Route
3. Designate A Safety Meeting Place For Your Family During Evacuation And Account Everyone In The Meeting Place
4. It Is Better To Conduct An Evaluation After The Drill And Discuss The Things That Need To Be Improved On The Next Exercise

7

*Do you have any idea what is E.D.I.T.H.?*

*Why do we need E.D.I.T.H.?*

4

### Designation of a Fire Safety Conscious Person/Personnel (FSCP)

It is ideal for each household, regardless of the number of living occupants, to designate a Fire Safety Conscious Person/Personnel or FSCP whose main function is to protect his/her family or the living occupants from destructive fire. It can be the father, mother, or anyone who is fire safety conscious.



8

### The Vital Role of FSCP

- Knows how to put out the fire.
- Design and sketch the escape floor plan of the house.
- Knows the hotline number of the nearest fire stations.
- Aware of what is happening inside his house or in the boarding house.
- Aware of the hazards in the surroundings.
- Conducts Fire Safety Lecture to his family/occupants.
- Knows the safety of the LPG.
- Knows the acronym SAFETY and chemistry of Fire.
- Knows how to put out incipient fires and the use of Fire.
- Knows Basic First Aid.
- Teaches Fire Safety Tips especially for kids.

9

### Escaping On Heavy Smoke

- G**et a mask or wet towel.  
**C**over your nose from thick smoke.  
**C**rawl low on the floor.  
**A**nticipate for a zero visibility.  
**I**mmediately exit the house.

13

### Parcticing E.D.I.T.H.

Practice in EDITH is important for the house's occupants to be readily familiar on what to do in case of conflagration. This is the law of exercise. According to Edward Thorndike, behavior is more strongly established through frequent stimulus and response connections. Repeated practice strengthens the connection between neurons in the brain, making it easier for the behavior to occur in the future.

10

### Escaping When Fire is All Around

- G**et a fire blanket.  
**S**oak the fire blanket in water.  
**S**queeze the fire blanket.  
**W**rap the blanket in your body.  
**E**vacuate immediately the house.

14

### Procedures During E.D.I.T.H.

1. Sound the alarm
2. Perform crawling low on the floor (if necessary).
3. Follow the escape route.
4. Exit through the door or to its designated means of egress.
5. Proceed to safe evacuation area.
6. Conduct headcount.
7. Conduct assessment/ evaluate checklist.

11

- Why do we need to practice EDITH?
- Why do we need to evacuate properly from a burning structure?
- Is FSCP important? Why?

15

### Alternate Routes to Consider

Plan A	Plan B	Plan C
Main Door	Window	Stair or Escape Ladder

12

### Thank You!

-End-

16



## **Subject 6**

Fire Safety Lectures and Seminars for the General Public

# **Electrical Fire Safety In The Homes**

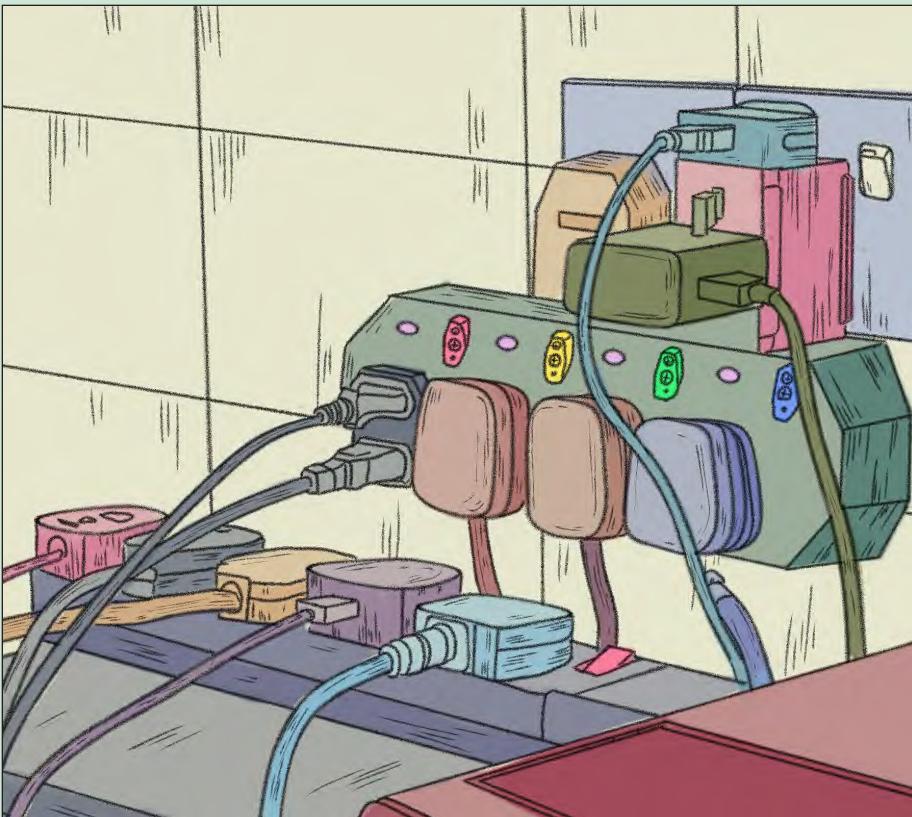


ILLUSTRATION BY: F01 Ricjun P Almacen

# In this Subject 6...

## Goal

For the participants to gain information on how to prevent Electrical Fire and control it if an incident happens.

## Objectives

By the end of the session, participants should be able to:

1. Define electrical fire;
2. Identify the things that can be used at home in putting off electrical fires; and
3. Acquire awareness on ways to prevent Electrical Fire.

Subject Aids Needed:	Total Time of Delivery:
<p><b>A. Primary Tools</b></p> <ul style="list-style-type: none"><li>1. Multimedia Projector</li><li>2. PowerPoint Presentation</li><li>3. Visual Examples</li><li>iv. Video Presentation</li></ul> <p><b>B. Alternative Tools</b></p> <ul style="list-style-type: none"><li>1. Flip Cards</li><li>2. Printed Tarpaulin</li><li>3. Visual Examples</li></ul>	<p><b>25 to 30 minutes</b></p>

## Subject Overview

**Purpose:** To introduce to the participants the common causes of electrical fire & how to deal with it. The participants will be informed through visual videos of how an electrical fire starts and what common electrical appliances or devices may cause it.

**General Guidance:** In this subject, the lecturer/facilitator must deliver the issue in the simplest terms that are understandable to the public. He should ensure that the lecture is delivered in a fun and enthusiastic manner to capture the audience's attention.

**Things to Consider:** The participants are community members, roughly around 18 and above. Simplicity and ease of understanding must be considered when delivering the subject. In this subject, direct interaction with the participants is advised, such as moving around the lecture venue and making jokes. Sensitivity should be kept in mind in making or citing examples, especially in matters that might involve personal details. Stay on the topic and the schedule as much as possible.

# Cheat Sheet

## Subject Outline:

Audio/Visual Aids	Outline	Notes
PPTS-1	<b>1. Preparatory</b>  1.1 Greet the participants and start by introducing your name and your teammates.  1.2 Engage participants by asking the following prompt questions: <ul style="list-style-type: none"><li>• <i>Do you have any idea about electrical fire?</i></li><li>• <i>Does anybody experience an electrical fire at home?</i></li><li>• <i>What are the common causes of electrical fire at home?</i></li><li>• <i>How can you ensure that your home is free from electrical fire?</i></li></ul>	Start by introducing yourself and your teammates, along with the topic Electrical Fire Safety in the Homes.  The following questions are not suggestions to choose one, but should all be asked in the presented manner.
PPTS-2	<b>2. Motivation</b>  2.1 Start by showing the participants a video or picture about a house being burned because of an electrical fire.  2.2 After seeing the hazards of fire through the video presentation/photo, the facilitator may ask the participants: <ul style="list-style-type: none"><li>• <i>What can you see in the video/photo?</i></li><li>• <i>What was the reason why the house was burned?</i></li><li>• <i>Are you now aware of the hazards of electrical fire?</i></li><li>• <i>If an electrical fire happens at your home, do you know what to do?</i></li></ul>	Give the participants time to interact upon seeing the video presentation.  Entertain and mention all their concerns.
PPTS-3	2.3 Present subject objectives.	Refer to Goals and Subject Objectives
PPTS-4 LG6-1	<b>3. Lesson Proper</b>  3.1 Start by discussing the topic “What is an Electrical Fire?	Utilize PowerPoint/tarpaulin for the presentation.

# Cont.

Audio/Visual Aids	Outline	Notes
PPTS-5-16 LG6-2	3.2 Discuss the common causes of electrical fire.	Allow the participants to express their examples, such as how they experience the components of fire.
PPTS-17 LG6-3	3.3 Discuss warning signs of Electrical Fire.	The lecturer may ask the participants to give examples of possible causes of fire and show the audience a photo of the mentioned example if available.
PPTS-18 LG6-4	3.4 Discuss how to put out an Electrical Fire.	These effects of fires should be emphasized to the audience by giving pictorial examples.
PPTS-19-30 LG6-5	3.5 Discuss how to prevent Electrical Fire and Safety Tips.	during the demonstration.

## 4. Generalization

4.1 Summarize the lesson and provide a generalization of the things the participants must remember. Ask, "***What have you learned in our discussion today?***"

## 5. Closing Evaluation

PPTS-31

5.1 Review the objectives by asking the questions:

- *What is an electrical fire?*
- *What are the possible causes of electrical fire at home?*
- *How can you put out an electrical fire at home?*
- *How can you avoid electrical fires at home?*

5.2 Ask if there are questions or clarification.

PPTS-32

5.3 End the subject.

# Lecturer's Guide and Talking Points

## I. Preparatory

Before the discussion, engage the participants with the following questions:

- Do you have any idea about electrical fire?
- Does anybody experience an electrical fire at home?
- What are the common causes of electrical fire at home?
- How can you ensure that your home is free from electrical fire?

### Facilitator's Key Guide

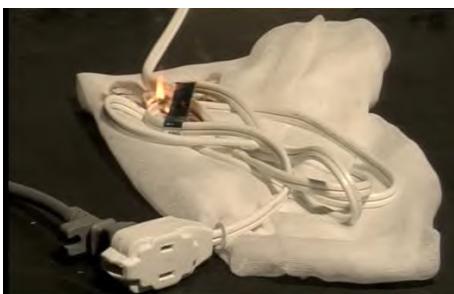
- The following questions are not suggestions to choose one, but should all be asked in the presented manner.

## II. Motivation

Start by showing the participants a video or picture about a house being burned because of an electrical fire.

### Guide Questions

- What can you see in the video/photo?
- What was the reason why the house was burned?
- Are you now aware of the hazards of electrical fire?
- If an electrical fire happens at your home, do you know what to do?



It shows an electrical fire occurring near a cloth, which serves as combustible material.



It shows an electrical fire occurring near a newspaper, which serves as combustible material.

### Facilitator's Key Guide

- Refer to the YouTube link provided for additional content related to this video.
1. UL Solutions. (2020, May 22). Counterfeit Extension Cord Fire (Demonstration) [Video]. YouTube. <https://www.youtube.com/watch?v=7ZoKJp2Z9GA>
  2. Magic Wand. (2014, August 13). Multiple Socket Outlet Catching Fire [Video]. YouTube. <https://www.youtube.com/watch?v=Kzv1Qn1pPpc>

### III. Lesson Proper

#### Facilitator's Note [1/20]

- ▶ Commence the lesson by initiating a question such as "What constitutes an electrical fire?" Alternatively, encourage participants to share any personal experiences or stories they may have related to electrical fires.

#### ► *What is Electrical Fire? [1/5]*

An electrical fire is a fire that stems from electrical sources or systems. It occurs due to ignitions coming from overheating, malfunctioning, or damaged electrical components, equipment, or wiring. This fire can compromise the safety of residential, commercial, and industrial settings because of its potential to spread rapidly and cause extensive damage to lives and properties.

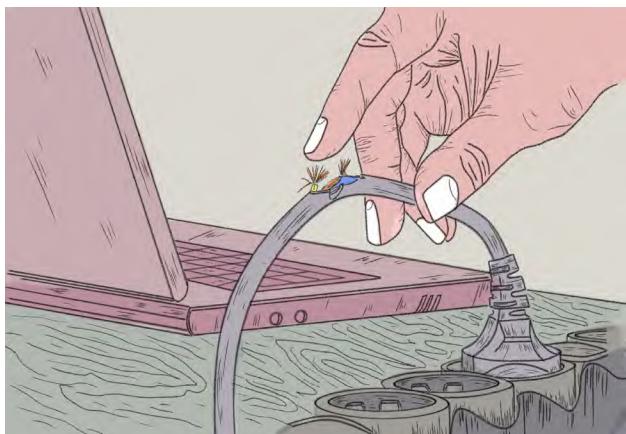
#### *Common Causes of Electrical Fires [2/5]*

Electrical fires can be catastrophic, causing significant damage and threatening individual lives and properties. Understanding the factors contributing to these fires is vital in implementing effective preventive measures.

So, what causes electrical fires in the first place? Explore each of these potential causes below:

#### *Damaged Wiring*

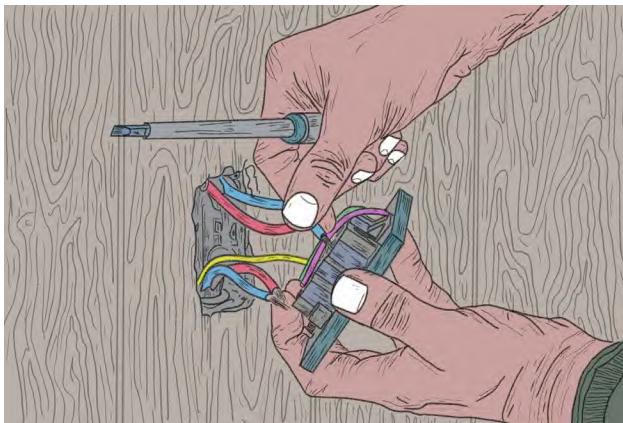
Electrical wires can become worn, frayed, or loose over time. When this happens, the wirings can overheat and slowly burn over a prolonged period.



It illustrates damaged wiring as one of the common causes of fires.

#### *Substandard Electrical Wirings*

Flat cord wires and other sub-standard electrical wirings are common, particularly in the informal settlers. Worst, they utilize the latter as their permanent connection and even use them beyond their rating limit.



Substandard electrical wiring is presented as an example of a common cause of fires.

### *Malfunctioning Appliances*

Fires can result from faulty or poorly maintained electrical appliances and equipment. Examples include cords, kitchen appliances, heating and air conditioning units, and other devices that draw significant power.



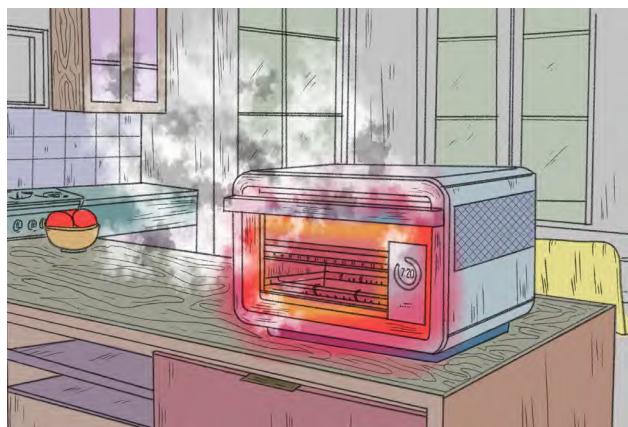
Malfunctioning appliances are presented as an example of a common cause of fires.

### *Overheated Appliances*

Electric Stoves, Iron, Heaters, and the like would produce fire if they were overused or put on for an extended period. Electric kettles and Water dispensers can erupt fire if empty and no water is stored inside its container.

#### **Facilitator's Note [2/20]**

- Ask the participants if they have any appliances at home that aren't working well but are still in use. In order to reduce future fire threats, urge them to think about hiring a repair professional or performing the required maintenance.



An oven getting overheated is shown as an example of a common cause of fires.

### Facilitator's Note [3/20]

- ▶ Highlight the potential danger of overloading electrical outlets by plugging in too many devices. Emphasize the importance of avoiding this practice to prevent potential hazards and ensure the safety of the electrical system.

### *Overloaded Circuits*

Plugging too many devices into a single course can overload it. Exceeding the circuit's capacity can generate high heat and ignite nearby combustible materials.

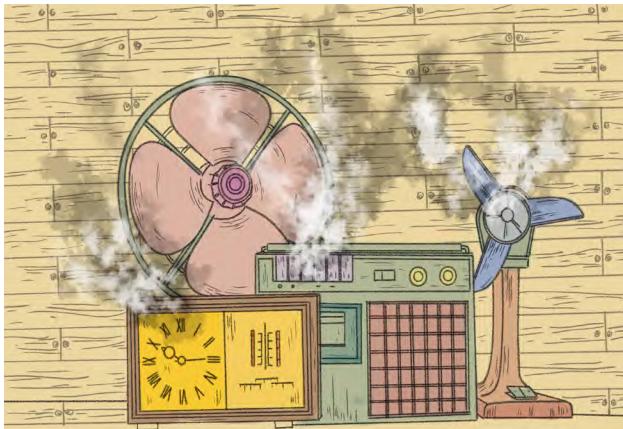


An overloaded circuit is depicted as an example of a common cause of fires.

### *Use of Old or Outdated Appliances*

The utilization of outdated appliances poses a significant risk of electrical fires. Take, for instance, the case of an aging electric fan. The prolonged use of such obsolete devices, especially exceeding the recommended operational duration of 6 hours, significantly heightens the likelihood of a potential fire hazard. It is imperative to recognize that the aging components within these appliances may no longer meet contemporary safety standards, making them more susceptible to malfunctions that could lead to dangerous electrical fires. Therefore, it is crucial for individuals to exercise

caution and prioritize the replacement of obsolete appliances to ensure the safety of their living or working spaces. Regular maintenance, coupled with the timely replacement of outdated equipment, plays a pivotal role in mitigating the risks associated with electrical fires and fostering a secure environment.



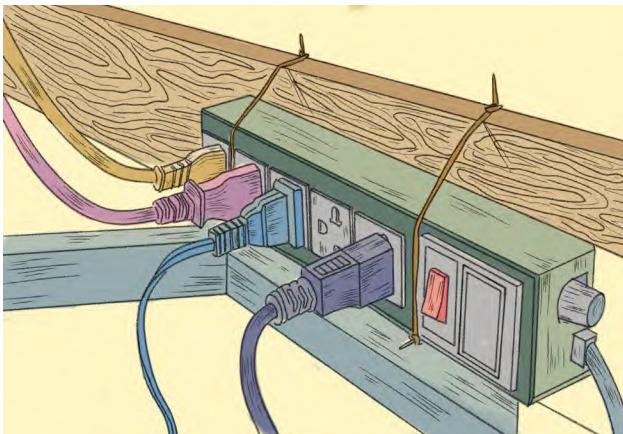
The use of old and outdated appliances is presented as an example of a common cause of fires.

#### Facilitator's Note [4/20]

- ▶ Inquire with the participants if they have any old appliances that have surpassed their expected lifespan but are still in use. Encourage them to consider replacing these appliances to avoid potential fire hazards that may arise from continued use beyond their intended lifespan.

### *Poorly Installed Extension Cords*

Replacing permanent wiring with improperly installed extension cords or connecting multiple appliances to a single power strip can cause a circuit overload and create a fire hazard.



Poorly installed extension cords are depicted as an example of a common cause of fires.

### *Faulty Outlets and Switches*

Loose connections, damaged components, frayed cords, and incorrect wiring can result in overheats and trigger fires.

**Facilitator's Note [5/20]**

- ▶ Help participants recognize the significance of being attentive to electrical appliances and lighting in use, as instances may arise where they forget to unplug or switch them off upon leaving. Stress the importance of cultivating a habit of double-checking these elements to enhance overall electrical safety and minimize potential risks.

***Unattended Electrical Appliances and Lightings***

Sometimes the public needs to pay greater attention to the safety of their electrical gadgets. Typically, they forget to switch off the lights and electrical appliances when they leave their houses, or they forget to unplug all of the items that are currently in use.



The scenario of unattended electrical appliances is presented as an example of a common cause of fires.

***Defective Lighting Fixtures***

Faulty bulbs, lamps, and other lighting fixtures can emit excess heat, which can induce fires. In addition to this, using bulbs that go beyond the recommended wattage increases the risk.



Defective light fixtures are shown as an example of a common cause of fires.

***Proximity to Heat Sources***

Fires are likely to occur if faulty wires or electrical tools are situated near combustible materials



It highlights the risk of fires due to the proximity of objects to heat sources.

### *Malfunctioning electrical systems*

Electrical systems can experience short circuits, electrical arcs, and other faults, which can subsequently lead to fires.



Malfunctioning electrical systems are portrayed as an example of a common cause of fires.

### *Facilitator's Note [6/20]*

- Urge participants to stay vigilant for any signs of a malfunctioning electrical system in their surroundings. Stress the importance of promptly contacting their electric provider or the Bureau of Fire Protection (BFP) in case of a fire. Quick and decisive action can make a significant difference in mitigating potential dangers and ensuring the safety of everyone involved.

### *Warning Signs [3/5]*

Electrical fires pose serious hazards, but their impacts can be minimized if you understand their telltale signs. This knowledge allows you to respond swiftly and keep everyone safe in a fire. It's important to stay vigilant and take immediate action if you notice any of the following signs:

#### *Burning Odor*

A distinct smell of melting plastic, rubber, or wiring is a common sign of an electrical fire. If you find an unusual

or persistent burning smell without any apparent source, it could hint at an electrical issue.

### Facilitator's Note [7/20]

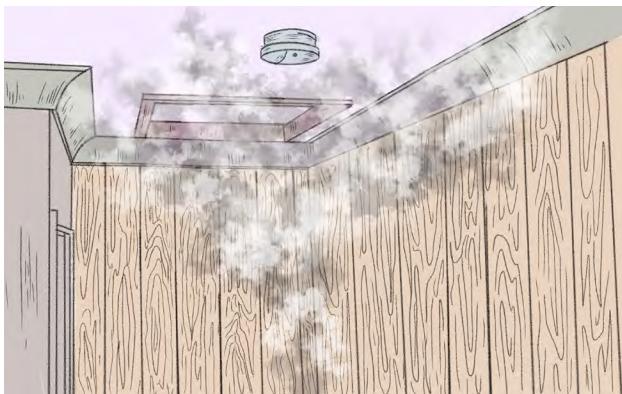
- ▶ Motivate them to be proactive and not dismissive if they detect a burning odor, as it can potentially escalate into a fire hazard. Encourage them to identify the source of the smell, allowing them to determine the appropriate suppression method in case a fire breaks out.



A burning odor is presented as a warning sign indicating a potential fire hazard.

### Smoke

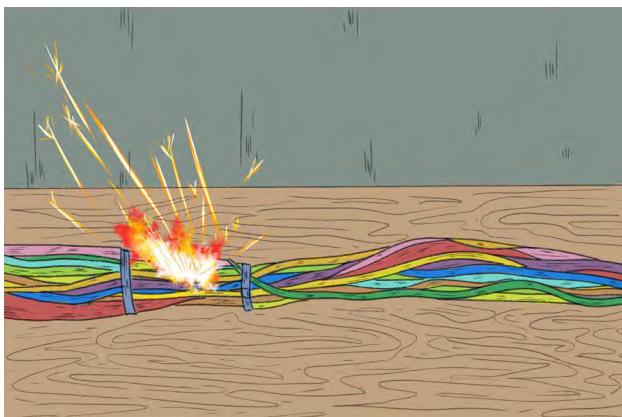
The presence of smoke, whether visible or faint, is a clear warning alarm for fires. If you see it coming from electrical appliances outlets or wiring it's crucial to immediately prevent the fire from spreading.



A smoke is shown as a warning sign indicating a potential fire hazard.

### Sparks

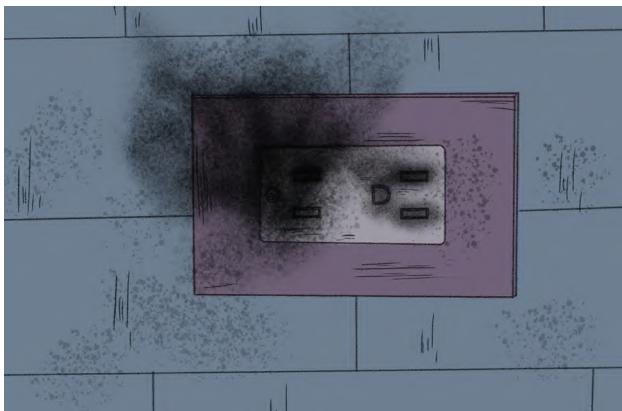
Watch out for visible sparks coming from outlets, switches, or appliances in addition to smoke, as these could indicate the presence of an electrical fire. Regardless of whether these sparks are sporadic or constant, it is imperative to keep a close eye on them in order to quickly handle any potential electrical hazards and stop the spread of fire risks. Maintaining the safety of your electrical system and the general health of your house can be greatly aided by routine monitoring and prompt action.



A spark is presented as a warning sign indication fire hazard.

### *Discolored Outlets*

Schorch marks or discoloration may suggest that outlets or switches are overheating and, consequently, can lead to potential fire damage. If you spot these marks it's best to report them or immediate action.



A discolored outlet is shown to be a warning sign for potential fire hazard in the future.

### *Hot Switch Plates*

Excessive heat emanating from outlets or switch plates could indicate an electrical issue that has to be taken seriously. This heat may be a sign of problems such as defective wiring or an overloaded circuit, both of which can cause a fire. To locate and resolve the issue, it's critical to immediately cut off the power to the impacted area, refrain from using the outlet or switch, and get advice from a licenced electrician. You can protect your house and avoid any risks by acting quickly. The hazards of your electrical system overheating can be reduced with routine inspections and timely maintenance.

### **Facilitator's Note [8/20]**

- Inquire with the participants if they've noticed any discoloration on their home outlets. Encourage them to have these outlets checked by a qualified electrician as discoloration could be indicative of internal heating or damaged wires.



It shows a person noticed a heating of the switch plate and saw it as warning signs for potential hazard.

### Flickering Lights

Frequent flickering of lights, along with a burning smell, could point out an electrical fire hazard. This can arise from loose connections, faulty wiring, or overloaded circuits.



A person changing the flickering lights as it posed a warning signs for potential fire hazard.

#### Facilitator's Note [9/20]

- ▶ Ask the participants how frequently they experience overloads and short circuits. If they admit that they have similar problems frequently, urge them to consult an electrician.

### Tripped Circuit Breakers

Circuit breakers and fuses serve as safety measures by tripping or blowing in response to excessive current flow. However, persistent occurrences can heighten the risk of electrical fires, indicating potential problems like overloaded circuits or faulty components. To maintain electrical safety, it's crucial to promptly address and fix recurring issues. Routine inspections and timely repairs play a vital role in reducing the risk of electrical fires and preventing the escalation of such problems.



A person noticed a trip circuit breaker as it may lead to major risk of fire hazard if not replaced immediately.

## How To Put Out An Electrical Fire [4/5]

Given their distinct nature compared to other types of fires, electrical fires require a specialized approach to ensure personal safety and effective fire suppression. Training is essential to carry this out effectively but in case of an emergency here's how to stop an electrical fire:

### *Here's what to do if a kitchen fire starts:*

1. Immediately alert everyone in the vicinity about the fire.
2. Unplug or disconnect the power source fueling the fire to prevent it from escalating
3. Do not use water to put out the fire, as it can electrocute you or further spread the fire.
4. Suppress the fire through the following methods:
  - > Fire extinguisher – designed for putting out electrical fires. Use dry powder or Class C fire extinguisher
  - > Non-flammable blanket – used to smother the flames
  - > Sand – used for small household fires
5. Call 911 or your nearest Fire Station Hotline Number and report the incident.

### Facilitator's Note [10/20]

- Instruct participants on the essential procedures for extinguishing an electrical fire. Provide clear guidance on the steps they should take to address such a situation safely and effectively. Empower them with the knowledge needed to respond confidently to an electrical fire by following a straightforward set of instructions.

**Facilitator's Note [11/20]**

- ▶ Provide a detailed explanation of fundamental electrical fire safety measures individuals should implement at home. Additionally, support your discussion by referencing recent news reports that outline incidents involving electrical fires, specifying the number of occurrences, details about the victims, and the extent of property damage resulting from such incidents. *(This approach aims to underscore the real-world consequences of neglecting electrical safety practices and serves as a practical reminder for individuals to prioritize safety measures in their homes).*

**Basic Electrical Fire Safety In The Homes [5/5]**

Given their distinct nature compared to other types of fires, electrical fires require a specialized approach to ensure personal safety and effective fire suppression. Training is essential to carry this out effectively but in case of an emergency here's how to stop an electrical fire:

***Turning off the main switch and light switch.***

It is essential to turn off the main switch when a fire outbreak or a live current is running in the electrical system of your house. Turning off the switch during an emergency will calm the fire, and electrical glitches may not escalate toward the other portion of the house or structure. In addition, responders or any individual can also safely extinguish the fire without the danger of electrocution.

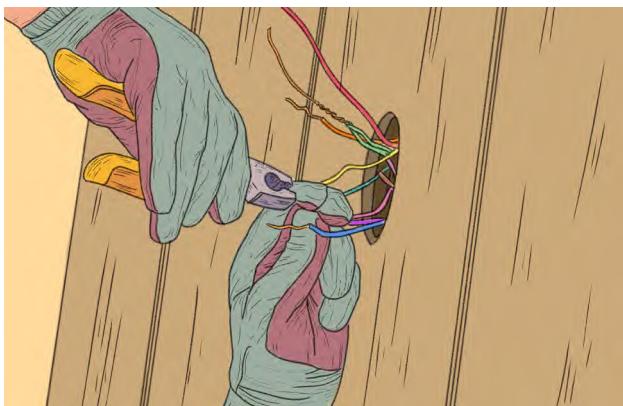


A person is turning off the main switch and light switch due to fire outbreak at home.

***Use of standard vs sub-standard electrical.***

Substandard electrical wiring, notably prevalent in residential houses, especially in informal settlements, often involves the improper use of flat cord wires as a permanent connection. It's crucial to highlight that PDX wire, specifically designed for permanent connections, is a safer alternative. Flat cord wires, intended for temporary use only, should never be employed as permanent connections or for running heavier appliances, as this poses significant safety risks.

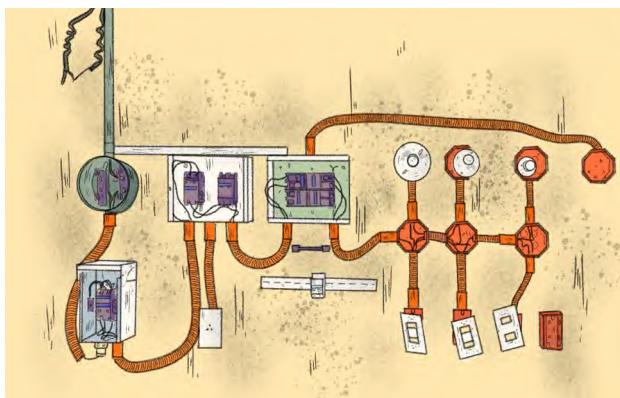
When considering the ideal circuit breaker for a single-family dwelling, industry standards recommend a 60-ampere rating for the main switch, with subsequent ratings of 20 amperes for convenience outlets and 15 amperes for lighting. Adhering to these guidelines ensures the proper functioning of the electrical system and enhances overall safety in residential settings.



IN THE ILLUSTRATION: Use of sub-standard electrical wire must be prohibited and should be changed immediately as a basic electrical fire safety in the home.

### *Standard model of electrical system in a single-family dwelling.*

This is an electrical system that is ideal to be used in single-family dwellings. The wirings and materials used in this diagram conform to the safety standards. It has a main breaker board and another breaker for the convenience outlet, lighting, and ACU.



It shows a standard model of electrical system in a Single-Family Dwelling.

Stranded Wires	Amperes
2.0 mm <sup>2</sup> or #14 AWG	15 amp
3.5 mm <sup>2</sup> or #12 AWG	20 amp
5.5 mm <sup>2</sup> or #10 AWG	30 amp
8.0 mm <sup>2</sup> or #08 AWG	45 amp
14 mm <sup>2</sup> or #06 AWG	60 amp
22 mm <sup>2</sup> or #04 AWG	88 amp

The ideal wiring to match the ampere rating while using a circuit breaker in a Single-Family Dwelling

#### Facilitator's Note [12/20]

- ▶ Inform the participants about this table, which shows the best wiring when using a circuit breaker in a single-family home based on the ampere rating.

**Facilitator's Note [13/20]**

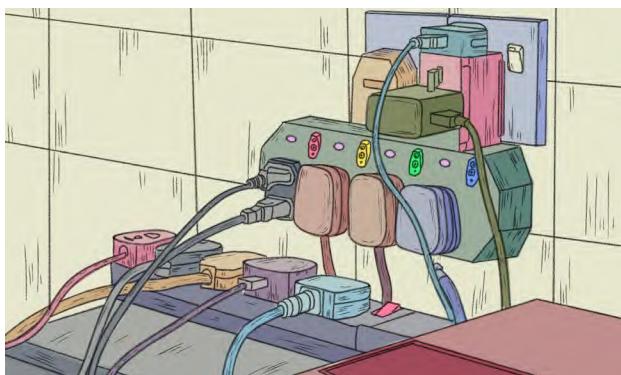
- ▶ Share with the participants information from this table, illustrating the recommended wiring specifications for home air conditioning units based on their ampere rating.

*Ideal matching of wires and ampere rating in ACU*

1 hp	8 amp
1.5 hp	10 amp
2 hp	12 amp
2.5 hp	15 amp
3.0 hp	17 amp
20 hp	54 amp

Fire may cause overloading due to octopus connection and plugging several appliances into one outlet. Worst, if this outlet is flat cord or substandard, it is prone to overheating, especially if the wires or an instrument are unattended or used for an extended period.

As a standard, it is ideal to follow one convenience outlet for one appliance. This is to prevent short circuits or overheating of the electrical appliances. Prolonged device use is also a fire hazard, especially if it is obsolete or defective. It is advisable not to use extension wire if you are only using one appliance, as shown in the photo below.



It shows an extension wires and outlet with overloaded plug-ins of different appliances.

*Prohibition of water to be used in electrical fire.*

It is highly dangerous to use water with live electrical current and should be avoided at all costs. Class A flames, or fires involving common flammable materials, can be effectively put out using water. When using water to put out a fire, it is important to make sure that the electrical current or source has been properly turned off. Water can be used cautiously to put out both class A and class C fires. When handling electrical events, always put safety first to avoid more injury or dangers.

Recall that applying water to live electrical currents without first turning off the power source can result in serious harm and elevated risk.



It portrays a person attempting to stop the fire from an electrical fire thru the use of water.

### ***Never leave unattended wiring or appliances.***

It is a high risk for overheating if you charge a cell phone for 24 hours or utilize all its outlets for a long duration. Appliances or any electrical equipment are just like human beings; they need rest and not to be overused. As a safety practice, it is better to turn off all unattended appliances when leaving the home or even while sleeping. The refrigerator may not need to be shut off since it is designed for on and off, but subject to being adequately checked or maintained by a competent electrician.

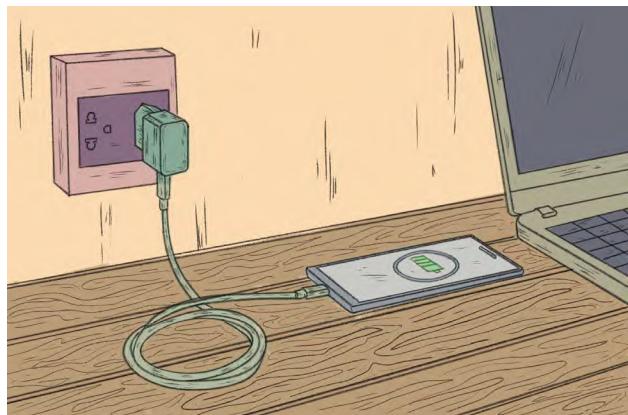
### **Facilitator's Note [14/20]**

- Emphasize to individuals that during moments of shock or when faced with a fire, there's a tendency to overlook the importance of identifying the type of fire they are dealing with. It is crucial for them to understand the specific nature of the fire to take appropriate actions. Highlight that using water is not always the solution, especially in the case of electrical fires. Stress the need for a clear understanding of fire types to ensure the application of the correct suppression methods and enhance overall safety.



It shows an electric iron caught on fire from leaving unattended.

Cellphone charger may cause overheating if it is used for a long duration; it is a hazard placing them on top of combustible material. Never leave it unattended or even while sleeping. Occupants should be aware that chargers may cause overheating if it is used for long. Also, never use a cell phone while still charging because it may cause an explosion and be fatal to the living occupants.



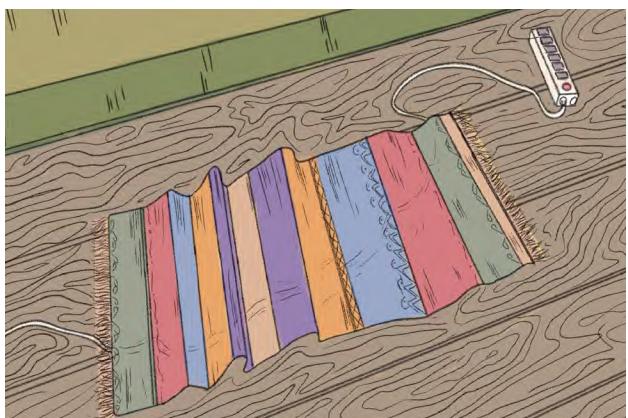
A cellphone left unattended with overly charged battery.

**Facilitator's Note [15/20]**

- ▶ Clarify to individuals that running a cord under a rug or placing wires beneath combustible materials like clothing is not advisable. This practice poses the risk of the cord heating up and potentially igniting a fire. Emphasize the importance of keeping cords visible and away from flammable materials to minimize the risk of fire hazards in the living environment.

***Do not run the electrical cord under rugs or below the carpet.***

The electrical cords may be worn out and may develop the potential to create a spark, especially if they are placed beneath the carpet. The carpet is light; any spark under the rugs may easily ignite fire and spread instantly to other materials. Sub-standard electrical wirings installed permanently under the mats are among the hazards of fire that everyone has to be aware of.

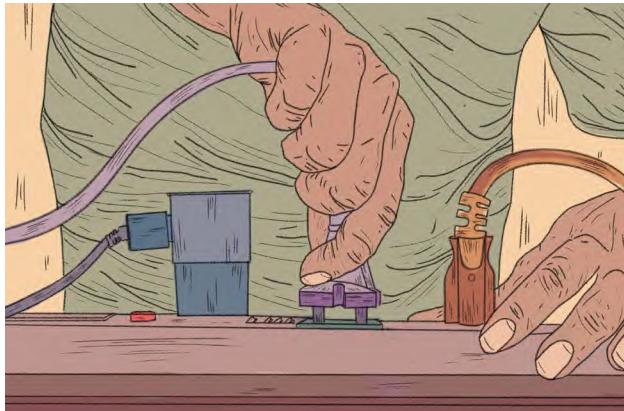


It shows an electrical cord run under the rug.

***Extension wire shall not be used as permanent connection.***

Many causes of fire in history are due to the wrong use of extension wires. An extension wire is usually made of flat cord wires, only suitable for temporary use and not for permanent connection. The extension wire is only applicable to be used in a low-current material or appliance. Extension wire has been commonly used

in the informal settlers because it is cheaper than the standard wire like PDX. However, extension wires could not withstand the rating of a power tool, thus causing short circuits.

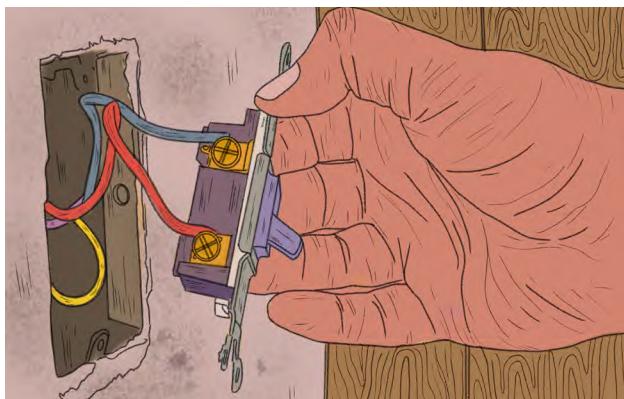


An extension wire was used as permanent outlet connection.

#### Facilitator's Note [16/20]

- Inquire with the participants about their use of extensions cords at home. Emphasize that extension cords should not be utilized as permanent connections, as this is not their intended purpose. Clarify the potential risks associated with using extensions inappropriately and encourage participants to follow safety guidelines for the proper use of electrical extensions.

Exposed live wires may cause its spark to ignite combustible materials and may electrocute. The occupants. That is why combustible materials should not be placed too near the outlets. Exposed or open wires shall be covered tightly.



It shows the repair of an exposed open wires/outlet as a fundamental measure for electrical fire safety in a household.

#### *Electrical wires should be away from children*

Pets or children may play with the wires if they are not adequately secured or tightened. It is better to connect the cables tightly that are out of reach from children or pets. The parents should also watch their kids and pets, especially when using electrical equipment.



A child is trying to put his finger inside the open outlet.

**Facilitator's Note [17/20]**

- ▶ Highlight the critical importance of taking defective switches at home seriously, emphasizing that immediate replacement is essential. Stress the potential risks associated with neglecting faulty switches and underscore the significance of promptly addressing any issues to ensure the safety and functionality of the electrical system.

***Check for faulty/defective electrical switch.***

The defective switch can cause sparks to ignite; it is advisable to call a competent electrician and replace it immediately.

In a light material such as wood or paper, it can easily be ignited with fire due to a spark resulting from its defective switch. Deteriorated wirings should also be replaced as soon as possible.



It demonstrates a person repairing the defective electrical switch.

***Do not let electrical cooking equipment unattended.***

It is a best practice to stay in the kitchen while cooking and never leave it unattended. Remember that it is dangerous to pour water into the burning oil in the pot. Better use any available means of extinguishment procedure in putting out kitchen fire like the use of class k fire extinguisher, smothering the flames using a fire blanket. Baking soda or sand may be used to extinguish kitchen fires. When the involved device is electrically generated, shut off the equipment in doing the extinguishment.



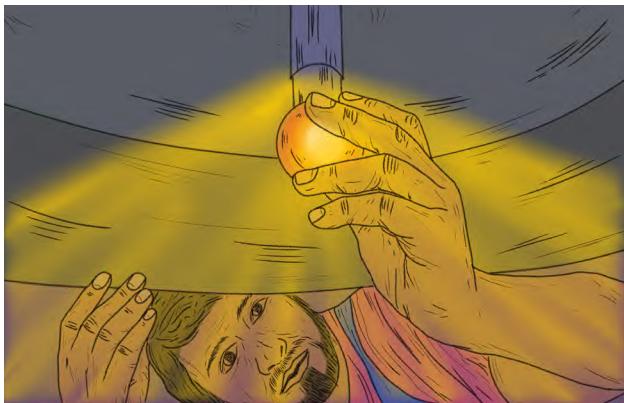
A rice cooker caught on fire due to being left unattended.

### *Obsolete light bulbs, electrical appliances or wiring may cause malfunction or overheating of the unit.*

Be careful when using light bulbs that aren't working properly because some have caught fire. It's really important to replace any broken or not working appliances and light bulbs immediately to keep people safe and prevent them from getting too hot. Also, it's a good idea to pick light bulbs that match their recommended power to work well and avoid any possible dangers. Taking action early to fix broken lights makes homes safer and reduces the chance of bad things happening.

#### Facilitator's Note [18/20]

- Emphasize to the participants that adopting a thrifty approach, especially with electrical appliances and lighting at home, may not result in savings but could incur substantial costs if it leads to a fire. Stress the importance of prioritizing safety over cost-cutting measures to avoid potential hazards and ensure the well-being of both residents and property.



It shows an obsolete light bulb being replaced due to overheating or malfunction.

### *Do not use Christmas lights or decorations overnight or for a long duration.*

During the Christmas season, It is advisable to turn off the Christmas lights and decorative lighting before sleeping. It would be ideal if the lights were not used overnight, especially indoors. The wires of the

Christmas bulbs are usually sub-standard and very petite. Better check its PS and ISO as a safety precaution for the families and occupants.

#### Facilitator's Note [19/20]

- Advise the participants that it is improper to leave decorations, such as Christmas lights, on all night or for prolonged periods of time. Using the same decorations year after year could also be dangerous in terms of fire safety. Emphasise the need of using decorative lighting responsibly and safely to reduce the risk of fire events that are linked to extended or frequent use.



A christmas light decor is being used overnight.

The thermal gun may be used to measure the temperature of the wire or appliance to determine if it is too hot already. The use of a thermal gun helps prevent electrical fire by quickly shutting off the main switch or electrical equipment in the house if the unit exceeds the required average temperature.



It demonstrates checking the temperature of an electric appliance to prevent electrical fire.

*Make sure that combustible or flammable materials are away from the electrical panel or electrical outlet.*

The sparks from the convenience outlet may cause ignition if there are combustible and flammable materials found therein.



It portrays a person safekeeping the flammable materials away from electrical panel.

### *Regular checking of the electrical system.*

There should be a regular checking of the electrical system in one's house or structure to promote electrical fire safety. Let a competent electrician perform maintenance and servicing of your electrical system. Do not hire an electrician who is not highly technical in electrical aspects.



It demonstrates a person doing a regular checking of electrical system.

#### Facilitator's Note [20/20]

- Encourage the participants to make routine inspections of their electrical systems a priority in order to ensure the safety of their houses. Urge them to carry out regular checks in order to spot possible problems early on and fix them, guaranteeing a safe and dependable electrical system.

## PowerPoint and Visual Aids

### Electrical Fire Safety In The Homes

1

#### Common Causes of Electrical Fire

##### Damaged Wiring

Electrical wires can become worn, frayed, or loose over time. When this happens, the wirings can overheat and slowly burn over a prolonged period.



5



2

#### Common Causes of Electrical Fire

##### Substandard Electrical Wiring

Flat cord wires and other sub-standard electrical wirings are common, particularly in the informal settlers. Worst, they utilize the latter as their permanent connection and even use them beyond their rating limit.



6

**Goal:** For the participants to gain information on how to prevent Electrical Fire and control it if an incident happens.

**Objectives:** At the end of the session, the participants will be able to:

1. Define electrical fire;
2. Identify the things that can be used at home in putting off electrical fires; and
3. Acquire awareness on ways to prevent Electrical Fire.

3

#### Common Causes of Electrical Fire

##### Malfunctioning Appliances

Fires can result from faulty or poorly maintained electrical appliances and equipment. Examples include cords, kitchen appliances, heating and air conditioning units, and other devices that draw significant power.



7

### What is an electrical fire?

An electrical fire is a fire that stems from electrical sources or systems. It occurs due to ignitions coming from overheating, malfunctioning, or damaged electrical components, equipment, or wiring. This fire can compromise the safety of residential, commercial, and industrial settings because of its potential to spread rapidly and cause extensive damage to lives and properties.

4

#### Common Causes of Electrical Fire

##### Overheated Appliances

Electric Stoves, Iron, Heaters, and the like would produce fire if they were overused or put on for an extended period. Electric kettles and Water dispensers can erupt fire if empty and no water is stored inside its container.



8

### *Common Causes of Electrical Fire*

#### Overloaded Circuits

Plugging too many devices into a single circuit can overload it. Exceeding the circuit's capacity can generate high heat and ignite nearby combustible materials.



9

### *Common Causes of Electrical Fire*

#### Unattended Electrical Appliances

The public needs to be more concise sometimes in attending to the safety of their electrical appliances. They usually leave their homes without unplugging all active electrical appliances or need to remember to turn off the electrical equipment and lighting.



13

### *Common Causes of Electrical Fire*

#### Use of Old or Outdated Appliances

Use of obsolete appliances is at risk for electrical fire. For example, an old electric fan is prone to fire, primarily if used for over 6 hours.



10

### *Common Causes of Electrical Fire*

#### Defective Lighting Fixtures

Faulty bulbs, lamps, and other lighting fixtures can emit excess heat, which can induce fires. In addition to this, using bulbs that go beyond the recommended wattage increases the risk.



14

### *Common Causes of Electrical Fire*

#### Poorly Installed Extension Cords

Replacing permanent wiring with improperly installed extension cords or connecting multiple appliances to a single power strip can cause a circuit overload and create a fire hazard.



11

### *Common Causes of Electrical Fire*

#### Proximity to Heat Sources

Fires are likely to occur if faulty wires or electrical tools are situated near combustible materials.

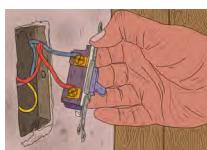


15

### *Common Causes of Electrical Fire*

#### Faulty Outlets and Switches

Loose connections, damaged components, frayed cords, and incorrect wiring can result in overheats and trigger fires.



12

### *Common Causes of Electrical Fire*

#### Malfunctioning electrical systems

Electrical systems can experience short circuits, electrical arcs, and other faults, which can subsequently lead to fires.



16

### Warning Signs



Burning Odor

Smoke

Spark

Discolored Outlet

Hot Switch Plate

Flickering Lights

17

### Basic Electrical Fire Safety In The Homes

Stranded Wires	Amperes
2.0 mm <sup>2</sup> or #14 AWG	15 amp
3.5 mm <sup>2</sup> or #12 AWG	20 amp
5.5 mm <sup>2</sup> or #10 AWG	30 amp
8.0 mm <sup>2</sup> or #08 AWG	45 amp
14 mm <sup>2</sup> or #06 AWG	60 amp
22 mm <sup>2</sup> or #04 AWG	88 amp

The ideal wiring to match the ampere rating while using a circuit breaker in a Single-Family Dwelling

21

### What to do if Kitchen Fire starts?

1. Immediately alert everyone in the vicinity about the fire.
2. Unplug or disconnect the power source fueling the fire to prevent it from escalating
3. Do not use water to put out the fire, as it can electrocute you or further spread the fire.
4. Suppress the fire through the following methods:
  - > Fire extinguisher – designed for putting out electrical fires. Use dry powder or Class C fire extinguisher
  - > Non-flammable blanket – used to smother the flames
  - > Sand – used for small household fires
5. Call 911 or your nearest Fire Station Hotline Number and report the incident.

18

### Basic Electrical Fire Safety In The Homes

1 hp	8 amp
1.5 hp	10 amp
2 hp	12 amp
2.5 hp	15 amp
3.0 hp	17 amp
20 hp	54 amp

Ideal matching of wires and ampere rating in ACU

22

### Basic Electrical Fire Safety In The Homes



Turning off the main switch and light switch.

Use of standard vs sub-standard electrical.

19

### Basic Electrical Fire Safety In The Homes



Fire may cause overloading due to octopus connection and plugging several appliances into one outlet.



Prohibition of water to be used in electrical fire.

23

### Basic Electrical Fire Safety In The Homes



Standard model of electrical system in a single-family dwelling.

20

### Basic Electrical Fire Safety In The Homes



Never leave unattended wiring or appliances.

24



**Basic Electrical Fire Safety  
In The Homes**



Do not run the electrical cord under rugs or below the carpet.



Extension wire shall not be used as permanent connection.

25

**Basic Electrical Fire Safety  
In The Homes**



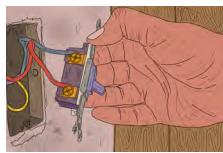
The thermal gun may be used to measure the temperature of the wire or appliance to determine if it is too hot already.



Make sure that combustible or flammable materials are away from the electrical panel or electrical outlet.

29

**Basic Electrical Fire Safety  
In The Homes**



Exposed live wires may cause its spark to ignite combustible materials and may electrocute.



Electrical wires should be away from children

26

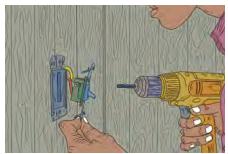
**Basic Electrical Fire Safety  
In The Homes**



Regular checking of the electrical system.

30

**Basic Electrical Fire Safety  
In The Homes**



Check for faulty/defective electrical switch.



Do not let electrical cooking equipment left unattended

27

- What is an electrical fire?
- What are the possible causes of electrical fire at home?
- How can you put out an electrical fire at home?
- How can you avoid electrical fires at home?

31

**Basic Electrical Fire Safety  
In The Homes**



Obsolete light bulbs, electrical appliance or wiring may cause malfunction or overheating of the unit.



Do not use Christmas lights or decorations overnight or for a long duration.

28

**Thank You!**

-End-

32



# **Subject 7**

**Fire Safety Lectures and Seminars for the General Public**

# **LPG at the Homes: Precaution and Maintenance**

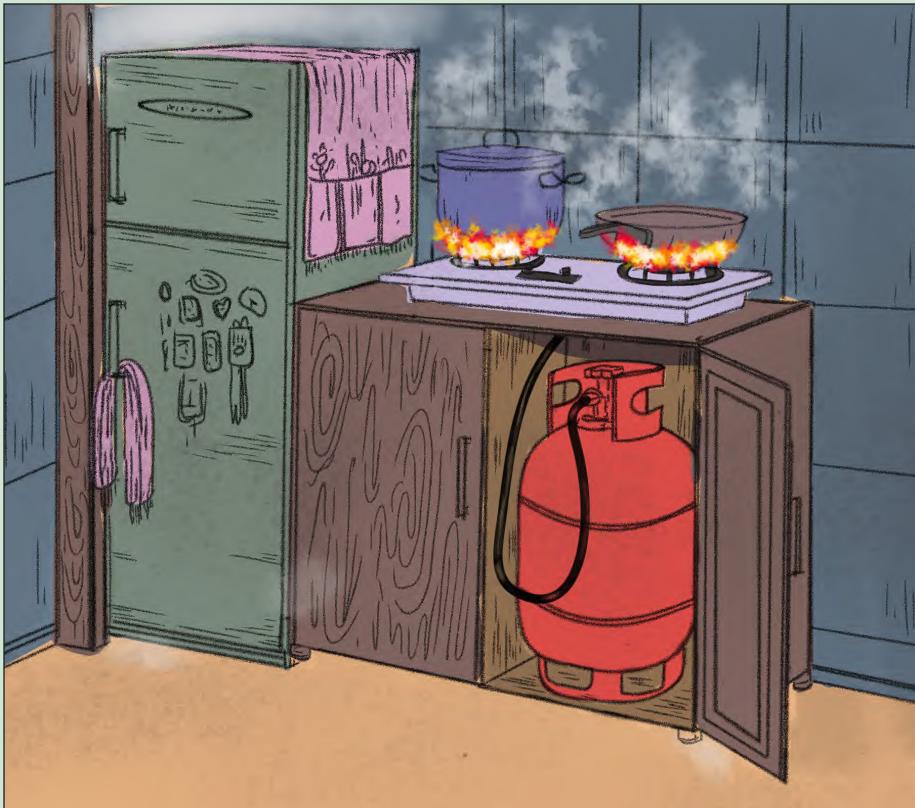


ILLUSTRATION BY: F01 Ricjun P Almacen

# In this Subject 7...

## Goal

To provide general information on LPG and its safety standards.

## Objectives

By the end of the session, participants should be able to:

1. To develop understanding on Liquefied Petroleum Gas (LPG) and its usage.
2. To assist the general public on managing the fire risk associated with LPG.
3. To explain and identify illegal activities in the industry.

### Subject Aids Needed:

#### A. Primary Tools

1. Multimedia Projector
2. PowerPoint Presentation
3. Empty LPG
4. Visual Examples
  - i. Video Presentation related to LPG
  - ii. Any usable means of making an example

#### B. Alternative Tools

1. Flip Cards
2. Printed Tarpaulin
3. Visual Examples

### Total Time of Delivery:

*60 minutes*

## Subject Overview

**Purpose:** It aims to provide reliable information on individual preparedness and response to LPG safety Standard.

**General Guidance:** This session is designed to provide the general public with valuable information on the safe and responsible use of Liquefied Petroleum Gas (LPG) at home. LPG is a common energy source for cooking, heating, and other household needs. However, its use requires specific precautions to ensure the safety of your home and loved ones. Please note that the lighting of LPG during demonstrations is strictly prohibited due to its risks to the facilitators and the participants. The emphasis is on providing valuable information and promoting safe practices.

**Things to Consider:** Participants, in general, are individuals who stay at home, and it's important to acknowledge that some may initially refuse to participate. The most effective approach to gain cooperation in drills is to clearly explain the benefits of participating. To make the drill more engaging, consider incorporating LPG safety precautions as a relevant and practical exercise. Additionally, scheduling the drill at a convenient time for participants can enhance participation and make it more accessible. These actions are likely to lead to increased and more enthusiastic participation.

# Cheat Sheet

## Subject Outline:

Audio/Visual Aids	Outline	Notes
PPTS-1	<b>1. Preparatory</b>  1.1 Greet the participants and start by introducing your name and your teammates.  1.2 Engage participants by asking the following prompt questions: <ul style="list-style-type: none"><li>• Who among you here are using LPG?</li><li>• How do you ensure your LPG at home is safe and not leaking?</li><li>• What is the first thing to do when you discovered your LPG is leaked?</li></ul>	The following questions are not suggestions to choose one, but should all be asked in the presented manner.
PPTS-2	<b>2. Motivation</b>  2.1 Start by showing the participants a video or picture about fatalities on fire incident and injuries related to LPG  2.2 After seeing the hazards of fire through the video presentation/photo, the facilitator may ask the participants: <ul style="list-style-type: none"><li>• What can you see in the video/photo?</li><li>• How can you ensure the safe and efficient use of LPG for cooking at home, and what are the essential precautions and maintenance practices to follow?"</li><li>• What are the key factors you consider when choosing and installing an LPG for home cooking, and how can you optimize its performance while prioritizing safety?"</li></ul>	Give the participants time to interact upon seeing the video presentation.  Select participant to answer the question. There is no right and wrong from the participant answer at this stage. This would be the opener for a short discussion about LPG.
PPTS-3	2.3 Present subject objectives.	Refer to Goals and Subject Objectives
PPTS-4-5 LG7-1	<b>3. Lesson Proper</b>  3.1 Start by discussing the topic " <b>What is LPG?</b> " and its composition.	Utilize PowerPoint/tarpaulin for the presentation.

# Cont.

Audio/Visual Aids	Outline	Notes
PPT S-6 LG 7-2	3.2 Discuss the Characteristics of LPG	The facilitator may refer the comparative report on your respective fire response (e.g., 2022 and 2023)
PPT S-7-11 LG 7-3	3.3 Discuss the LPG Industry Situation.	Emphasized the illegal activities in the LPG Industry that is marked with unsafe and unfair practices.
PPT S-12-15 LG 7-4	3.4 Discuss the Factors to Consider when Choosing LPG Cylinder and Its Parts.	Emphasize Butane empty Canister should not be re-filled with LPG esp. the dilapidated ones.
PPT S-16-18 LG 7-5	3.5 Discuss LPG Safety Tips: What To Do When You Detect Gas Leak.	You may use the empty LPG tank to identify the parts of the LPG
PPT S-19-23 LG 7-6	3.6 Discuss LPG Safety Tips: Proper Handling of LPG.	
PPT S-24-26 LG 7-7	3.7 Discuss the safe exchange of LPG Cylinders.	

## 4. Generalization

4.1 Summarize the lesson and provide a generalization of the things the participants must remember.

## 5. Closing Evaluation

PPTS-27

- 5.1 Review the objectives by asking the questions:
- *What are the key properties of LPG that make it suitable for cooking, and how does the combustion process work?*
  - *How can homeowners effectively reduce fire hazards related to LPG usage, and are there specific safety guidelines to follow?*
  - *What are common illegal activities in the LPG industry, and how can consumers recognize and report them to regulatory authorities?*

5.2 Ask if there are questions or clarification.

PPTS-28

5.3 End the subject.

# Lecturer's Guide and Talking Points

## I. Preparatory

Before the discussion, engage the participants with the following questions:

- Who among you here are using LPG?
- How do you ensure your LPG at home is safe and not leaking?
- What is the first thing to do when you discovered your LPG is leaked?

### Facilitator's Key Guide

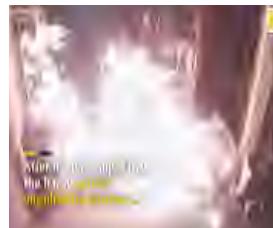
- The following questions are not suggestions to choose one, but should all be asked in the presented manner.

## II. Motivation

Start by showing the participants a video or picture about a house being burned because of an electrical fire.

### Guide Questions

- How can you ensure the safe and efficient use of LPG for cooking at home, and what are the essential precautions and maintenance practices to follow?"
- What are the key factors you consider when choosing an LPG for home cooking, and how can you optimize its performance while prioritizing safety?"



### Facilitator's Key Guide

- Refer to the YouTube link provided for additional content related to this video.  
1. South China Morning Post. (2020, July 31). Fire engulfs kitchen after gas leak in China [Video]. YouTube.  
<https://www.youtube.com/watch?v=4RkKNWoSFvI>

### III. Lesson Proper

#### Facilitator's Note [1/10]

- ▶ Share with the participants details regarding the makeup of LPG gas, delving into its historical timeline to explore when it was first introduced and utilized. Additionally, cite relevant news stories that illustrate instances of fires that originated from LPG gas, providing a comprehensive understanding of the topic.

#### LPG and Its Composition [1/7]

LPG, or Liquefied Petroleum Gas, is a versatile fuel consisting of propane, butane, or a combination of both. These gases, occurring naturally in crude petroleum or natural gas, are easily liquefied under pressure. In the Philippines, the prevalent LPG composition is 60% butane and 40% propane, chosen based on local considerations such as demand and availability. This mixture serves as a commonly used fuel for heating, cooking, and other applications.

LPG, or Liquefied Petroleum Gas, finds extensive use in residential settings, serving purposes such as cooking, heating, air conditioning, water heating, refrigeration, and incineration. The LPG industry has experienced substantial growth due to its broad applications. However, challenges arise as some industry participants resort to unfair and unsafe trade practices, adversely affecting consumers and contributing to negative externalities in society. These issues underscore the importance of maintaining ethical standards and safety measures within the LPG industry to ensure the well-being of consumers and the broader community.

*Data from March 2023 shows that there was a total of 58,266 fire incidents in the Philippines from 2010 to 2021, with 1,254 incidents (or 0.79%) being LPG-related. While these LPG-related incidents may appear to be a relatively small number, they have had a significant impact on properties and lives. This is precisely why the Bureau of Fire Protection (BFP) places a strong emphasis on LPG fire safety as a major component of its preventive measures.*

#### Characteristics of LPG [2/7]

1. LPG is clear as water in its liquid form. As LPG evaporates, it appears like steam but quickly becomes invisible. In its original form, LPG is colorless and odorless.
2. Characteristics of LPG: Pure LPG is odorless. However, for safety purposes, Ethyl Mercaptan, an odorant, is added to LPG to enable the detection of any leaks by scent.
3. LPG is non-poisonous and environmentally friendly.
4. LPG is in liquid form inside the cylinder and transforms into gas when released.
5. LPG can dissolve natural rubber.

## LPG Industry Situation [3/7]

Consumer safety is at risk, and your family's safety is in danger.

### 1. Tampering and Conversion of Cylinder



### Facilitator's Note [2/10]

- ▶ Encourage the participants to make routine inspections of their electrical systems a priority in order to ensure the safety of their houses. Urge them to carry out regular checks in order to spot possible problems early on and fix them, guaranteeing a safe and dependable electrical system.

### 2. Uncertified and Illegally Manufactured Cylinders



### 3. Unbranded / Defective LPG Cylinders



4. Illegally Refilled Cylinders



5. Scrapped and Dilapidated Cylinders



6. Underfilling



### 7. Defective/No Tare Weight (TW) Markings



### 8. Pilferage or “Paihi”



### LPG-Refilled Tin Canister

#### Reasons why not recommended:

- Quality of valve material and composition
- Non-presence of pressure relief valve
- LPG has a higher pressure than pure butane

► Provide a comprehensive explanation of the factors to carefully consider when selecting or using LPG cylinders at home, delving into the detailed aspects that should be taken into account during the purchase or utilization process.

### Factors to Consider in Choosing LPG Cylinder [4/7]

Facilitator's Note [3/10]

1. All markings on the collar, such as:
  - > Date of Manufacture/Requalification
  - > PS/ICC Mark
  - > Tare Weight
  - > Serial Number should be engraved or stamped permanently.
  - > Check for the cylinder valve seal

2. The tare weight marking on the shoulder should be painted and at least 1.5 inches in height.
3. The brand name should be painted on a conspicuous part of the cylinder with the net content placed below.
4. The welded part on the middle part of the cylinder (between the upper and lower caps) should be smooth and not rough. Rough welds are usually manually done at illegal backyard repair shops, and are thus considered unsafe and dangerous
5. The collar and foot ring should be welded and not bolted.

### LPG CYLINDER PARTS

#### **Collar/ LPG Cylinder Guard Ring**

*LPG Cylinder guard ring makes one cylinder ready to hold another cylinder.*

#### **Valve Neckring/ LPG Cylinder Bung**

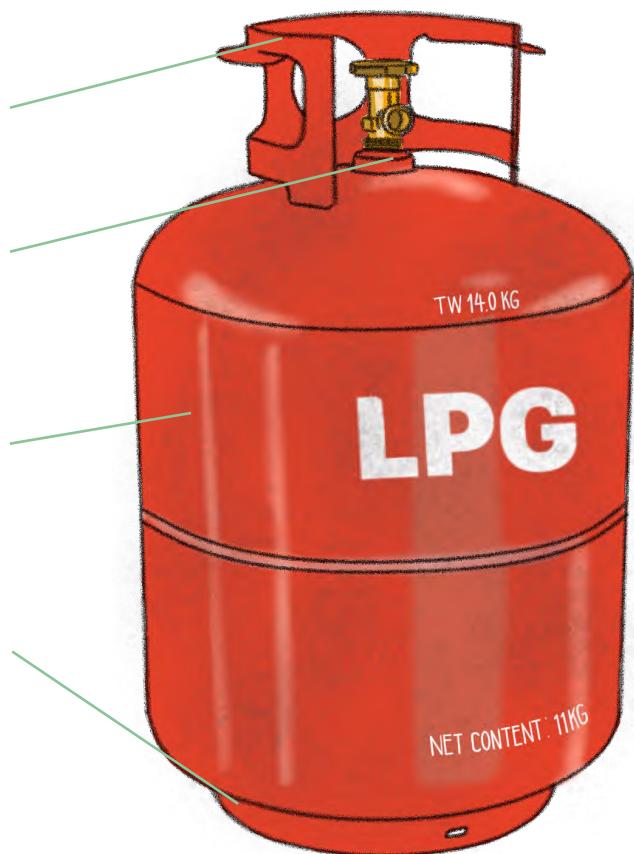
*LPG Cylinder bung is the connection part of a cylinder body ant valve.*

#### **LPG Cylinder Body**

*Gas cylinders are used to safely store gas. Designs and raw materials may be different.*

#### **Footring/ LPG Cylinder Bottom Ring**

*LPG Cylinder bottom ring protects the cylinder's bottom from damages. Also bottom ring helps to stack the cylinders on each other.*



It demonstrates the parts of a LPG tank.

LPG cylinder parts are used to complete the LPG cylinders. Each of these parts has different functions, and if these parts are missing, the cylinders will not work properly and can not protect the LP gas.

## What To Do When You Detect Gas Leak [5/7]

If you smell or suspect a gas leak, you must take the following actions immediately, if it is safe to do so.

1. Put out all open flames in the area immediately since gas leaks can seriously increase the risk of combustion.



A warning sign is depicted, advising against the use of open flames in the event of a gas leak. This visual cue serves as a clear precautionary measure, emphasizing the importance of exercising caution to prevent potential hazards associated with combustible gases.

2. Refrain from using the phone or activating any electrical switches, as these actions may trigger sparks that could ignite the leaking gas.



It features a prominent sign cautioning against the use of electrical devices, such as phones, in the presence of a gas leak. This visual communication underscores the critical importance of avoiding potential sources of ignition, contributing to a safer environment during a gas leak emergency.

3. Widening all windows and doors will help disperse the gas and reduce the chance of it condensing in enclosed areas, so act quickly to release the

### Facilitator's Note [4/10]

- Enlighten the participants about the importance of adhering to specific measures when faced with a gas leak at home, emphasizing the critical role these actions play in ensuring both safety and prompt resolution of the situation.

stored gas. But be careful, and don't do anything that could accidentally turn on the ignition.



It showcases an individual opening a window in response to a gas leak, illustrating a proactive measure to mitigate the risk of gas accumulation in enclosed spaces. This visual depiction emphasizes the importance of ventilation as a precautionary step to enhance safety during a gas-related incident.

4. Do not touch the gas appliances if you accidentally operate the ignition switch. Instead, turn off the gas supply at the pressure regulator switch and, if possible, disconnect the regulator from the cylinder.



It illustrates the act of turning off the gas supply at the pressure regulator, highlighting a crucial step in addressing a gas-related situation. This visual representation underscores the importance of swiftly and decisively taking control of the gas source to enhance safety and prevent potential hazards.

5. In situations where the gas leak persists, it is crucial to prioritize personal safety and the safety of others in the vicinity. Avoid ringing doorbells, as the electrical mechanism involved may exacerbate the risk. Evacuate the area promptly, and communicate the urgency to your neighbors, urging them to evacuate as well, especially if the gas leak is significant or if uncertainty prevails.



It captures a scenario where an individual swiftly evacuates a residence in response to a gas leak, taking immediate action to ensure personal safety. Concurrently, the person promptly calls for assistance, highlighting a proactive approach to dealing with the emergency and seeking professional help promptly.

6. Do not re-connect the gas cylinder until all necessary steps have been taken to prevent gas from escaping again.



It portrays the process of reconnecting the gas cylinder after successfully addressing and fixing the gas leak issue. The careful and methodical action of re-establishing the connection serves as a visual representation of the meticulous safety measures taken to ensure a secure and hazard-free environment.

## *Proper Handling of LPG [6/7]*

1. Ensure the safe storage of the liquefied petroleum gas (LPG)-filled cylinder by placing it in a location that is both well-ventilated and easily accessible. Proper ventilation is essential to dissipate any potential gas leaks and maintain a safe environment. Additionally, storing the cylinder in a readily accessible area ensures that it can be easily reached in case of emergencies or routine checks. This precautionary measure not only safeguards against potential hazards but also facilitates efficient monitoring and maintenance

### **Facilitator's Note [5/10]**

- Educate the participants on the correct handling of LPG, emphasizing the importance of adhering to precautionary measures when dealing with it.

practices, contributing to the overall safety and well-being of the surrounding environment.



The depiction reveals the strategic placement of an LPG (liquefied petroleum gas) container in an area characterized by effective ventilation. This deliberate positioning emphasizes a commitment to safety by minimizing the risk of gas buildup and promoting optimal air circulation, ensuring a secure environment for handling and storing the LPG.

#### Facilitator's Note [6/10]

- ▶ Describe the reason for placing LPG in an upright position, detailing the importance of maintaining the cylinder's stability, even pressure distribution, and overall safety.

- ▶ 2. Keep the LPG cylinder upright for safe handling, avoiding tilting to prevent gas leakage and combustion risks. Regularly inspect for damage and proper valve conditions, consulting a registered gas professional for assessments and repairs as needed. Adhering to these guidelines minimizes risks associated with LPG use, promoting a secure environment.



It shows a tilted position of LPG which is inappropriate and may cause a potential fire hazard at home.

- ▶ 3. Handle the cylinder with care during transportation; refrain from throwing or rolling it. Utilize proper lifting techniques to prevent any potential damage and prioritize safety. Exercise caution to ensure both the integrity of the cylinder and the well-being of those involved.



It shows improper handling of LPG, including tilting and rolling during transportation. This depiction serves as a clear visual warning against unsafe practices, emphasizing the potential risks associated with mishandling liquefied petroleum gas during transit.

- Never use tools like hammers to operate LPG cylinder valves; it can compromise the valve's integrity and pose safety risks. Use the designated valve key or wrench provided by the gas supplier for proper and safe operation. If you encounter issues, consult a professional or the supplier rather than attempting to force the valve with tools, which can lead to damage and safety concerns.



It shows a person trying to operate the LPG cylinder valve using hammer.

#### Facilitator's Note [7/10]

- Please emphasize the strict prohibition against using tools, such as a hammer, when handling the valve of an LPG cylinder.

- Regularly inspect rubber tubing for loose connections, damage, and leaks to maintain a safe gas system. If defects are noticed, consult your registered gas contractor for necessary changes. Their expertise ensures proper assessment and timely interventions, contributing to the overall safety and reliability of your gas supply system.



It shows an individual conducting a routine examination of the rubber tubing connection.

#### Facilitator's Note [8/10]

- Additionally, underscore that using detergent or soapy water for detecting gas leaks is not only simple but also safer compared to other methods.

6. Avoid using a naked flame when checking for gas leaks; instead, use a safe alternative like liquid detergent or soapy water. Applying this non-flammable solution to suspected areas allows for bubble formation, indicating a potential leak without the risk associated with open flames. This approach ensures a secure method for identifying gas leaks while prioritizing safety.



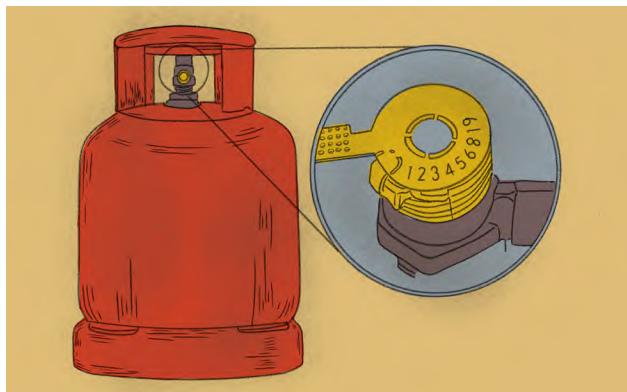
It demonstrates the proper and safe alternative of checking gas leak on lpg using liquid detergent or soapy water.

7. Furthermore, exposing LPG cylinders to heat can compromise the integrity of the materials, potentially leading to structural weaknesses or damage that could result in leaks or ruptures. This emphasizes the critical need for users to avoid subjecting cylinders to elevated temperatures, ensuring the safe storage and usage of LPG to prevent accidents, injuries, and damage to property. Regular safety inspections and adherence to recommended storage and usage guidelines are essential in maintaining the integrity of LPG systems and mitigating potential hazards associated with heat exposure.



It illustrates the improper positioning of the LPG tank, exposed to heat or in close proximity to an open flame.

- When purchasing LPG, ensure to inspect the integrity of the security seal, making sure it is both undamaged and securely attached to the valve. Verify that the safety seal is intact and firmly affixed to the valve before making the purchase.



It shows an LPG tank with the safety seal attached.

- Leaving gas appliances turned on without constant supervision can pose significant safety risks and should be strictly avoided. This cautionary advice is rooted in the potential hazards associated with unattended gas devices. Gas appliances, such as stoves, heaters, or ovens, have the inherent risk of gas leaks, malfunctions, or other unforeseen issues that may lead to serious consequences. For instance, an unattended gas stove might accidentally ignite surrounding materials, causing a fire. Additionally, prolonged operation of gas appliances without supervision could result in gas buildup, leading to health risks for occupants due to exposure to potentially harmful gases. To ensure the safety of both individuals and property, it is crucial to adhere to this

#### Facilitator's Note [9/10]

► Narrate to the participants an illustrative story of an individual who made the choice to purchase a more affordable LPG, only to face the dire consequences of a subsequent fire outbreak due to the compromised quality of the gas.

warning and adopt responsible practices by turning off gas appliances when not in use and remaining vigilant during their operation. Regular safety checks and following manufacturer guidelines further contribute to maintaining a secure environment when dealing with gas-powered devices.



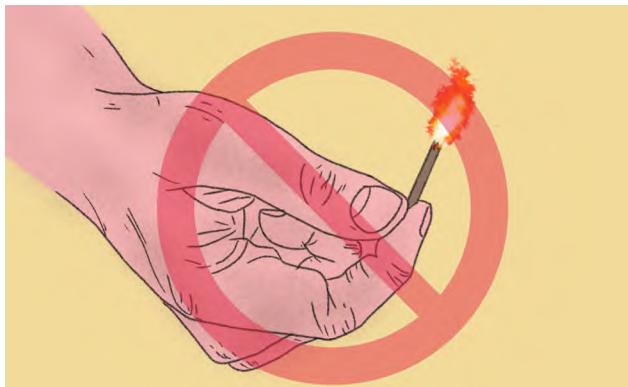
It shows someone deeply focused on cooking, raising concerns about a potential fire hazard due to distraction or neglect. It emphasizes the importance of staying vigilant and following safety measures in the kitchen to reduce the risk of accidents during cooking.

#### Facilitator's Note [10/10]

- ▶ Emphasize to the participants the critical importance of a secure exchange of LPG cylinders, ensuring not only their own safety but also contributing to the overall well-being of the community by minimizing potential risks associated with improper handling.

#### *Safe Exchange of LPG Cylinders [7/7]*

1. Promptly extinguish all flames in the vicinity and strictly avoid smoking. This precautionary measure is essential to mitigate the risk of potential ignition or fire hazards. By ensuring a flame-free environment, you contribute significantly to overall safety, minimizing the chances of accidents and fostering a secure setting for all occupants.



The warning sign cautions against open flames during a gas leak, emphasizing the need for caution to prevent hazards related to combustible gases.

2. For a secure exchange of LPG gas tanks, it is crucial to turn off gas appliances. This precaution minimizes

the risk of gas leaks or ignitions during the tank replacement process, ensuring a safer environment for both individuals handling the exchange and the surrounding area. By switching off gas appliances before the exchange, potential hazards associated with the release of gas are reduced, contributing to a smooth and secure transition between gas cylinders. This simple yet essential step underscores responsible practices and emphasizes safety considerations in managing LPG systems.



It shows an individual switching off the LPG gas.

3. To safely replace a used gas cylinder, it's important to disconnect the pressure regulator. This step ensures a controlled disconnection of the gas supply, minimizing the risk of leaks during the cylinder replacement. By following this precaution, the process becomes safer for both individuals handling the exchange and the surrounding environment, emphasizing the significance of proper procedures in maintaining gas supply system integrity.



It shows an individual disconnecting the pressure regulator.

4. Carefully and firmly re-connect the pressure regulator and check that there is no smell/sound of gas leak from the cylinder connection.



It shows an individual reconnecting the pressure regulator.

5. Switch on the pressure regulator and check your gas appliances for proper operation.



It shows an individual switching on the pressure regulator.

## PowerPoint and Visual Aids

### LPG at the Homes: Precaution and Maintenance

1

Data from March 2023 shows that there was a total of 58,266 fire incidents in the Philippines from 2010 to 2021, with 1,254 incidents (or 0.79%) being LPG-related. While these LPG-related incidents may appear to be a relatively small number, they have had a significant impact on properties and lives. This is precisely why the Bureau of Fire Protection (BFP) places a strong emphasis on LPG fire safety as a major component of its preventive measures.

5



2

### Characteristics of LPG

1. LPG is clear as water in its liquid form.
2. Pure LPG is odorless. However, for safety purposes, Ethyl Mercaptan, an odorant, is added to LPG to enable the detection of any leaks by scent.
3. LPG is non-poisonous and environmentally friendly.
4. LPG is in liquid form inside the cylinder and transforms into gas when released.
5. LPG can dissolve natural rubber.

6

**Goal:** To provide general information on LPG and its safety standards.

**Objectives:** At the end of the session, the participants will be able to:

1. To develop understanding on Liquefied Petroleum Gas (LPG) and its usage.
2. To assist the general public on managing the fire risk associated with LPG.
3. To explain and identify illegal activities in the industry.

3

### LPG Industry Situation



Tampering and Conversion of Cylinders



Uncertified and Illegally Manufactured

7

### What is LPG?

LPG stands for Liquefied Petroleum Gas, which can be either propane, butane, or a mixture of both. These gases occur naturally in crude petroleum or natural gas. In the Philippines, LPG is primarily a mixture of 60% butane and 40% propane.

4



Unbranded/Defective LPG Cylinders



Illegally Refilled Cylinders

8

### LPG Industry Situation

### LPG Industry Situation



Scrapped and Dilapidated Cylinders



Underfilling

9

### Factors to Consider in Choosing LPG Cylinders

2. The tare weight marking on the shoulder should be painted and at least 1.5 inches in height.
3. The brand name should be painted on a conspicuous part of the cylinder with the net content placed below.

13

### LPG Industry Situation



Defective/No Tare Weight (TW) Markings



Pilferage or "Paihi"

10

### Factors to Consider in Choosing LPG Cylinders

4. The welded part on the middle part of the cylinder (between the upper and lower caps) should be smooth and not rough. Rough welds are usually manually done at illegal backyard repair shops, and are thus considered unsafe and dangerous.
5. The collar and foot ring should be welded and not bolted.

14

### LPG-Refilled Tin Canister

Reasons why not recommended:

- Quality of valve material and composition
- Non-presence of pressure relief valve
- LPG has a higher pressure than pure butane

11

### Parts of LPG Cylinder



15

### Factors to Consider in Choosing LPG Cylinders

1. All markings on the collar, such as:
  - > Date of Manufacture/Requalification
  - > PS/ICC Mark
  - > Tare Weight
  - > Serial Number should be engraved or stamped permanently.
  - > Check for the cylinder valve seal

12

### What To Do When You Detect Gas Leak



1. Extinguish all naked flames.



2. Do not use cellphone or operate any electrical switches

16

### What To Do When You Detect Gas Leak



3. Open all windows and doors wide to disperse the gas



4. Turn off the gas at the regulator switch and, if possible, disconnect it from the cylinder.

17

### Proper Handling of LPG



5. Frequently check rubber tubing for loose connections, damage and leaks.



6. Do not use a naked light when looking for leaks. Use Liquid detergent.

21

### What To Do When You Detect Gas Leak



5. If the gas leak is serious, leave the house, notify the Fire Station or call 911.



6. Don't reconnect the gas tank until you make sure no more gas can leak.

18

### Proper Handling of LPG



7. Do not subject a cylinder to heat.



8. When buying LPG, check if the security seal is intact and firmly affixed to the valve.

22

### Proper Handling of LPG



1. Store the LPG-filled cylinder in a well-ventilated and readily accessible area.



2. Avoid tilting LPG cylinders. Keep it in an upright position at all times

19

### Proper Handling of LPG



10. Do not leave gas appliances turned on without constant supervision.

23

### Proper Handling of LPG



3. Do not throw or roll the cylinder when moving it.



4. Do not use tools to operate cylinder valves.

20

### Safe Exchange of LPG Cylinders



1. Extinguish all nearby flames and do not smoke.



2. Switch off gas appliances

24

### *Safe Exchange of LPG Cylinders*



3. Switch off and disconnect the pressure regulator then replace the used cylinder



4. Carefully and firmly re-connect the pressure regulator and check that there is no smell/sound of gas leak from the cylinder connection.

25

### *Safe Exchange of LPG Cylinders*



5. Switch on the pressure regulator and check your gas appliances for proper operation.

26

- What are the key properties of LPG that make it suitable for cooking, and how does the combustion process work?
- How can homeowners effectively reduce fire hazards related to LPG usage, and are there specific safety guidelines to follow?
- What are common illegal activities in the LPG industry, and how can consumers recognize and report them to regulatory authorities?

27

**Thank You!**

-End-

28

## **Subject 8**

Fire Safety Lectures and Seminars for the General Public

# **Fire Suppression Method Using Ordinary Household Materials**



ILLUSTRATION BY: F01 Ricjun P Almacen

# In this Subject 8...

## Goal

To provide participants with a comprehensive understanding of the use of common household materials for fire suppression.

## Objectives

By the end of the session, participants should be able to:

1. Identify ordinary household materials for fire suppression.
2. Understand and apply basic fire suppression techniques using common household materials for enhanced home safety.

Subject Aids Needed:	Total Time of Delivery:
<p><b>A. Primary Tools</b></p> <ul style="list-style-type: none"><li>1. Multimedia Projector</li><li>2. PowerPoint Presentation</li><li>3. Hands-On Materials<ul style="list-style-type: none"><li>i. Pot Lid</li><li>ii. Salt</li><li>iii. Baking Soda</li><li>iv. Fire Resistant Cloth or Blanket</li></ul></li></ul> <p><b>B. Alternative Tools</b></p> <ul style="list-style-type: none"><li>1. Flip Cards</li><li>2. Printed Tarpaulin</li></ul>	<p><b>25 to 20 minutes</b></p>

## Subject Overview

**Purpose:** To introduce the participants to ordinary household materials used for fire suppression.

**General Guidance:** In this subject, the lecturer/facilitator must deliver the content in the simplest terms possible to ensure it is understandable to the public. They should ensure that the lecture is delivered in a fun and enthusiastic manner to capture the audience's attention. Additionally, the lecturer may prepare the following aids.

**Things to Consider:** The participants are primarily community members aged roughly 18 and above. When delivering the subject, it is important to prioritize simplicity and ease of understanding. This subject encourages direct interaction with the participants, including moving around the lecture venue and incorporating humor. Sensitivity is essential when providing examples, particularly when discussing matters that may involve personal details. It's important to stay on the topic and adhere to the schedule as closely as possible.

# Cheat Sheet

## Subject Outline:

Audio/Visual Aids	Outline	Notes
PPTS-1	<h3>1. Preparatory</h3> <p>1.1 Greet the participants and start by introducing your name and your teammates.</p> <p>1.2 Engage participants by asking the following prompt questions:</p> <ul style="list-style-type: none"><li>• <i>How many of you have experienced a small fire incident at home, like a stovetop fire or a kitchen mishap?</i></li><li>• <i>Can you name a few common household items that you think could be used to suppress a fire in an emergency?</i></li><li>• <i>Do you think it's important for everyone in your household to know basic fire suppression methods using household materials?</i></li></ul>	The following questions are not suggestions to choose one, but should all be asked in the presented manner.
PPTS-2	<h3>2. Motivation</h3> <p>2.1. Engage participants through the activity "<b>Fire Safety Scavenger Hunt</b>"</p> <p>2.2 Present subject objectives.</p>	The facilitator will introduce and explain the 'Fire Safety Scavenger Hunt' activity to the participants..
PPTS-3		Refer to Goals and Subject Objectives
PPTS-4 LG8-1	<h3>3. Lesson Proper</h3> <p>3.1 Begin by providing a brief introduction to the topic of Fire Suppression Methods Using Common Household Materials before delving into the specifics of each method.</p> <p>3.2 Discuss the Pot Lid Method</p>	The facilitator will explain one by one the gathered materials from the Fire Safety Scavenger Hunt and allow the participants to share their experience about these household materials.
PPTS-5 LG8-2		

# Cont.

Audio/Visual Aids	Outline	Notes
PPT S-6 LG8-3	3.3. Discuss the Salt Method	The facilitator shall demonstrate each method one at a time, providing explanations.
PPT S-7 LG8-4	3.4 Discuss the Baking Soda Method	
PPT S-8 LG8-5	3.5 Discuss the Damp Cloth/Table Cloth Method	
<b>4. Demonstration</b>		
	4.1 Following the discussion, delve into the guidelines or things to remember for the participants in the activity and initiate the demonstration of each method.	Participants are encouraged to ask questions during the demonstrations.
<b>5. Generalization</b>		
	5.1 Summarize the lesson and provide a generalization of the things the participants must remember.	
<b>6. Closing Evaluation</b>		
PPT S-9	6.1 Review the objectives by asking the questions: <ul style="list-style-type: none"><li>• <i>What are the common household items we discussed during the lesson that can help suppress fires?</i></li><li>• <i>What are some basic fire suppression techniques we learned using household materials?</i></li><li>• <i>How do these techniques contribute to enhanced home safety?</i></li></ul>	
	5.2 Ask if there are questions or clarification.	
PPTS-10	5.3 End the subject.	

# Lecturer's Guide and Talking Points

## I. Preparatory

Before the discussion, engage the participants with the following questions:

- How many of you have experienced a small fire incident at home, like a stovetop fire or a kitchen mishap?
- Can you name a few common household items that you think could be used to suppress a fire in an emergency?
- Do you think it's important for everyone in your household to know basic fire suppression methods using household materials?

### Facilitator's Note [1/4]

- The following questions are not suggestions to choose one, but should all be asked in the presented manner.

## II. Motivation

Begin by explaining the "Fire Safety Scavenger Hunt" activity to the participants. The facilitator should divide everyone into small teams or pairs, making sure there's a mix of ages and backgrounds in each group. The goal of the hunt is to discover everyday household items that could be helpful in a fire emergency. These items might be easy to miss, so the task is to find them. Participants should work together in their teams, encouraging collaboration to make the hunt enjoyable. Instruct each team to return with the items they've found and discuss how each item can be used for fire suppression. Set a time limit for the scavenger hunt, preferably between 5 to 10 minutes.

### Facilitator's Note [2/4]

- Following the scavenger hunt, it's a fantastic idea to gather the teams and create a space for open discussions about what they've discovered. This not only reinforces the learning but also promotes interactive engagement among participants. Share your findings, discuss different perspectives, and maybe even uncover some unexpected insights together.
- Remember, the essence of this educational journey is not just about gathering knowledge but doing so in an enjoyable and collaborative way. Let's delve into the world of fire safety together, spark some enlightening conversations, and make sure we have a great time while doing it!

### III. Lesson Proper

#### Facilitator's Note [3/4]

- ▶ Begin the discussion by asking participants about the common methods they employ to deal with small fires at home. Subsequently, underscore the importance of having readily available household materials for fire suppression, especially in situations where immediate assistance is unavailable.

#### ► *Fire Suppression Methods Using Ordinary Household Materials [1/5]*

Many common items found in homes can serve as effective tools for suppressing fires. For example, baking soda is known for its ability to extinguish small grease fires, and a fire blanket can be used to smother flames. Salt, sand, and even a metal lid can also play roles in fire suppression. It's not only about having fire extinguishers; it's about knowing how to use what's readily available to you in an emergency.

#### *Pot Lid Method [2/5]*

A pot lid can be used as an effective fire suppression method for small stovetop fires. Using a pot lid to suppress a stovetop fire is a simple and effective method. It works by cutting off the fire's oxygen source, which is essential for combustion. However, it's crucial to remember that this method is suitable for small, contained fires, such as those that occur on the stovetop. For larger fires or fires in different areas, it's essential to follow proper fire safety procedures, including calling the fire department and evacuating if necessary.

A pot lid is a practical tool for smothering small stovetop fires, especially those involving cooking oils or grease. When a fire erupts in a pan or pot, quickly grab a matching-sized pot lid. Place the lid over the pan, ensuring it completely covers the flames. By doing this, you effectively cut off the fire's oxygen supply, which is essential for combustion. Leave the lid in place for a few minutes to ensure the fire is fully extinguished.



It shows fire suppression utilizing pot lid method.

## Salt Method [3/5]

When you find yourself face-to-face with a small grease fire in the kitchen, here's a handy trick: reach for that everyday hero in your pantry – salt. It's a game-changer in fire suppression.

The moment the flames spark, grab a container of salt and sprinkle it generously over the affected area. Picture it as a protective salt shield. Why does this work, you ask? Well, salt plays the superhero by swooping in and drawing away the heat, simultaneously putting a barricade on the fire's oxygen supply, which is essentially its fuel. This dynamic duo effect helps smother the flames. Now, here's the key: sprinkle the salt with care, ensuring it covers the entire space evenly for maximum impact. So, the next time a minor kitchen blaze occurs, consider salt your secret weapon – a simple yet powerful ally in ensuring kitchen safety.



It shows fire suppression utilizing salt method.

## Baking Soda Method [4/5]

Baking soda is another household item that is highly effective for suppressing kitchen fires, especially those involving cooking oils and grease. When a fire breaks out, grab a box of baking soda. Sprinkle a generous amount of baking soda evenly over the flames. Like salt, baking soda works by smothering the fire and disrupting the oxygen supply. Sprinkle baking soda evenly over the fire to extinguish it. It's crucial to apply the baking soda calmly and consistently for the best results.



It shows fire suppression utilizing baking soda.

### Damp Cloth/ Table Cloth Method [5/5]

A damp cloth or tablecloth can be used to suppress small fires, such as those on a surface or in a small container. When you need to extinguish a fire, take a cloth or tablecloth and dampen it with water. Gently place the damp cloth over the flames, ensuring it covers the entire burning area. The moisture in the cloth cools the fire and helps to smother it by blocking oxygen. This method is particularly helpful for small, contained fires.



It shows fire suppression utilizing cloth.

## IV. Demonstration

### Things the Participants Need to Remember

**Safety First:** Personal safety should always be the top priority. If a fire becomes larger or uncontrollable, evacuation and calling the fire department are essential.

**Quick Response:** Participants should remember the importance of quick action when a small fire occurs. Time is critical in preventing fires from spreading.

**Common Household Materials:** Everyday items can be valuable tools in fire suppression. Knowing how to use them can make a significant difference in an emergency.

**Practice:** Practicing the use of household materials for fire suppression is valuable. Regular drills or discussions with family members can improve preparedness.

**Small Fires vs. Large Fires:** Different fire suppression methods are suitable for small, manageable fires. Larger fires require professional assistance, and safety measures, like evacuation, must be followed. Empowerment: Participants are empowered to take control of fire emergencies in their homes, fostering a sense of confidence and readiness.

#### Facilitator's Note [4/4]

- If the fire becomes larger or gets out of control, you should not attempt to contain it. Your safety comes first. Get out of the house and call the nearest Fire Station. It's essential to remember that these methods are typically suitable for small, manageable fires that have not yet spread. For larger or more serious fires, it's crucial to prioritize safety, evacuate if necessary, and follow proper fire safety procedures, which may include using fire extinguishers and calling the fire department.

## PowerPoint and Visual Aids

### Fire Suppression Method Using Ordinary Household Materials

1



How a **Pot Lid** suppress a fire?

### Fire Safety Scavenger Hunt

2



How does **Salt** help mother a fire?

**Goal:** To provide participants with a comprehensive understanding of the use of common household materials for fire suppression.

**Objectives:** At the end of the session, the participants will be able to:

1. Identify ordinary household materials for fire suppression.
2. Understand and apply basic fire suppression techniques using common household materials for enhanced home safety.

3



How does **Baking Soda** help smother a fire?

### Fire Suppression Methods Using Ordinary Household Materials

Many common items found in homes can serve as effective tools for suppressing fires. For example, baking soda is known for its ability to extinguish small grease fires, and a fire blanket can be used to smother flames. Salt, sand, and even a metal lid can also play roles in fire suppression. It's not only about having fire extinguishers; it's about knowing how to use what's readily available to you in an emergency.

4



How does **Damp Cloth/Blanket** work to suppress fires by smothering, and why this method is effective?

8

- *What are the common household items we discussed during the lesson that can help suppress fires?*
- *What are some basic fire suppression techniques we learned using household materials?*
- *How do these techniques contribute to enhanced home safety?*

9

## Thank You!

-End-

10

**146 MODULE 6 Fire Safety Lectures and Seminars for the General Public**

# **Subject 9**

**Fire Safety Lectures and Seminars for the General Public**

# **Rural Fire Safety**

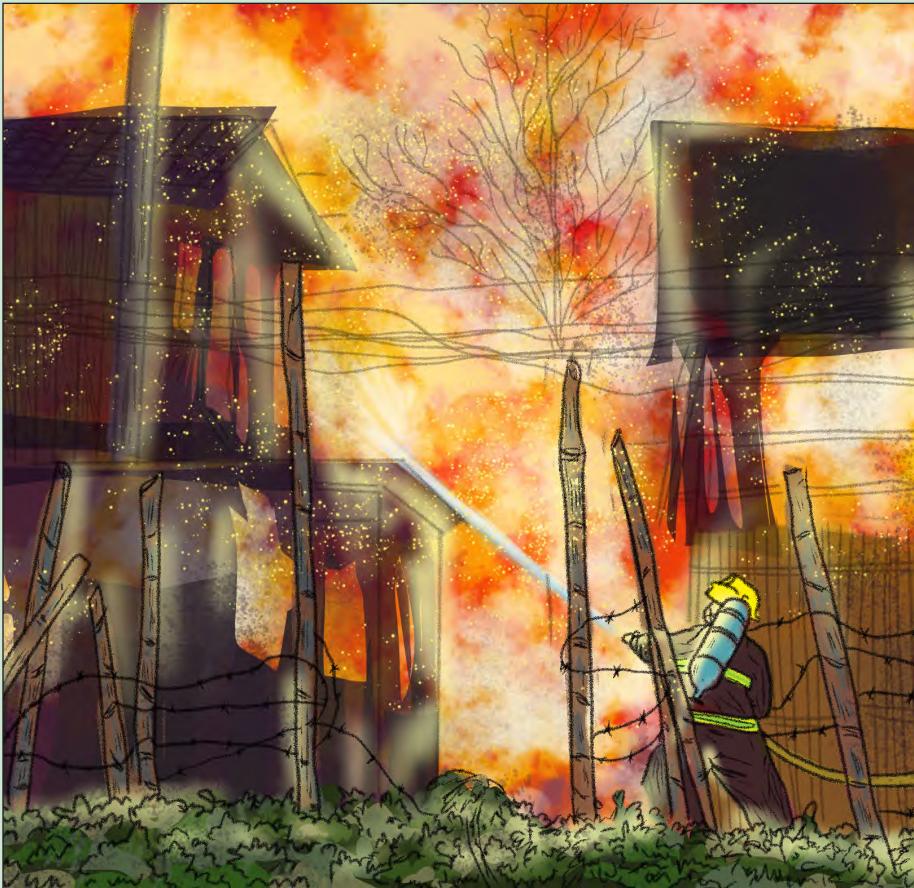


ILLUSTRATION BY: FO1 Ricjun P Almacen

# In this Subject 9...

## Goal

To build a rural community of empowered individuals, creating a fire-safe environment with proactive and responsive measures.

## Objectives

By the end of the session, participants should be able to:

1. Explain Rural Fire Safety and its importance;
2. Identify the common causes of fires in the rural areas;
3. Understand the importance of Household Basic electrical connections, design, and their applications in rural communities;
4. Understand the basic concepts of fire safety in a typical Filipino Dirty Kitchen (abuhan, lutuan, batalan);
5. Understand the importance of Fire Safety Education in using conventional coco driers;
6. Understand the basic concepts of agricultural fire safety; and
7. Apply the bucket brigade concept in real-life events and comprehend its significance in emergencies.

### Subject Aids Needed:

#### A. Primary Tools

1. Multimedia Projector
2. PowerPoint Presentation
3. Hands-On Materials
  - i. Pot Lid
  - ii. Salt
  - iii. Baking Soda
  - iv. Fire Resistant Cloth or Blanket

#### B. Alternative Tools

1. Flip Cards
2. Printed Tarpaulin

### Total Time of Delivery:

2 to 3 Hours

## Subject Overview

**Purpose:** To identify the fire hazards in the homes of rural communities to become a fire safety-conscious individual. The participants will be made aware through visual examples of how a fire starts and what everyday items may cause it in a rural setting, including agricultural products and processes tied up with such communities.

**General Guidance:** The majority of barangays in the Philippines qualify as rural communities. These communities are far from town centers and seldom reached by regular public fire education campaigns of the BFP. Remote and isolated, the BFP is vested with the responsibility to ensure that these communities remain safe from fire using an entirely different approach.

# Cheat Sheet

This subject, Rural Fire Safety, will only be applied to the conduct of Public Fire Education (PFE) in barangays classified as rural barangays under local classifications. It includes barangays that are;

1. Remote, in terms of distance from the town proper and that firefighting capabilities could not penetrate under normal circumstances;
2. Mountainous barangays that could not be reachable or visited regularly;
3. Agricultural barangays with residents actively engaging in agriculture as their main livelihood and condition that classifies a community as rural.

The subject contains a single subject outline with four (4) separate lessons. All should deliver in a single seating of at most three (3) hours. Before the PFE in identified rural communities, proper coordination should be made with the barangay officials and, if necessary, the Police and other security forces.

Considering the rural setting, regular lecture equipment may not be applicable, such as PowerPoint presentations; hence, printed visual aids (printed PPT) in delivering this subject are needed.

**Things to Consider:** The participant is the general public, for example, the Barangay People, Local Community, Farmer's Cooperatives, Local Businessmen, Entrepreneurs, and individuals with access to areas open to all and not restricted to any particular community class. Efforts must be considered when it comes to delivering the subject. In this subject, direct interaction with the participants is advised, such as moving around the lecture venue and making jokes. Sensitivity should be kept in mind in making or citing examples, especially in matters that might involve personal details. Stay on the topic and the schedule as much as possible. Further, the security of the facilitators and the participants should be a priority in conducting PFE to identified rural communities.

# Cont...1

## Subject Outline:

Audio/Visual Aids	Outline	Notes
<b>1. Preparatory</b>		
PPTS-1	<p>1.1 Greet the participants and start by introducing your name and your teammates.</p> <p>1.2 Engage participants by asking the following prompt questions:</p> <ul style="list-style-type: none"><li>• <i>What is the difference between rural and urban areas?</i></li><li>• <i>What are the possible fire-related incidents that usually happen in rural areas?</i></li></ul>	The following questions are not suggestions to choose one, but should all be asked in the presented manner.
PPTS-2	<p>2.1 Start by showing the participants a video or picture about common fire hazards in the Rural Areas.</p> <p>2.2 After seeing the hazards of fire through the video presentation/photo, the facilitator may ask the participants:</p> <ul style="list-style-type: none"><li>• <i>What do you see in the photos?</i></li><li>• <i>What is the setting of the incidents?</i></li><li>• <i>What are the fire hazards present?</i></li><li>• <i>How can we avoid destructive fire in this kind of setting?</i></li></ul>	Give the participants time to interact upon seeing the video presentation. Select participant to answer the question. There is no right and wrong from the participant answer at this stage
PPTS-3-4	2.3 Present subject objectives.	Refer to Goals and Subject Objectives
<b>3. Lesson Proper</b>		
PPTS-5-12 LG9-1	<p>3.1 Discuss Lesson 1: <b><i>Introduction to Rural Fire Safety</i></b></p> <ul style="list-style-type: none"><li>• <i>Rural Fire Safety and Its Importance [1/2]</i></li><li>• <i>Rural Fire Safety Tips [2/2]</i></li></ul>	Utilize INFO TARP for the presentation.

# Cheat Sheet

## Audio/Visual Aids

## Outline

## Notes

PPTS-13-27  
LG9-2

### 3.2 Discuss Lesson 2: ***Household Basic Electrical Connections, Design and Their Applications & Dirty Kitchen Fire Safety Tips***

- What is Electricity? [1/8]
- What makes an Electrical Fire? [2/8]
- Electrical Fire Hazards at Home and in the Community [3/8]
- Common Causes of Electrical Fire [4/8]
- Dos and Don'ts While Using Electrical Equipment and Appliances [5/8]
- Dirty Kitchen [6/8]
- Kitchen Fire Safety Plan [7/8]
- How do Fires Spread? [8/8]

Start presenting the importance of fire safety in rural areas.

With the assistance of other personnel, the lecturer shall distribute a copy of the Safety Survey Checklists to the participants and let them have it answered. Shall give clear instructions on how they will respond to the form.

Further, I shall keep the copy at hand until instructed to present it before the group. They shall do this in 5 minutes only. The lecturer shall discuss and explain the topics in such a way that the public can understand (local dialect is an advantage)

The lecturer must engage the audience in giving examples.

PPTS-28-52  
LG9-3

### 3.3. Discuss Lesson 3: ***Fire Safety on Farmers' Conventional Copra Driers & Agricultural Fire Safety***

- Common Causes of Conventional Coco Drier Fires [1/5]
- The Proper Operation and Maintenance of Conventional Driers [2/5]
- Fires in Agricultural Chemicals [3/5]
- Dealing with a Fireline [4/5]
- Fighting Fires Involving Agricultural Chemicals [5/5]

PPTS-53-57  
LG9-4

### 3.4. Discuss Lesson 4: : ***The Community Bucket Brigade***

- Historical Events Involving Bucket Brigade [1/3]
- Things to Consider Before Extinguishing the Fire Using Bucket Brigade Method [2/3]
- Bucket Relay Outdoor Demonstration [3/3]

## 4. Generalization

4.1 Summarize the lesson and provide a generalization of the things the participants must remember.

# Cont...2

Audio/Visual Aids	Outline	Notes
PPTS-59	<b>5. Closing Evaluation</b>	
PPTS-60	<p>5.1 Review the objectives by asking the questions:</p> <ul style="list-style-type: none"><li>• <i>What is rural fire safety, and how essential is it for the general public to know?</i></li><li>• <i>What are the possible common causes of rural fires?</i></li><li>• <i>What is the importance of Household Basic electrical connections, design, and their applications?</i></li><li>• <i>What are the essential fire safety concepts in a typical Filipino Dirty Kitchen?</i></li><li>• <i>What is the importance of Fire Safety Education in using conventional coco driers?</i></li><li>• <i>What is agricultural fire safety?</i></li><li>• <i>How to perform bucket brigade? What is its significance in emergencies?</i></li></ul>	
PPTS-61	<p>5.2 Let the participants watch an AVP about "Bomberos Are Not Superheroes."</p> <p>5.3 Ask if there are questions or clarification.</p> <p>5.4 End the subject.</p>	Watch a short video showing Superman doing his heroic act. The video contains actions or activities that offer the capability of a superhero in extinguishing an industrial fire. ( <a href="https://www.youtube.com/watch?v=700gnOXF0l">https://www.youtube.com/watch?v=700gnOXF0l</a> )

# Lecturer's Guide and Talking Points

## I. Preparatory

Before the discussion, engage the participants with the following questions:

- What is the difference between rural and urban areas?
- What are the possible fire-related incidents that usually happen in rural areas?

### Facilitator's Note [1/12]

- The following questions are not suggestions to choose one, but should all be asked in the presented manner.

## II. Motivation

Start by showing the participants a video or picture about a common fire hazards in the Rural Areas.

### Guide Questions

- What do you see in the photos?
- What is the setting of the incidents?
- What are the fire hazards present?
- How can we avoid destructive fire in this kind of setting?



It shows children engaged in playing with matchsticks or fire.

**Facilitator's Note [2/12]**

- ▶ Give the participants time to interact upon seeing the video presentation



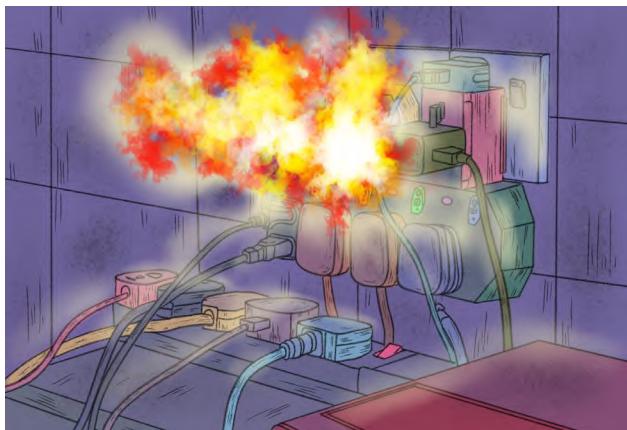
It shows a flammable liquids were improperly stored.



It shows a person carelessly practicing "pagsisiga" or burning.



It shows a pot of boiling oil left without supervision.



It shows an overloaded convenience outlet.

### Facilitator's Note [3/12]

- ▶ Select participant to answer the question. There is no right and wrong from the participant answer at this stage.



It shows an unattended lamp.



Depicting a cigarette butt thrown onto combustible material, such as dried leaves, leading to a fire.

### III. Lesson Proper

#### Facilitator's Note [4/12]

- ▶ The facilitator shall now evaluate their respective houses by filling up the household fire safety checklist in Annex A.
- ▶ With the assistance of other personnel, the lecturer shall distribute a copy of the Household Fire Safety Survey Checklist to the participants and let them have it answered.
- ▶ Further, they shall keep the copy at hand until instructed to present it before the group. They shall do this in 5 minutes only.

## Lesson 1: Introduction to Rural Fire Safety

### Rural Fire Safety and Its Importance [1/2]

Fire danger is more remarkable in rural locations. The distances between settlements and between residents inside those communities present problems with fire. Fire fatality rates are exceptionally high in rural areas. The local community is severely affected emotionally and financially by the loss of both property and livestock.



IN THE ILLUSTRATION: a firefighter encountering difficulties while rescuing a burning rural house.

Given this circumstance and a recent increase in fire instances, consider fire safety while moving from a city to a rural or remote place. You must first be aware of the particular fire threats in regions near trees. Second the location can cause longer response times from the rescue and fire departments. If you live where a rural and urban area meet, with structures and flammable materials, remember that fire safety is your sole responsibility.

- *It can be challenging to put out a fire if it starts outside in a remote area. Rather than protecting homes and buildings, trained firefighters are to preserve natural resources.*
- *Fire stations are located distant from many homes. The result is longer emergency response times. In a couple of minutes, an entire property can be obliterated or destroyed by fire.*

- Fire suppression can be brutal in rural areas with little water resources. Homes may be in isolated areas and surrounded by tall foliage, flammable materials, and trees.



A fire truck struggles with rescue efforts in a rural area due to challenging terrain.

## Rural Fire Safety Tips [2/2]

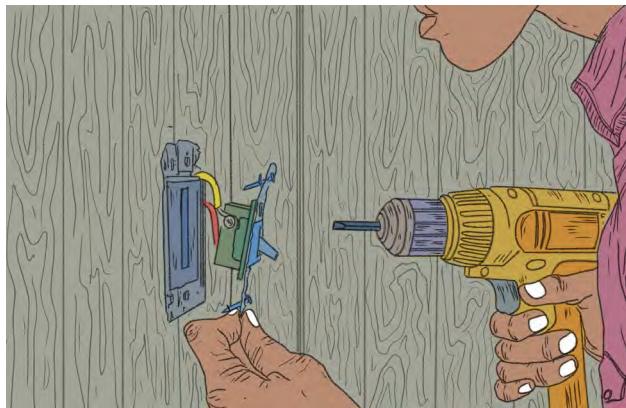
1. The wiring must be in good condition; if electrical wiring shows signs of aging and rot, then it needs servicing by a qualified electrician.
2. Extension cables must be temporary. Disconnect it from the convenience outlet after its use!
3. Protect receptacles from damage, moisture, and dust.
4. We must make repairs/replacements if there's damage with safety in mind.
5. The area around lights and electrical outlets was cleansed of dust and cobwebs.
6. Oily materials are stored in a covered metal container to keep them cool.
7. In mind the emergency numbers of the nearest fire stations and other Response Groups
8. We must not patronize Flammable (bote bote) materials.
9. Learn the basics of bucket relay and the use of fire lines
10. Farm inputs like pesticides and fertilizers must be sealed and away from children's reach
11. Farmers must engage in regular fire drills along with

*the community. Thus, they will trained in using fire extinguishers.*

12. *Burning around the place shall only be done by adults; adult supervision is encouraged if minors are on task.*

## *Lesson 2: Household Basic Electrical Connections, Design and Their Applications & Dirty Kitchen Fire Safety Tips*

Electrical connections are all around your home. Electrical wiring connects to switches, outlets, appliances, disconnects, meters, and circuit breakers.<sup>1</sup>



It shows a person repairing exposed electrical switch.

Various methods can be used to establish these connections, but our focus is on identifying safe and reliable approaches that ensure lasting and secure connections for a lifetime.

Loose connections can cause electrical wiring and devices to heat up and are a potential electrical fire. That's why safe and secure electrical connections are so important. To make these connections, you will need some advice and a guide to making proper connections on devices, appliances, and critical electrical panel connections.<sup>2</sup>

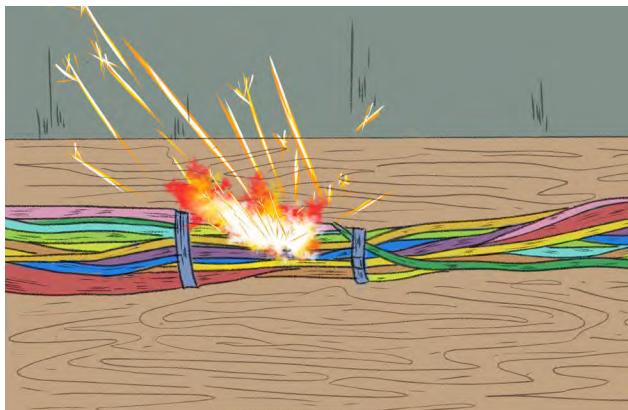
### *What is Electricity? [1/8]*

Electricity is a form of energy resulting from the existence of charged particles. Electricity is the flow of moving electrons. When the electrons flow, it is called an electrical current.<sup>3</sup>

<sup>1</sup>Guide to Electrical Connections in and Around the Home. (<https://www.thespruce.com/top-electrical-connections-in-the-home1152767>)

<sup>2</sup><https://www.thespruce.com/top-electrical-connections-in-the-home-1152767>

<sup>3</sup>About Compassionate Capitalism Electricity | Compas-



It portrays a damaged wire emitting sparks while carrying an electric current.

## *What Makes An Electrical Fire? [2/8]*

Electricity is one of the most common causes of fires both in the home and in the workplace. Electric short-circuiting, arcing, sparks, overloading, use of defective or misused electrical equipment, a major causes of electrical fires.<sup>4</sup>

## *Electrical Fire Hazards at Home and in the Community [3/8]*

An electrical hazard can be defined as - a dangerous condition where a family member could make electrical contact with energized equipment or a conductor and from which the person may sustain an injury from shock and, - there is potential for the person to receive an arc flash burn,



It shows an electrical system on a post is shown catching fire due to illegal connections, with a rescue operation in progress.

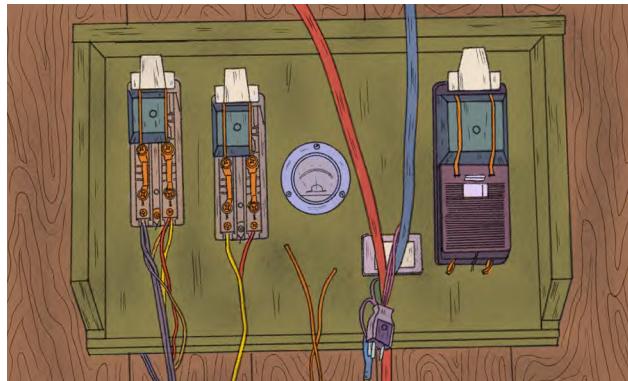
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sionate Capitalism Electricity. (<https://cc17-28.com/aboutus.php>)

<sup>4</sup>Dangers/Precautions | Logistics Operational Guide. (<https://log.logcluster.org/dangersprecautions>)

thermal burn, or blast injury.<sup>5</sup>

Another threat to electrical safety is the rise in illegal connections, known as "routing," within communities. This involves running electrical connections through hanging wires from one house to another. Such practices overload the source residence, creating safety risks for neighboring areas. Addressing this issue requires enhanced enforcement, community awareness, and collaboration with local authorities to dismantle illegal connections and promote safer electrical practices.<sup>6</sup>



It shows an aged makeshift fuse box utilized in the electrical systems prevalent in rural areas.

## *Common Causes of Electrical Fires [4/8]*

Electrical fires can stem from a range of factors, each presenting unique risks. A comprehensive understanding of these common causes is essential for implementing effective preventive measures and promoting overall electrical safety:

- Contact with live conductors
- Short-circuiting
- Arcs and sparks
- Overloading/community routing
- Inadequate grounding
- Non-usage of standard replacement/ Tampering/Jumper
- Wet environment

### Simple House Wiring Diagram

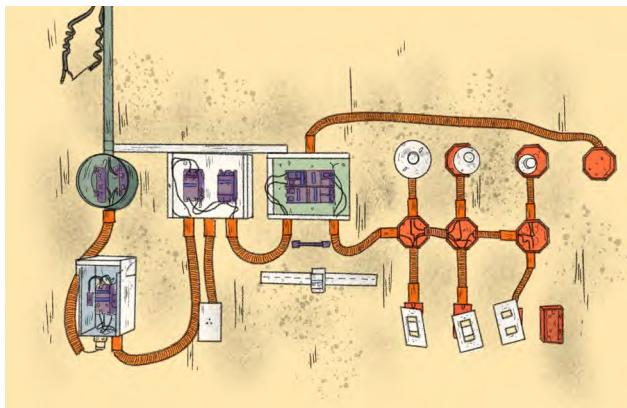
<sup>5</sup>Do you shock with a pulse? – Yemialadeworld.com.  
(<https://www.yemialadeworld.com/do-you-shock-with-a-pulse/>)

<sup>6</sup>Do you shock with a pulse? – Yemialadeworld.com.  
(<https://www.yemialadeworld.com/do-you-shock-with-a-pulse/>)

**Facilitator's Note [5/12]**

- The Electrical Board Diagram (4x8 ft) must be assembled before the conduct of the community lectures. The facilitator shall require the participants to get close and learn the basic electrical board system, how a household electrical system works, the electrical loads, and how fuses work during short circuits.

*Understanding basic electrical circuits and their components using the actual circuit board.*



It shows an example of a simple house wiring diagram.

## *Dos and Don'ts While Using Electrical Equipment and Appliances [5/8]*

- Unplug electrical equipment by grasping the plug and pulling. Do not pull or jerk the cord to unplug the equipment.<sup>7</sup>
- Do not plug equipment into defective receptacles.
- Check for frayed, cracked, or exposed wiring on equipment cords.
- Family members should know the location of electrical circuit breaker panels that control the equipment and lighting in their respective areas. They must identify the Circuits and equipment disconnection.
- If any defects on the electrically powered equipment or tools. Only certified electricians are allowed to repair electric-driven apparatus or any electrical maintenance.

## *Dirty Kitchen [6/8]*

You might imagine a disorganized, messy space strewn with unwashed dishes and leftover food whenever you hear the phrase “dirty kitchen.” But in the Philippines, it’s far from what the name suggests. A staple in most Filipino households, the “dirty kitchen” is an auxiliary

<sup>7</sup>eLCOSH: Basic Electrical Safety.(<https://elcosh.org/document/1398/d000467/basic-electrical-safety.html>)

cooking area that stands apart from the home's primary, or clean, kitchen. It is often located outside the home, serving as a functional hub for everyday culinary tasks and preparations.

The presence of outdoor kitchens in the Philippines is a reflection of the country's distinctive blend of cultural traditions and environmental considerations. In response to the tropical climate, cooking outdoors becomes a practical and comfortable choice. This practice effectively channels heat and cooking aromas away from the main living areas, contributing to a cleaner, more laid-back, and welcoming living environment.

Moreover, Filipino families often have large gatherings, and food is a crucial part of these occasions. A separate dirty kitchen lets the primary kitchen stay clean and presentable when hosting guests.<sup>8</sup>

### *Typical Filipino Dirty Kitchen*

We must treat hazards in the kitchen area with utmost priority. In a little while, without notice, it will be the source of ignition, which will result in catastrophe.



It shows a portrayal of a typical Filipino dirty kitchen commonly employed in rural areas.

### *Kitchen Fire Safety Plan [7/8]*

1. *Watch as you prepare:* You are cooking while unattended is a significant source of fires. When grilling, boiling, broiling, or frying food, remain in the kitchen. Watch what you heat at all times.
2. *Maintain a clean kitchen:* Keep your cooking surfaces clean to avoid food and grease buildups that could catch fire. We should clean up spills on the stove

<sup>8</sup><https://stonedepot.ph/dirty-kitchen/>

### **Facilitator's Note [6/12]**

► The facilitator will engage the participants using the following prompt questions:

1. Which rice tastes better: the one that is cooked by wood or by the other means?
2. Where do you prefer to cook Baguet, bulalo or inihaw, sa labas o sa loob ng bahay?
3. Lutong bahay o lutong karenderia?

and in the oven.

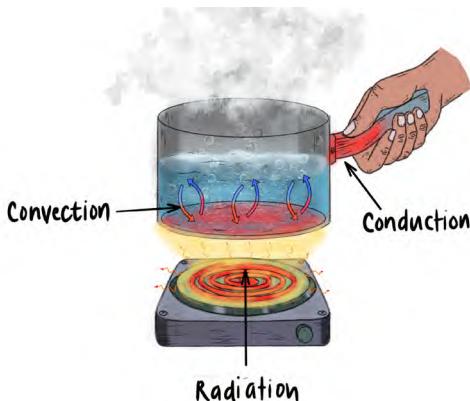
3. *Put on short or fitted sleeves:* Loose clothing, such as shirts with drooping sleeves, can come in contact with heating devices and ignite. Before cooking, we should tightly fold open sleeves.
4. *Avoid putting combustibles (above, side) close to the fire:* Maintain a minimum of one meter between combustibles and the stove. It includes wallhangings, curtains, dish towels, cutlery made of plastic or wood, newspapers, and grocery bags.
5. *Keep kids and pets away:* There should be a safe distance of at least one meter. Always keep young children and pets away from the fire.
6. *We shall not hang potholders, towels, and tablecloths:* Avoid hanging these things on door handles or counters because infants, toddlers, and pets may pull on them



It shows a typical Filipino dirty kitchen commonly employed in rural areas, featuring wood as fuel displayed at the bottom, posing a potential fire hazard.

## How Does Fire Spread? [8/8]

The risk of fires escalating becomes more pronounced when easily flammable materials or nearby objects catch fire. In order to safeguard ourselves, as well as our homes and workplaces, it is crucial to be aware of these potential hazards and exercise caution. A proactive approach involves taking steps to minimize the risk of fire spreading by ensuring that combustible materials are kept at a safe distance from potential ignition sources. This simple yet effective measure not only helps prevent fires from gaining momentum but also contributes to maintaining the safety of everyone in the vicinity. By staying informed and



It shows three ways of heat transfer.

implementing preventive measures, we can collectively create a safer environment and reduce the likelihood of fire-related incidents.

**Conduction Fires:** Conduction fires spread through direct contact between materials. A conduction fire spreads when a fire heats a material that's a good heat conductor, like metal, which then comes into contact with a combustible material. The fire can then travel further across a room or building in this manner.

**Radiation Fires:** A fire can spread by radiation when the heat travels through electromagnetic waves in the air. When a fire breaks out, heat will travel in all directions until it reaches an object that absorbs it. When it gets a combustible material, it will smolder and eventually burn.

**Convection Fires:** Convection is the most common cause of fire spreading in domestic and commercial buildings and is also the most dangerous. Heat always rises, but in the setting of an office, for example, the heat is trapped once it hits the ceiling. So, it then begins to travel horizontally, thus spreading the fire simultaneously. Any materials in the room that are combustible will also ignite, further fueling the fire.<sup>9</sup>

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<sup>9</sup> <https://www.firesealsdirect.co.uk/advice-centre/how-do-fires-spread/>

## *Lesson 3: Fire Safety on Farmers' Conventional Copra Driers & Agricultural Fire Safety*



It shows a traditional copra dryer, a vital livelihood for farmers in rural areas, is portrayed engulfed in flames, with firefighters working on the rescue operation. being rescued by firefighters

### *Common Causes of Conventional Coco Drier Fires [1/5]*

1. *Unattended Burning:* It is a common reason for uncontrollable fires on the farm, leading to the damage of crops and properties. Uncontrollable fires because of unattended burning may be caused by the following:
  - a. Healthy breaks,
  - b. Meal Schedules,
  - c. Abandoned
  - d. Gossiping,
  - e. Maritessing
  - f. Forgotten
2. *Stupidity:* We can prevent fire from becoming destructive if we have enough knowledge on how to handle it properly. Most fire accidents happen because of carelessness and lack of understanding of some people who manage it, such as the following:
  - a. Misinformation,
  - b. Wrong delegation of tasks (minors)
  - c. Senselessness,
  - d. Ignorance,
  - e. Mindlessness (tulala), (in love)
  - f. Foolishness

- g. Alcohol intoxication (drunkards)
3. ***Fuel Overfeeding:*** Fuel is one of the elements to make a fire. We must remember that adding fuel will cause the fire to grow and, later on, may become uncontrollable. Fuel control is essential to maintain the safety of the nearby properties.
  4. ***In Haste for the Pair buying Price:*** Buying cheap services is practical for our budget but may cause unexpected accidents due to poor quality. We don't need to compromise the cost of services over the quality and safety of the work.
  5. ***In a Rush to Complete the Task:*** We often want to finish our task immediately to proceed to the next one without considering safety first. This kind of attitude may cause accidents that will lead to the destruction of properties or even people's lives.

**Simple Demonstration Activity: Lit and Burn**

*Observing the different flash point of a coco husk due to the moisture content present within them.*



It shows a dried coconut husk.

**Facilitator's Note [7/12]**

- The lecturer may take out dried and fresh coco husk bamboo twigs and a lighter and set them on fire, explaining the point and asking what the representations of the used items are.
- Emphasize the characteristics of the things, such as the moisture content present in them. Then, continue to keep a balanced and enjoyable discussion.

## Proper Operation And Maintenance Of Conventional Driers [2/5]

To help ensure that your conventional copra driers continue to provide safety and reliability for years to come, consider these best practices for operation and maintenance.

1. Never overfeed the furnace with fuel (panggatong, sognod)
2. Clean the Interior and Remove coco peat after use.
3. Remove Soot and Creosote (carbon) Buildup.

4. Ensure an adequate supply of water is ready for fire control and extinguishment.
5. A Standby Fire Extinguisher is widely acceptable.
6. Fireplace coals can remain hot enough to start a fire for up to three days (Fireplace Safety Tips.<sup>10</sup> Pour water to soothe the remaining embers at once).
7. We must check copra beds must be checked before the start of the operation (low-cost copra beds made of bamboo sticks after two uses).
8. Never allow continuous operation; rest, let it cool, and ventilate the Copra drier.

**Facilitator's Note [8/12]**

- Walk through a functional conventional coco drier around the place (pre-identified site) and discuss the proper operation and maintenance of traditional coco driers to prevent fire incidents in the future. Use the prepared FIRE SAFETY CHECKLIST FOR COPRA DRIER in Annex B.
- A walk-through or actual site assessment on a functional Copra drier is advantageous as it provides adequate information to sustain the learners' interest.



It displays an unsafe conventional dryer that lacks proper precautionary measures.



It illustrates a sample of the tunnel-type coco drier structure recommended and widely employed by farmers in rural areas.

<sup>10</sup><https://servprolakecharles.com/blog/post/125169-fire-smoke-damage-restoration/fireplace-safety-tips>

## Fires in Agricultural Chemicals [3/5]

**Fertilizers:** Although most fertilizers are stable, there have been problems with fires and explosions with materials such as ammonium nitrate. (Fires in Agricultural Chemicals | MU Extension. <https://extension.missouri.edu/publications/g1908>)

**Ammonium Nitrate:** Like other inorganic nitrates, ammonium nitrate is an oxidizing agent and will increase fire intensity. All grades of ammonium nitrate can be detonated if they are in the proper crystalline form, if the initiating source is sufficiently large, or if they are heated under sufficient confinement. The degree of confinement necessary is usually most significant for the purest material.



It shows an example of Ammonium Nitrate available in the marmarket

Storage recommendations for bagged and bulk ammonium nitrate are published in NFPA number 490, "Code for the Storage of Ammonium Nitrate." The standard covers building construction, pile sizes, spacing, and separation of ammonium nitrate from contaminating material that could increase its sensitivity during a fire. Also covered are flow, cleanliness of the storage area, and precautions against ignition sources. (Fires in Agricultural Chemicals | MU Extension. <https://extension.missouri.edu/publications/g1908>)

**Anhydrous Ammonia:** Can cause severe burns upon contact. Contact with liquid ammonia can also cause loss of sight, severe injury of the respiratory membranes, and varying degrees of irritation of skin, eyes, and mucous membranes. For these reasons, use adequate body protection — a self-contained breathing apparatus with full face shields (air paks) and protective clothing. If working around the shut-off valves, wear

**Facilitator's Note [9/12]**

- Walk through a functional conventional coco drier around the place (pre-identified site) and discuss the proper operation and maintenance of traditional coco driers to prevent fire incidents in the future. Use the prepared FIRE SAFETY CHECKLIST FOR COPRA DRIER in Annex B.
- A walk-through or actual site assessment on a functional Copra drier is advantageous as it provides adequate information to sustain the learners' interest.

▶ rubber gloves and a rubber apron to protect your body from contact with liquid.



It shows a truck loaded with Anhydrous Ammonia

If you are exposed to liquid anhydrous ammonia, wash the exposed area with water for at least 15 minutes or until you receive medical attention. (Fires in Agricultural Chemicals | MU Extension. <https://extension.missouri.edu/publications/g1908>)

**Urea:** Classified as a non-flammable material by the Interstate Commerce Commission. Urea will not support combustion by itself but melts at 534.2 degrees Fahrenheit. At temperatures higher than 534.2 degrees Fahrenheit, it decomposes, giving off mildly toxic fumes. For this reason, the toxicity hazard of urea is given as slightly dangerous. (Fires in Agricultural Chemicals | MU Extension. <https://extension.missouri.edu/publications/g1908>)



IN THE ILLUSTRATION: An example of UREA fertilizer, extensively utilized by farmers in their plantations, is depicted.

**Phosphate Fertilizer Materials:** commonly used and stored in blending plants (triple super phosphate, diammonium phosphate) will not support combustion and have a melting point over 1500 degrees Celsius. Both of these are rated as slightly dangerous in toxicity. (Fires in Agricultural Chemicals | MU Extension. <https://extension.missouri.edu/publications/g1908>)



It presents an example of ammonium phosphate fertilizer, a product commonly used by farmers in their plantations.

**Firefighting procedures should include:**

- Flood the area to reduce the temperature.
- Provide adequate ventilation.
- Wear protective clothing and breathing apparatus.

**Potash Fertilizer Materials:** Muriate of potash is the principal potassium-containing fertilizer used as a bulk blending ingredient. It is rated slightly dangerous as a fire and toxicity hazard. (Fires in Agricultural Chemicals | MU Extension. <https://extension.missouri.edu/publications/g1908>)

**Chemical Fires**

Fire in a warehouse or farm storage area where agricultural chemicals are stored may create a significant hazard to firefighters, inhabitants, and livestock because the possibility of poisoning is added to the usual fire hazards. In addition, if proper firefighting procedure is not followed, water or chemicals used to fight the fire could quickly spread contamination over a wide area. For this reason, planning and training for chemical fires are very important. (Fires in Agricultural Chemicals | MU Extension. <https://extension.missouri.edu/publications/g1908>)

**Caution: Flammable.** Avoid sources of extreme heat or ignition, including sparks or fire. (Tetramethyllead(75-74-1)

MSDS Melting Point Boiling Point Density Storage Transport.  
([https://www.chemicalbook.com/ProductM  
SDSDetailCB7397451\\_EN.htm](https://www.chemicalbook.com/ProductMSDSDetailCB7397451_EN.htm)).

***Wash skin when contaminated:*** The worker should immediately wash the skin when it becomes contaminated.

With increased agricultural production, farmers are using more fertilizers and chemicals. It has caused new problems for firefighters due to the numerous types of chemicals used and increased chemical storage by farmers and suppliers. (Fires in Agricultural Chemicals | MU Extension. <https://extension.missouri.edu/publications/g1908>)



It portrays a farmer spreading fertilizers, with a potential concern of the chemicals occasionally catching fire and posing a hazard.

Chemicals used by farmers and commercial applicators include fertilizers and soil conditioners, soil fumigants, herbicides, pesticides, rodenticides, insecticides, fungicides, explosives, and the like. Many of these chemicals release toxic fumes with little or no warning when exposed to fire. Most serious are the organic phosphates, such as parathion and malathion, and chlorinated hydrocarbons.

When fighting chemical fires, wear protective clothing, use a self-contained breathing apparatus (air paks), and have sufficient air available to complete the job. For additional protection, work on the upwind side of the fire.

Firefighters should spend more time with farmers and suppliers to plan in case of a fire. Trade names and formulations number in the thousands. Many of these are poisonous chemicals for their intended use in humans. Proper storage, hazard identification, established emergency procedures, and firefighter training are essential. (Fires in Agricultural Chemicals | MU Extension. <https://extension.missouri.edu/publications/g1908>)

## Dealing with a Fireline [4/5]

The buffer between your structure and the surrounding region is called defensible space.

Adequate, defensible space serves as a barrier, slowing or stopping the spread of a fire that would otherwise devour your property. It also contributes to the safety of firefighters who are defending your home. The first line of defense for your home from wildfire is defensible space.

Within a 100-foot radius of your property, the degree of wildfire fuel management varies, with more intense fuel reduction occurring closer to your home. Begin with the house and work out to the nearest 100 feet or property line. Learn more about the Defensible Space Zones in the sections below.

### Defensible Space Zones

The first five feet from your home is the most important. Keeping the area closest to buildings, structures, and decks clear will prevent embers from igniting materials that can spread the fire to your home. (Defensible Space | CAL FIRE. <https://www.fire.ca.gov/dspace>)

**Why?** The majority of homes lost to wildfire are ignited by flying embers. Embers can travel miles ahead of the active front of wildfires. (Defensible Space | CAL FIRE. <https://www.fire.ca.gov/dspace>)

### How to Have a Defensible Space Zones:

1. Use hardscape materials such as gravel, pavers, or concrete. There will be no combustible bark or mulch.
2. Remove all dead and dying plants, weeds, and debris (leaves, needles, and so on) from your roof, gutter, deck, porch, stairways, and any other parts of your home.
3. Remove branches within ten feet of a chimney or stovepipe outlet. (Defensible Space | CAL FIRE. <https://www.fire.ca.gov/dspace>)
4. On top of decks, keep combustible materials (such as outdoor furniture and pots) to a minimum.
5. Transfer firewood and lumber to Zone 2.
6. We should use non-combustible options to replace combustible fencing, gates, and arbors attached to the house.
7. Consider moving garbage and recycling cans

### Facilitator's Note [10/12]

- The facilitator shall move the participants to a grassy and bushy area to facilitate this learning. Get work with the tools provided. Participants shall be informed beforehand about the nature of the task; thus, they must prepare a ready hydration container throughout the course to avoid dehydration.

outside of this zone.

8. Move Vehicles, Motorcycles, other farm machinery, and other combustible things outside of this zone.

## *Fighting Fires Involving Agricultural Chemicals [5/5]*

Firefighters responding to fires involving agricultural chemicals should follow these steps:

1. After receiving a call for a fire involving chemicals, notify physicians and hospitals to be prepared to receive possible poison victims. (Hospitals should have a card file on each storage facility listing the type of chemicals stored and the manufacturer of each.) (Fires in Agricultural Chemicals | MU Extension. <https://extension.missouri.edu/publications/g1908>)
2. Evacuate the downwind area and isolate the area. Patrol this area to keep spectators out.
3. Before attempting to fight the fire, use the correct personal protective equipment. It includes rubber gloves, boots, turn-outs, and helmets. If we cannot avoid contact, also wear a self-contained breathing apparatus.
4. Avoid working in areas on the downwind side of the fire. Attack the fire from a safe distance. Bottles, drums, metal, and aerosol cans are not vented and may explode.
5. Attempt to contain the fire and protect the surroundings. Prevent the spread of the fire by cooling nearby containers to prevent rupture. (Fires in Agricultural Chemicals | MU Extension. <https://extension.missouri.edu/publications/g1908>)
6. Avoid raising a flammable, explosive, or toxic dust.
  - Use soft water streams like fog to avoid tearing open paper containers or breaking jars.
  - Use foam when large volumes of flammable solvents are released from ruptured metal or glass containers.
  - Let drums cool, containing flammable solvents with water spray.
  - Keep a safe distance in case of explosion.
7. Keep toxic runoff to a minimum by avoiding large quantities of water. Construct dikes to prevent flow into lakes, streams, sewers, etc. (the cooling effect of water

retards high-temperature decomposition of chemicals to less toxic compounds). (Fires in Agricultural Chemicals | MU Extension. <https://extension.missouri.edu/publications/g1908>)

## *Recommendations*

### ***Fire Planning and Inspection for Local Fire Departments***

1. Annually visit each large chemical storage warehouse and take notes of the following:
  - General layout of the facility. (Fires in Agricultural Chemicals | MU Extension. <https://extension.missouri.edu/publications/g1908>)
  - The locations of hydrants, standard and alternate access roads, gates, and fences
  - Their surrounding building occupancies and land use.
  - Means of ventilation.
  - Means of controlling drainage at and adjacent to the facility
2. Prepare a list of day and night telephone numbers for:
  - Facility operators.
  - Physician (familiar with the products).
  - Poison Control Center.
  - Manufacturers of the products.
3. Establish a card file in each facility to inform the officers of the hazards they might face in fighting the fire.
4. Establish a reference manual of the systems of poisoning and what to do in case of contact with the chemicals stored in the facility.
5. Recommend chemical storage procedures to owners or managers. We should store chemicals away from other fire hazards. (Fires in Agricultural Chemicals | MU Extension. <https://extension.missouri.edu/publications/g1908>)

## *Post Fire Clean-Up –*

### ***Personal Precautions***

- Remove protective clothing upon leaving the site and impound with contaminated firefighting equipment.

- Upon your return to the station, shower and shampoo thoroughly with soap and water to remove traces of toxic chemicals from your body.
- Wash inner clothing with detergent and put on clean clothes.
- Watch for signs and symptoms of pesticide poisoning.
- Wash all personal clothing, protective clothing, and respirators in an isolated area. Put on coveralls and rubber gloves and use respiratory protection when cleaning clothing and equipment. (Fires in Agricultural Chemicals | MU Extension. <https://extension.missouri.edu/publications/g1908>)

### ***Far Site***

- Isolate and secure the scene to keep people away.
- Contact the public health department for disposal instructions and approval.
- Handle waste and runoff the same as for a product spill. Personal protective equipment is required.

## Lesson 4: The Community Bucket Brigade

### *Did you know that bucket brigade can be traced back to the early 1700s? [1/3]*

Bucket brigades were joint in early colonial times in the United States, a carryover from Britain, where they were in everyday use until the first-hand pumps came into wide usage around 1760.

Although many people will say, "That's ancient history!" When reading this question, remember that bucket brigades are still employed in some parts of the world to assist in putting out fires, and in some instances, buckets still turn up in unexpected places.

In the early colonial days of the Philippines, a distinctive feature of fire safety measures was the utilization of bucket brigades—a practice inherited from American influence. This method prevailed until approximately 1760, when the first-hand pumps were introduced as a more efficient means of combating fires. During this period, colonial villages and cities grappled with the imminent and potentially fatal threat of fires, prompting the enactment of laws mandating immediate response to fire alarms.

To mitigate the risk of widespread destruction, many towns and cities enforced regulations stipulating that all able-bodied males were obligated to report to any fire alarm promptly. This collective effort aimed to assemble a quick and effective response team capable of containing and extinguishing fires before they could wreak havoc on the community. The historical evolution of fire response mechanisms in the Philippines underscores the significance placed on communal participation and coordinated action in the face of a persistent and formidable threat.

### *Things to consider before extinguishing the fire using the Bucket Brigade Method [2/3]*

- If everyone has exited the building or is doing so;
- If the fire is contained and little;
- If You Have Received Fire Safety Training;
- If the surroundings are secure;
- Consider the wind direction; and

#### Facilitator's Note [11/12]

► The facilitator will engage the participants using the following prompt questions:

- When was the time you saw a massive fire in the community?
- What's the common thing people do during a fire nowadays?

- If a Direct Exit Is Available.

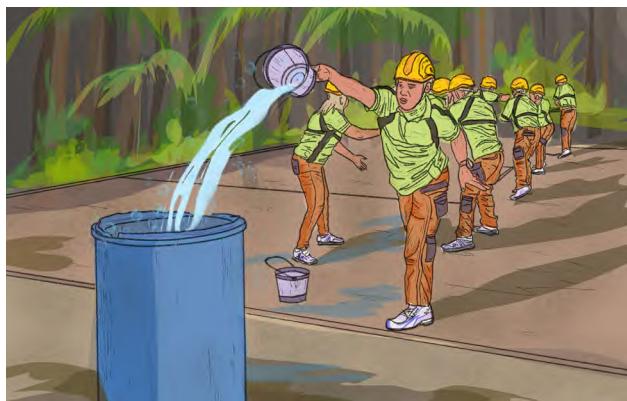
**Facilitator's Note [12/12]**

- As the lecture team draws near the conduct of the training, additional personnel shall be needed to augment the learning process.
- The facilitator may conduct this activity as a competition to test quickness in response but notwithstanding to jeopardize the efficiency of the drill. As a facilitator, hold on to promoting safety beyond speed and disorder.
- It will be a team competition. It shall determine the efficiency of the team based on performance.

## Simple Outdoor Demonstration Activity: The Bucket Relay [3/3]

### Guidelines:

1. In a group of ten, identify the fetcher, the relay line, the thrower, and the runner.
2. After establishing safety, the identified participants shall fall into their designated area/post.
3. When the whistle sounds, the team shall proceed with safety and swiftly fill the empty drum situated on the opposite side.
4. Time performance ends after 2 minutes from when the facilitator sounded the whistle. To determine the team's efficiency, the water inside the drum shall be measured using a meter stick (or any measuring tool).



It illustrates a bucket relay activity in progress.

## PowerPoint and Visual Aids

# Rural Fire Safety

1

## Lesson 1: Introduction to Rural Fire Safety

5



2

### *Rural Fire Safety and Its Importance*

Fire danger is more remarkable in rural locations. The distances between settlements and between residents inside those communities present problems with fire. Fire fatality rates are exceptionally high in rural areas. The local community is severely affected emotionally and financially by the loss of both property and livestock.

6

**Goal:** To build a rural community of empowered individuals, creating a fire-safe environment with proactive and preventive measures.

**Objectives:** At the end of the session, the participants will be able to:

1. Explain Rural Fire Safety and its importance;
2. Identify the common causes of fires in the rural areas;
3. Understand the importance of Household Basic electrical connections, design, and their applications in rural communities;

3

### *Rural Fire Safety and Its Importance*

*It can be challenging to put out a fire if it starts outside in a remote area. Rather than protecting homes and buildings, trained firefighters are to preserve natural resources.*



7

4. Understand the basic concepts of fire safety in a typical Filipino Dirty Kitchen (abuhan, lutuan, batalan);
5. Understand the importance of Fire Safety Education in using conventional coco driers;
6. Understand the basic concepts of agricultural fire safety; and
7. Apply the bucket brigade concept in real-life events and comprehend its significance in emergencies.

4

### *Rural Fire Safety and Its Importance*

*Fire stations are located distant from many homes. The result is longer emergency response times. In a couple of minutes, an entire property can be obliterated or destroyed by fire.*



8

### Rural Fire Safety and Its Importance

Fire suppression can be brutal in rural areas with little water resources. Homes may be in isolated areas and surrounded by tall foliage, flammable materials, and trees.

9

### Lesson 2: Household Basic Electrical Connections, Design and their Applications & Dirty Kitchen Fire Safety Tips

13

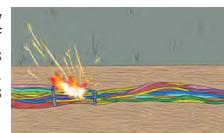
### Rural Fire Safety Tips

1. The wiring must be in good condition; if electrical wiring shows signs of aging and rot, then it needs servicing by a qualified electrician.
2. Extension cables must be temporary. Disconnect it from the convenience outlet after its use!
3. Protect receptacles from damage, moisture, and dust.
4. We must make repairs/replacements if there's damage with safety in mind.
5. The area around lights and electrical outlets was

10

### What is Electricity?

Electricity is a form of energy resulting from the existence of charged particles. Electricity is the flow of moving electrons. When the electrons flow, it is called an electrical current.



14

### Rural Fire Safety Tips

- cleansed of dust and cobwebs.
6. Oily materials are stored in a covered metal container to keep them cool.
  7. In mind the emergency numbers of the nearest fire stations and other Response Groups
  8. We must not patronize Flammable (bote bote) materials.
  9. Learn the basics of bucket relay and the use of fire lines
  10. Farm inputs like pesticides and fertilizers must be sealed and away from children's reach

11

### What makes an Electrical Fire?

Electricity is one of the most common causes of fires both in the home and in the workplace. Electric short-circuiting, arcing, sparks, overloading, use of defective or misused electrical equipment, a major causes of electrical fires

15

### Rural Fire Safety Tips

11. Farmers must engage in regular fire drills along with the community. Thus, they will trained in using fire extinguishers.
12. Burning around the place shall only be done by adults; adult supervision is encouraged if minors are on task.

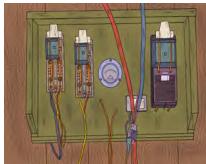
12

### Electrical Fire Hazards at Home and in the Community

An electrical hazard can be defined as - a dangerous condition where a family member could make electrical contact with energized equipment or a conductor and from which the person may sustain an injury from shock and - there is potential for the person to receive an arc flash burn, thermal burn, or blast injury.

16

### *Electrical Fire Hazards at Home and in the Community*



17

### *Dos and Don'ts While Using Electrical Equipment and Appliances*

- Family members should know the location of electrical circuit breaker panels that control the equipment and lighting in their respective areas. They must identify the Circuits and equipment disconnection.
- If any defects on the electrically powered equipment or tools. Only certified electricians are allowed to repair electric-driven apparatus or any electrical maintenance.

21

### *Common Causes of Electrical Fires*

- Contact with live conductors
- Short-circuiting
- Arcs and sparks
- Overloading/community routing
- Inadequate grounding
- Non-usage of standard replacement/Tampering/Jumper
- Wet environment

18

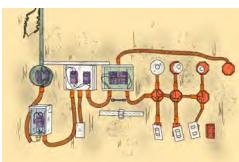
### *Dirty Kitchen*

A staple in most Filipino households, the "dirty kitchen" is an auxiliary cooking area that stands apart from the home's primary, or clean, kitchen. It is often located outside the home, serving as a functional hub for everyday culinary tasks and preparations.

22

### *Simple House Wiring Diagram*

Understanding basic electrical circuits and their components using the actual circuit board.



19

### *Typical Filipino Dirty Kitchen*



23

### *Dos and Don'ts While Using Electrical Equipment and Appliances*

- Unplug electrical equipment by grasping the plug and pulling. Do not pull or jerk the cord to unplug the equipment.
- Do not plug equipment into defective receptacles.
- Check for frayed, cracked, or exposed wiring on equipment cords.

20

### *Dirty Kitchen Fire Safety Plan*

1. Watch as you prepare.
2. Maintain a clean kitchen.
3. Put on short or fitted sleeves.
4. Avoid putting combustibles (above, side) close to the fire.
5. Keep kids and pets away.
6. We shall not hang potholders, towels, and table cloths.

24

## How Does Fire Spread?



25

## Common Causes of Conventional Coco Drier Fires

1. Unattended Burning
2. Stupidity
3. Fuel Overfeeding
4. In Haste for the Pair buying Price
5. In a Rush to Complete the Task

29

## Heat Transfer

**Conduction Fires:** Conduction fires spread through direct contact between materials. A conduction fire spreads when a fire heats a material that's a good heat conductor, like metal, which then comes into contact with a combustible material.

**Radiation Fires:** A fire can spread by radiation when the heat travels through electromagnetic waves in the air. When a fire breaks out, heat will travel in all directions until it reaches an object that absorbs it. When it gets a combustible material, it will smolder and eventually burn.

26

30

## Heat Transfer

**Convection Fires:** Convection is the most common cause of fire spreading in domestic and commercial buildings and is also the most dangerous. Heat always rises, but in the setting of an office, for example, the heat is trapped once it hits the ceiling. So, it then begins to travel horizontally, thus spreading the fire simultaneously.

27

## Proper Operation and Maintenance of Conventional Driers

6. Fireplace coals can remain hot enough to start a fire for up to three days (Fireplace Safety Tips. Pour water to soothe the remaining embers at once.
7. We must check copra beds must be checked before the start of the operation (low-cost copra beds made of bamboo sticks after two uses.
8. Never allow continuous operation; rest, let it cool, and ventilate the Copra drier.

31

## Lesson 3: Fire Safety on Farmer's Conventional Copra Drier and Agricultural Fire Safety

28

## Example of Unsafe Conventional Coco Drier



32

### Tunnel Type Suggested Coco Drier Structure



33

### Fires in Agricultural Chemicals

**Phosphate Fertilizer Materials:** commonly used and stored in blending plants (triple super phosphate, diammonium phosphate) will not support combustion and have a melting point over 1500 degrees Celsius. Both of these are rated as slightly dangerous in toxicity.



37

### Fires in Agricultural Chemicals

**Ammonium Nitrate:** Like other inorganic nitrates, ammonium nitrate is an oxidizing agent and will increase fire intensity. All grades of ammonium nitrate can be detonated if they are in the proper crystalline form, if the initiating source is sufficiently large, or if they are heated under sufficient confinement.



34

### Fires in Agricultural Chemicals

**Potash Fertilizer Materials:** Muriate of potash is the principal potassium-containing fertilizer used as a bulk blending ingredient. It is rated slightly dangerous as a fire and toxicity hazard.



38

### Fires in Agricultural Chemicals

**Anhydrous Ammonia:** Can cause severe burns upon contact. Contact with liquid ammonia can also cause loss of sight, severe injury of the respiratory membranes, and varying degrees of irritation of skin, eyes, and mucous membranes. For these reasons, use adequate body protection — a SCBA with full face shields and protective clothing.



35

### Dealing with a Fireline

The buffer between your structure and the surrounding region is called defensible space.

Adequate, defensible space serves as a barrier, slowing or stopping the spread of a fire that would otherwise devour your property. It also contributes to the safety of firefighters who are defending your home. The first line of defense for your home from wildfire is defensible space.

39

### Fires in Agricultural Chemicals

**Urea:** Classified as a non-flammable material by the Interstate Commerce Commission. Urea will not support combustion by itself but melts at 534.2 degrees Fahrenheit. At temperatures higher than 534.2 degrees Fahrenheit, it decomposes, giving off mildly toxic fumes. For this reason, the toxicity hazard of urea is given as slightly dangerous



36

### Defensible Space Zone

The first five feet from your home is the most important. Keeping the area closest to buildings, structures, and decks clear will prevent embers from igniting materials that can spread the fire to your home.

40

### *How to Create a Defensible Space Zone*

1. Use hardscape materials such as gravel, pavers, or concrete. There will be no combustible bark or mulch.
2. Remove all dead and dying plants, weeds, and debris (leaves, needles, etc.) from your roof, gutter, deck, porch, stairways, and any other parts of your home.
3. Remove branches within ten feet of a chimney or stovepipe outlet.

41

### *Fighting Fires Involving Agricultural Chemicals*

- Use foam when large volumes of flammable solvents are released from ruptured metal or glass containers.
- Let drums cool, containing flammable solvents with water spray.
- Keep a safe distance in case of explosion.
7. Keep toxic runoff to a minimum by avoiding large quantities of water. Construct dikes to prevent flow into lakes, streams, sewers, etc.

45

### *How to Create a Defensible Space Zone*

4. On top of decks, keep combustible materials (such as outdoor furniture and pots) to a minimum.
5. Transfer firewood and lumber to Zone 2.
6. We should use non-combustible options to replace combustible fencing, gates, and arbors attached to the house.
7. Consider moving garbage and recycling cans outside of this zone.
8. Move Vehicles, Motorcycles, other farm machinery, and other combustible things outside of this zone.

42

### *Fire Planning and Inspection for Local Fire Departments*

1. Annually visit each large chemical storage warehouse and take notes of the following:
  - General layout of the facility.
  - The locations of hydrants, standard and alternate access roads, gates, and fences
  - Their surrounding building occupancies and land use.
  - Means of ventilation.

46

### *Fighting Fires Involving Agricultural Chemicals*

1. After receiving a call for a fire involving chemicals, notify physicians and hospitals to be prepared to receive possible poison victims.
2. Evacuate the downwind area and isolate the area. Patrol this area to keep spectators out.
3. Before attempting to fight the fire, use the correct personal protective equipment. If we cannot avoid contact, also wear a self-contained breathing apparatus.

43

### *Fire Planning and Inspection for Local Fire Departments*

- Means of controlling drainage at and adjacent to the facility
2. Prepare a list of day and night telephone numbers for:
  - Facility operators.
  - Physician (familiar with the products).
  - Poison Control Center.
  - Manufacturers of the products.

47

### *Fighting Fires Involving Agricultural Chemicals*

4. Avoid working in areas on the downwind side of the fire. Attack the fire from a safe distance.
5. Attempt to contain the fire and protect the surroundings. Prevent the spread of the fire by cooling nearby containers to prevent rupture.
6. Avoid raising a flammable, explosive, or toxic dust.
  - Use soft water streams like fog to avoid tearing open paper containers or breaking jars.

44

### *Fire Planning and Inspection for Local Fire Departments*

3. Establish a card file in each facility to inform the officers of the hazards they might face in fighting the fire.
4. Establish a reference manual of the systems of poisoning and what to do in case of contact with the chemicals stored in the facility.

48

## *Fire Planning and Inspection for Local Fire Departments*

5. Recommend chemical storage procedures to owners or managers. We should store chemicals away from other fire hazards.

49

## **Lesson 4: Community Bucket Brigade**

53

### *Post Fire Clean-Up*

#### Personal Precautions

- Remove protective clothing upon leaving the site and impound with contaminated firefighting equipment.
- Upon your return to the station, shower and shampoo thoroughly with soap and water to remove traces of toxic chemicals from your body.
- Wash inner clothing with detergent and put on clean clothes.

50

***Do you know that bucket brigade can be traced back to the early 1700s?***

*Bucket brigades were joint in early colonial times in the United States, a carryover from Britain, where they were in everyday use until the first-hand pumps came into wide usage around 1760.*

54

### *Post Fire Clean-Up*

- Watch for signs and symptoms of pesticide poisoning.
- Wash all personal clothing, protective clothing, and respirators in an isolated area. Put on coveralls and rubber gloves and use respiratory protection when cleaning clothing and equipment.

51

### *Things To Consider Before Extinguishing the Fire Using the Bucket Brigade Method*

- If everyone has exited the building or is doing so;
- If the fire is contained and little;
- If You Have Received Fire Safety Training;
- If the surroundings are secure;
- Consider the wind direction; and
- If a Direct Exit Is Available.

55

### *Post Fire Clean-Up*

#### Far Site

- Isolate and secure the scene to keep people away.
- Contact the public health department for disposal instructions and approval.
- Handle waste and runoff the same as for a product spill. Personal protective equipment is required.

52

### *The Bucket Relay Demo Activity*



56

*Guidelines:*

1. In a group of ten, identify the fetcher, the relay line, the thrower, and the runner.
2. After establishing safety, the identified participants shall fall into their designated area/post.
3. When the whistle sounds, the team shall proceed with safety and swiftly fill the empty drum situated on the opposite side.
4. Time performance ends after 2 minutes from when the facilitator sounded the whistle. To determine the team's efficiency, the water inside the drum shall be measured using a meter stick (or any measuring tool).

57

# Thank You!

-End-

61

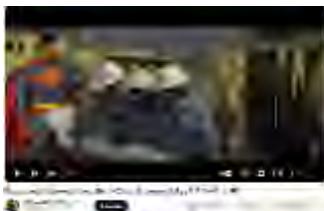
- What is rural fire safety, and how essential is it for the general public to know?
- What are the possible common causes of rural fires?
- What is the importance of Household Basic electrical connections, design, and their applications?
- What are the essential fire safety concepts in a typical Filipino Dirty Kitchen?

58

- What is the importance of Fire Safety Education in using conventional coco driers?
- What is agricultural fire safety?
- How to perform bucket brigade? What is its significance in emergencies?

59

## Bomberos Are Not Superheroes!



60

## **Module 6**

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Fire Safety Lectures and Seminars for General Public

# **Annexes & References**

## MODULE 6: *References*

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## MODULE 6: Annex

# *One-Year Calendar for Fire Safety Preparedness During Holiday Seasons in the Philippines*

According to Diversify Newsletter, approximately 86% of the Philippine population are either Roman Catholic or belonging to another Christian group. It is one of the two countries in Asia that is predominantly Catholic. The history of the Philippines is also deeply rooted in Spanish-Christian culture and traditions. These influences often range from the food to lively festivals. Below is the one-year calendar with the holidays celebrated each month and including fire safety tips:

As a new year opens, Filipinos prepare themselves for another 365 days of opportunities, festivals, town or barangay fiestas, colorful trade fairs, competitions in all categories and full range of other fun events that everyone looks forward to celebrate. The Filipino has a naturally festive spirit and this shines through from the first until the last day of the year.

This is a month of grand festivals in the Philippines. At the center of most festivities is the Sto. Nino, the image of the Child Jesus which is venerated by majority of Filipino Catholics.

Of course, this is not an exclusively Filipino event but there is a distinct character to the Filipino New Year celebration. Aside from the usual fireworks, countdowns and feasts, there are traditions and superstitions that take celebrating the coming of a fresh year to a new level. (<https://www.lumina.com.ph/news-and-blogs/blogs/10-best-places-to-watch-fireworks-display-in-philippines/> & <https://www.philippinetraveler.com/january-in-the-philippines/>)

### Facilitator's Note [7.a/21]

- This One-Year Calendar for Fire Safety Preparedness is a planning tool that marks and help promote fire safety preparedness throughout the year. It will help an individual or group to assess whether the season needs maximum attention, which depends on what activity to celebrate. The facilitator may also collect information to the participants, not included in the Annex. Remember, participants may come from different families, culture and places. This idea will grasp their attention to share what they celebrate during each month.



### FIRE SAFETY TIPS!

- Always use fireworks outside and have a bucket of water/hose nearby in case of accidents.
- Never allow young children to play with or ignite fireworks. Instead, consider safe alternatives, such as glow sticks, silly string, popping streamers and confetti cannons.
- Before leaving the house or going to bed, turn off the lights. If lights and other electrical decorations get too hot, unplug them immediately. Keep hot appliances from the Christmas tree and use non-flammable decorations

February is loving month. Families, couples and friends are looking forward to have celebrations during this month. Whether you've been together for three months or several decades, Valentine's Day is the perfect opportunity to spoil the one you love. You can observe streets full of vendors selling flowers and chocolates. (<https://www.wentzvillefire.org/post/fire-safety-tips-for-celebrating-valentine-s-day-at-home>)



### FIRE SAFETY TIPS!

- Don't leave a burning candle unattended.
- Stay in the kitchen while frying, boiling, grilling, or broiling food. If you leave the kitchen quickly, turn off the stove.
- If mylar balloons will be part of your Valentine's Day decor: keep balloons indoors, tie weights to the balloons to keep them from floating away and deflate metallic balloons before putting them in the trash.

The month of March in the Philippines is the start of our so-called summer season. Though the correct term for this is 'Dry Season'. Setting aside the terminology issue, the dry season (March to May) according to PAGASA, it also records the highest fire incidents. This is why the month of March was set as Fire Prevention Month. Also, this month highlights the Lent or kwaresma in Filipino is the season wherein Filipino people recall Christ's passion, his suffering, death and resurrection. Philippines is known to be the only primarily

Christian country in the whole of Asia and its population is made up of a big number of devout Catholics, which is the reason why Lent Season or Holy Week traditions are commonly practiced in a very unique way such as building a small nipa and do some decorations as part of their worship area.

(<https://www.aethelmark.com/blog/e/e3/>)

### **FIRE SAFETY TIPS!**

- Before leaving the house, check the locks, check and unplug all the appliances or anything that might cause fire.
- Never use charcoal or gasoline-fueled devices indoors.
- Avoid overload electrical components.

The Philippines is a country renowned for its relatively high temperatures, high humidity levels, as well as heavy rains. In fact, in lower elevation regions across the archipelago, the temperature is starting to soar during the year's driest season. April is continuation of summer from the Month or March. People are busy in scheduling outings to have a visit at the nearest resorts, beaches and hotels and other vacation spots. And along with the excitement of spending the summer, the rising temperature also increases number of fire incidents throughout the country. ([https://www.embibe.com/questions/%0A%0A--Season%0A-The-months-they-occur-in%0A%0A%0A-Summer%0A-March%2C-April%2C-May-and-June%0A%0A%0A-Rainy%0A-July%2C-August%2C-September-and-October%0A%0A%0A-Winter%0A-November%2C-December%2C-January-and-February%0A%0A%0A%During-which-season-do-we-have-more-holidays%3F\\_\\_\\_\\_\\_%0A-%0A/EM8076152](https://www.embibe.com/questions/%0A%0A--Season%0A-The-months-they-occur-in%0A%0A%0A-Summer%0A-March%2C-April%2C-May-and-June%0A%0A%0A-Rainy%0A-July%2C-August%2C-September-and-October%0A%0A%0A-Winter%0A-November%2C-December%2C-January-and-February%0A%0A%0A%During-which-season-do-we-have-more-holidays%3F_____%0A-%0A/EM8076152))

### **FIRE SAFETY TIPS!**

- Always have a fire extinguisher ready. Have it inspect by the BFP assigned in the city/municipality.
- Check for faulty connections and use appliances safely.
- Soak cigarette butts and ashes in water before throwing them away. If not, a single butt can cause grass fire or residential fire.





There could be a touch of summer with this month but the highlight can be Flores de Mayo, which is a festival held in the Philippines during this month. It is festival season and whether you are attending or organizing, it is vital to be aware of fire safety. A festival is a potentially very dangerous place to have a fire as you have a large crowd of people that could panic. Therefore, it is vital to know how to ensure that you and other people stay fire safe. This gathering can be alarming if people were not cautious and prepared. (<https://sulatkamay.com/flores-de-mayo/>)

### **FIRE SAFETY TIPS!**

- *Assess risk of fire at festivals.*
- *Provide the right festival fire safety equipment.*
- *Remember that most of the decorations and props used during this kind of festivals are all made up of light material, which means they can catch fire easily.*



June is the start of the rainy season in the Philippines, which runs until October. The rains begin in the north and sweep through the country, although some places remain quite sheltered and relatively dry. There are a lot of reasons to love the rainy season—the most important one being that it indicates the end of scorching summer heat and provides some much-needed relief from the sweltering sun. However, from road accidents to power breakdowns, this wet weather can also cause quite a lot of trouble in you while staying at home during class and work suspensions, especially if you are not prepared in advance. (<https://www.zameen.com/blog/safety-tips-rainy-season.html>)

### **FIRE SAFETY TIPS!**

- *Stay away from electric wires—especially the ones that have either fallen from heavy rain or are dangling precariously from the pole, about to fall off.*

- *It is recommended to switch off and unplug all such devices before the water enters your house.*
- *Have a professional electrical to check all your electricals before and after this season.*

There are celebrations in the Philippines that use boat as part of their celebrations and include some “pailaw” or lights to cover the night. From Luzon to Mindanao, there are islands which celebrate feast using boats. Some were paddled by men and some used oils for engines. This month highlights the Pagoda Festival of Bocaue to honor the Holy Cross of Wawa discovered to be a miraculous scripture on the Bocaue river two centuries ago. (<https://firesystems.net/2019/09/08/fire-safety-tips-to-prevent-boat-fires/>)

### **FIRE SAFETY TIPS!**

- *Get to know the entrances and exits in the festival area.*
- *There should be clear exits and signposted escape routes dotted throughout the grounds so people can easily make their way to safety should a fire break out.*
- *Lights such as candle and a electrical-operated ones can cause fire in boats. Inspection from BFP and LGU is advised for recommendations and to ensure safety during the sail.*

August is now considered as back-to-school-month in the Philippines. The recent so-called pandemic shifts the June to August opening of classes in public. Teachers and students are excited to meet each one, and the excited should never overwhelmed them without enough preparation when it comes to fire safety preparedness of the students and the whole stakeholders. (<https://summitfire.com/blog/fire-safety-tips-school/>)

### **FIRE SAFETY TIPS!**

- *Schedule your inspections and maintenance to be conducted by the BFP and LGU.*



- *Review fire drills and emergency protocols.*
- *Stay organized and minimize fire hazards.*



Although there are other significant occasions before we celebrate Christmas, Filipinos believe that the holiday season begins as soon as the “ber” months signal the cold season. It begins in September, some even as early as August and concludes in January. The putting up of decorations such as shining and shimmering lights and playing of carols will start hitting on this particular month. (<https://ichoose.ph/blogs/fire-safety-tips-christmas/>)

### **FIRE SAFETY TIPS!**

- *Avoid buying low-quality Christmas lights.*
- *Never overload a circuit.*
- *Do not forget to turn off lights and decorations.*

Halloween is celebrated each year on October 31. People are now planning what to wear and prepare during this time. We know everyone likes to celebrate this spooky holiday differently. No matter how exciting everyone wants to celebrate it, it's just a reminder to be always safe on fire. Decorations are now all over every establishment and home. According to NFPA, as more people plan to celebrate the holiday this year, they want everyone to know where potential fire risks exist so they can take the steps needed to minimize them.



### **FIRE SAFETY TIPS!**

- *Keep similar decorations far away from any open flames or heat sources, like candles, heaters, and light bulbs.*
- *Using candles as decoration can be risky if not done correctly. Keep them in a well-attended area out of the path of potential trick-or-treaters.*
- *Avoid fabric that billows or trails behind you, as these can easily ignite.*

For a glimpse into the Philippines' rich cultural heritage, do not miss the opportunity to take part in one of the colorful events organized during November, such as the Pintaflores Festival, the Kalag-Kalag Festival, and the Todos los Santos (All Saints) Day, celebrated throughout the country. With those highlighted the Undas (All Saints' Day). People clean and repaint the graves of their departed loved ones during this season. Because of the celebratory nature of "Undas" this month, the occasion becomes a time for reunions among families, as well as feasting and merriment while taking time to remember their relatives as they still lived and doing life better. (<https://www.sunstar.com.ph/davao/citys-fire-district-issues-safety-tips-for-undas-2023>)



### **FIRE SAFETY TIPS!**

- Turn off and unplug appliances before leaving the house for vacation or visiting the cemetery.
- Check LPG tanks for possible leaks.
- Do leave lit candles unattended

The most awaited celebration is Christmas which falls in December. Filipinos yearly look forward to celebrate it with their families. Parades and exhibitions are done in this season. And Christmas in the Philippines is a big deal. Unlike in most other parts of the world, Filipinos begin celebrating Christmas in September.

### **FIRE SAFETY TIPS!**

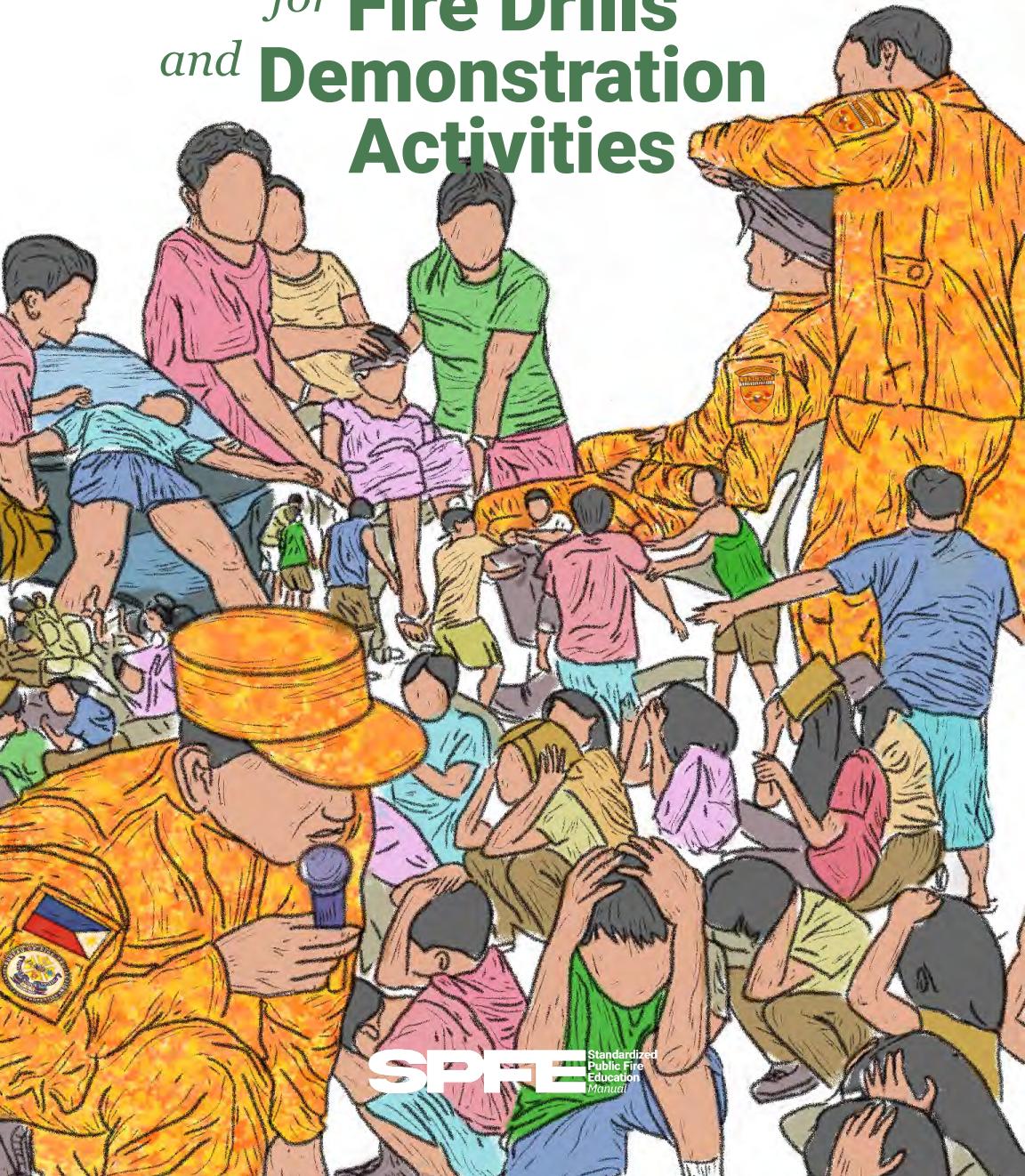
- Before choosing a Christmas light decoration, it is essential to check and test them.
- Before plugging Christmas lights or any electrical decorations, ensure that they are not frayed, kinked, or have worn strands. If you see any, throw them immediately.
- Make sure to never leave the kitchen while food is cooking. If you do need to leave the kitchen, don't hesitate to ask a guest to keep an eye on the food for you.





## **MODULE 7**

# **Standardized Procedures for Fire Drills *and* Demonstration Activities**



**SPFE** Standardized  
Public Fire  
Education  
Manual

## MODULE 7 OUTLINE

# Standardized Procedures For Fire Drills And Demonstration Activities

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## Scope/ Overview

Fire drills and demonstration activities are vital components of fire safety education, ensuring individuals and communities are well-prepared to respond effectively to fire emergencies. This module, "Standardized Procedures for Fire Drills and Demonstration Activities" offers comprehensive guidance and practical skills to foster a culture of safety and readiness in the face of fire incidents.

This module aims to equip participants with practical skills and knowledge in fire drill procedures, enabling them to respond confidently and efficiently to fire emergencies. The standardized procedures outlined herein serve as the cornerstone for building resilient and fire-safe communities. Through hands-on training and scenario-based exercises, participants become valuable assets in ensuring the safety and well-being of themselves and their communities in the event of fire incidents.

## Module Objectives

1. To develop clear and standardized procedures for conducting fire drills that ensure the safety and preparedness of all participants, including staff, students, or employees.
2. To establish consistent guidelines for realistic fire demonstrations, ensuring they are conducted safely, efficiently, and in compliance with safety regulations.
3. To enhance the effectiveness of fire drills and demonstrations by standardizing communication, response protocols, and evaluation methods, leading to improved emergency readiness and understanding among participants.
4. To minimize the risk of confusion and errors during fire drills and demonstrations through the implementation of standardized procedures, ultimately contributing to a safer environment and a better understanding of fire safety practices.
5. To provide a structured framework for fire drill and demonstration activities, fostering a culture of safety, preparedness, and adherence to best practices in fire safety education.

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## Delivery Methodology

Controlled Simulation and Demonstration

## Module Objectives

At the end of the session, the participants will be able to:

1. Be better prepared in reacting to fire incidents in the communities and schools;
2. Alleviate the fears in handling incipient fires related to electrical and kitchen activities;
3. Adapt a culture of shared responsibility in preventing and reacting to fire incidents in the communities; and
4. Develop that shared commitment to actively participate in ensuring a fire safe community.

## Learning Materials Needed

- ✓ See individual SIMEX and Demonstration Procedures

**200 MODULE 6 Fire Safety Lectures and Seminars for the General Public**

# Simex 1

Standardized Procedures for Simulations, Drills and Demonstrations

# Community Fire Incident Simulation (CFIS)



ILLUSTRATION BY: FO1 Ken Dominic M Mordeno

# In this Simex 1...

## Goal

To educate the residents of various communities on the risks and hazards brought by fire and allow them to appropriately react through incident simulation.

## Objectives

At the end of the demonstration, the participants would be able to:

1. Know how to react to fire incidents in their communities in an orderly and safe manner reducing panic and allowing responders to effectively perform their duties; and
2. Understand the rigors of a fire incident and the need for cooperation between the residents, the CFAG and the BFP Responders.

### Total Time of Delivery:

#### Coordination Activity:

2 to 3 Hours Scheduled on a Separate Date Prior to the Simulation

#### Actual Simulation Activity:

Maximum of Three (3) Hours to include Simulation Proper and the Gaps Analysis

### Material Requirement:

#### A. For the Scenario Planning

1. CFPP Form 3: Scenario Visualization Form
2. Sitio/Purok Location or Vicinity Map

#### B. For the Simulation

1. Megaphone or wireless microphone
2. Fire Pit Kit or
3. Bon Fire (Depending on the drawn-out scenario)
4. Firefighting Assets

## Subject Overview

**Purpose:** To prepare the communities on how to efficiently react in case of fire incidents within their sitio/purok or immediate vicinity mitigating risks and panic.

**General Guidance:** More than being a component activity under the OLP, Fire Incident Simulation shall be a regular and mandatory activity for all fire stations nationwide to be conducted to identified high risk sitio/purok in a barangay every

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third quarter of every year. The simulations should be scenario-based guided by the Community Fire Protection Plan (CFPP) Form 3 or the Scenario Visualization Form (see Annex A). In the event that the barangay has yet to be targeted under OLP, the station should first facilitate the formulation of the CFPP because, incident simulation is an integral component of the plan. The simulation should involve the residents within the immediate vicinity of the targeted location and the Community Fire Auxiliary Group (CFAG) as first responders.

More than the community, the BFP's capability will also be tested in the incident simulation; hence, the use of the CFPP Form 5 is also mandated. The CFPP Form 5 or the Fire Response Data (see Annex B) will serve as the fire stations' initial contingency plan in responding to the sitio/purok, after the simulation it has to be updated in the gaps analysis.

**Things to Consider:** The incident simulation activity is conducted as a component activity to the Community Fire Protection Plan or the CFPP, therefore, the station must endeavor to formulate first the CFPP in the barangay that has not been targeted by OPLAN LIGTAS NA PAMAYANAN (OLP). As indicated in Volume 0 of this SPFE Manuals, the CFPP is the primary carrier of the BFP's Community Relations Agenda and thus requires precedence to conducting any incident simulation activity.

A fire incident simulation requires great attention to detail on the part of the facilitators and must ensure proper coordination with local officials and the residents in the area of simulation. Safety for all participants has to be secured and all contingencies has to be prepared prior to any simulation.

**204 MODULE 7 Fire Safety Lectures and Seminars for the General Public**

# Simulation Exercise Procedure:



## BEFORE SIMULATION

### A. Coordination Activities

Prior to an incident simulation activity, the facilitators must perform two mandatory activities which are 1) Coordination and Table Top Planning; and 2) Ground Survey of the vicinity of the simulation.

#### 1. Coordination and Table Top Planning



Conducted at least one day before the simulation, the purpose of this activity is to discuss with involved barangay officials, CFAG members and purok leaders the simulation that will be executed. The Facilitator must discuss in detail the identified scenario, the roles and responsibilities of the CFAG and Purok

Leaders and other important matters. The goal is to make known to every actor in the simulation what is going to happen in order to mitigate possible risks and eliminate any untoward incident.

The participation of the fire engine responding either from the station or from a closer pre-designated location will also be tested in the simulation. However, it should also be stressed out that the simulation is intended to test the capability of the residents and the CFAG, the role of the BFP is but an observer and as immediate support in case of any untoward incident.

#### 2. Ground Survey

After the table top planning, the facilitators along with the individuals involved in the planning should conduct a ground survey of the location and perform the following.

1. Map-out the location of the controlled/ mock-up fire;
2. Identify location for emergency triage (to include the command post) and evacuation area;

#### Facilitator's Note: [1/6]

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.



3. Mark (if possible paint the road or street) locations for the evacuation, approach and staging location of responding fire trucks and other rescue vehicles; and
4. Brief the residents within the immediate vicinity of the simulation area. This briefing however should fall on the responsibility of the barangay officials specially the purok leaders.

Prior to the incident simulation, other coordination activity that the facilitators must perform includes the following:

#### **Facilitator's Note:[2/6]**

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

1. Activate other BFP units such as EMS and SRF if the scenario calls for their participation;
2. Coordinate with other law enforcers such as the PNP and or the LGU Traffic Management Office if the scenario calls for their assistance;
3. Notify other fire station to be on standby in case of any untoward incident that might require their immediate assistance; and
4. Other activities the station may find necessary to prepare.

## **B. Logistical Requirements Preparation**

In addition to all the coordination activity, the following logistical requirements should also be prepared either by the fire station or in partnership with the barangay.

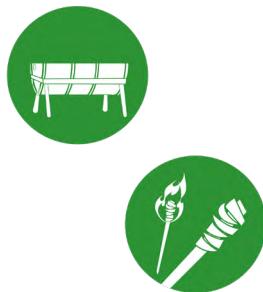
### **1. Mock-up Fire Scene**



Mock-up fires are the most ideal scenario for a fire incident simulation. A make-shift house not bigger than a shed (kubo) (approximately 1.5 by 1.5 meters only) made out of lightweight easy to burn materials such as wood, indigenous roofing materials (Nipa or Anahaw) and loaded with easy to burn materials. Such as wood, indigenous roofing materials (Nipa or Anahaw) and loaded with easy to burn contents such as cardboard boxes mimicking furniture and appliances, curtains and other materials. This should be located in an open space within the targeted vicinity. NOTE: Prior to igniting the make-shift house, the stations should wet (cover exposure) the walls of the houses that are facing the mock-up fire scene to avoid any incident of heat transfer. NOTE Further: Burning of old car tires, plastic, foam and or used clothing is strictly PROHIBITED.

## 2. Fire Pit Kit

An alternative to the make-shift house, the facilitators may opt to using a Fire Pit instead. The fire pit shall have four stable stands to prevent unnecessary spills of its contents into the ground, and it shall not have any leaks in every part of the fire pit. The materials used shall be fire-resistant and cannot be melted easily. The fire pit shall be half-cut from the 45–55-gallon size of the metal drum; the fire pit stand must be two feet (2 feet) in height, with a handle on both ends of the drum to be utilized for water spills; the mixture of gasoline and diesel must be 1:1 in ratio, amounting to at least 200 ml, or 1 glass which is mixed from the half-full water of the fire pit. Part of the fire pit kit is the Fire Torch, made of wood and can be wrapped by cloth on its tip; and must not be less than 1 meter in length and not too long to compromise the igniting of fire pit.



## 3. Extinguishing Agents or Equipment

Depending on the scenario, extinguishing agents that can be used during the incident simulation may be a fire extinguisher or the fire engine. It should be stressed during the coordination and table top planning that fire extinguishers can only be used if the scenario depicts the inception of the fire, but for fully developed fires, normal firefighting equipment should be used.



## 4. Documentation

Documentation is integral to incident simulation activities because it captures important details in the activity that would later be used in the gaps analysis. A documentation personnel should be designated recording the activity either through video or photos.





## DURING SIMULATION

### Facilitator's Note:[3/6]

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

### Standardized Community Fire Incident Simulation Procedures

Community fire incident simulations are exercises created to replicate and simulate emergencies related to fires, in a community or urban setting. The objective of these simulations is to establish a controlled environment where different parties, such, as emergency responders, community leaders, and residents can practice and evaluate their preparedness, response, and collaboration in the event of a fire incident. Therefore, standardizing the procedures of this activity is hereby set.



#### Stage 1: Countdown

A countdown period of at least one hour prior to the start of the simulation should be set, this is to make sure that all contingencies are in place and all actors to the drill are accounted for and are in position. The simulation will start with the GO Signal from the Fire Marshal or Lead Facilitator.

#### Stage 2: Simulation Proper

The simulation proper should run guided by four steps or stages with the acronym R.A.C.E. or Rescue, Activate, Confine and Extinguish.



**1. Rescue** - Fifteen Minutes before the set start of the simulation, the facilitator will designate any random individual within the identified actors (not identified during the table top planning) to be Fire Informant or someone who was able to notice the fire. The fire informant's job is to alert everyone within the immediate vicinity that there is a fire through shouting or knocking on doors.



**2. Activate** - Once the alarm is raised by the fire informant, he will then alert the Purok Leader and the CFAG of the fire. This will also include calling the nearest fire station. Note: The reason for selecting a random individual as fire informant is to test their readiness to include whether or not the individual have on his cellphone, the contact number of the nearest fire station at the very least.

3. **Confine** - Once notified, the Purok Leader and the CFAG will spring into action and perform their designated functions such as evacuation, first aide, rescue, traffic control and immediate firefighting ensuring that the fire does not spread.



4. **Extinguish** - Depending on the scenario, proceeding to extinguishment will either involve only the CFAG using their own firefighting capability or with the assistance of the Fire Station performing the final fire suppression. The simulation will end once the acting or designated fire ground commander (either from BFP or CFAG) declares FIRE OUT.



### **Stage 3: Simultaneous Evaluation**

Simultaneous to Stage 2, Simulation Proper, designated BFP Personnel are to act as evaluators using the Fire Drill Evaluation Checklist (see Annex C). Along with taking pictures or videos, the purpose of the simultaneous evaluation is to properly document the simulation and assess the performance of the actors involved.



## **AFTER SIMULATION**

### **Post Simulation Briefing, Gaps and Adjustments**

Right after the incident simulation, a Post Simulation Briefing should be conducted along with all the actors involved. This is in order to further assess the simulation and perform the Gaps Analysis as guided by CFPP Form 6: Preparedness Gaps and Adjustment Assessment Form.

The gaps analysis will serve as the concluding activity to the fire incident simulation.

### **Facilitator's Note:[4/6]**

The common sources of heat will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

## The Unique Case for Multi-Storey Residential Communities



Multi-storey residential buildings that are not for rent such as tenements and mid-rise condominiums are to be treated as a small community unto themselves. Meaning, in terms of fire incident simulation activities they should be treated as a separate sitio/purok. Given this fact, the need to prepare these type of communities should not be neglected and must still be subjected to simulation activities. The standard processes and procedure identified in the conduct of incident simulation activity for ordinary communities will apply to them albeit with the following adjustments or considerations.

### **1. Scenario on Applicability Basis**

Doing a scenario-based simulation for multi-storey residential buildings can be challenging and even outright dangerous simply because of its height. It is therefore advised that a scenario-based simulation be only conducted if the conditions would allow such kind of activity. Mock-up fire scenes inside the residences should be limited to being held only to the second floor and not any higher. Open fires or even warm smoke are also prohibited, instead, cold smoke generated from fog machine is recommended.

#### **Facilitator's Note:[5/6]**

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

### **2. Additional Coordination with the Home-Owners Association**

Multi-storey residential communities may come in two types, privately owned development or publicly funded or government built tenement or socialized housing. Regardless, in addition to coordination with the Barangay officials, it is also important to thoroughly coordinate with the Home Owners Association (HOA) officials in scheduling incident simulations. In the absence of a HOA, the fire station along with the barangay officials may designate a Purok Leader per building to perform the same function identified in the CFAG structure. During the simulation, it will still be the CFAG of the barangay who are to perform along with the residents of the building.

#### **Facilitator's Note:[6/6]**

The lecturer may ask the participants to give examples. Let the audience engaged in giving examples.

### **3. Use of Existing Emergency Evacuation Plan (EEP)**

In the challenges that a scenario-based simulation may present, the simulation may focus on the use of the Emergency Evacuation Plan of the building provided that it has one. If the building does not have any EEP prior to occupancy, the fire station should assist the residents and the designated purok leader for the building in the development of an EEP in accordance with the parameters set forth by the Fire Code for EEP.

#### **4. Focus on Evacuation Drill**

In the event that conducting a fire incident simulation cannot be performed for valid reasons, the facilitators can focus instead on conducting an Emergency Evacuation Drill with a fire extinguisher drill at the end of the activity. Procedures and evaluation checklist for this situation can be referred to the Exercise Guide under Module 8 of Volume 5 of the SPFE Manuals.

**NOTES:** \_\_\_\_\_

*NOTES:* \_\_\_\_\_

# **Simex 2**

Standardized Procedures for Simulations, Drills and Demonstrations

# **Safe School Initiative: Emergency Drill and Fire Incident Simulation in Schools**



ILLUSTRATION BY: FO1 Ken Dominic M Mordeno

# In this Simex 2...

## Goal

To establish a safe school environment through regular emergency evacuation drills and fire incident simulation in schools both primary and secondary.

## Objectives

At the end of the demonstration, the participants would be able to:

1. Know how to react to fire and other emergencies in schools in an orderly and safe manner reducing panic and allowing responders to effectively perform their duties; and
2. Sufficiently acquaint the school administrators and officials on emergency preparedness and response procedures to ensure safety of the students incase of emergency.

### Total Time of Delivery:

#### Coordination Activity:

2 to 3 Hours Scheduled on a Separate Date Prior to the Simulation

#### Actual Simulation Activity:

Maximum of Three (3) Hours to include Simulation Proper and the Gaps Analysis

### Material Requirement:

#### A. For the Scenario Planning

1. Fire and Emergency Response Plan (FERP)
2. School Vicinity Map

#### B. For the Simulation

1. Megaphone or wireless microphone
2. Smoke / Fog Machine
3. Fire Pit Kit or
4. Bon Fire (Depending on the drawn-out scenario)
5. Firefighting Assets

## Subject Overview

**Purpose:** To prepare school communities on how to efficiently react in case of fire incidents and other emergencies within their compound / vicinity mitigating risks and panic and ensuring the safety of the students.

**General Guidance:** The SAFE SCHOOL INITIATIVE addresses fire safety in schools in two fronts, 1) Collective Responsibility between the school and the community; and 2) BFP initiated campaigns. The primary reason is that, in tackling a holistic fire safety coverage for schools the relationship between the

# Cheat Sheet

school and the barangay local governments has to be strengthened with the BFP serving as the bridge between the two providing additional support.

As a guiding principle, “the schools are a community on their own, but are still part of the community they belong”. Through this principle, the conduct of emergency evacuation drills and fire incident simulations in schools is to be treated the same way that the BFP handles the communities and that is through a preparation of a preparedness plan; formulation of a scenario; and with active involvement of the Community Fire Auxiliary Groups (CFAG).

Under this demonstration guideline, the concept of the Fire and Emergency Response Plan for Schools (FERPS) and the School Emergency Response Team (SERT) will be mandated. This is simply because, this two are the foundation for ensuring a fire safe environment in school communities.

**Things to Consider:** Emergency evacuation and fire incident simulations. Emergency evacuation and fire incident simulations in school communities should be organized in close coordination with the school administration. Mutual understanding between the Fire Marshal and the School Head should be established in terms of scheduling of these activities. No emergency drill or simulation activity should be conducted in schools without the presence and or supervision of the local fire station.

A fire incident simulation requires great attention to detail on the part of the facilitators and must ensure proper coordination with local officials and the residents in the area of simulation. Safety for all participants has to be secured and all contingencies has to be prepared prior to any simulation.

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## Simulation Exercise Procedure:

Organizing of Emergency Evacuation Drills and Fire Incident Simulations should be done in a holistic manner and integral to this is the formulation of the Fire and Emergency Response Plan for Schools (FERPS) and the creation of the School Emergency Response Team (SERT).

### 1. ***Fire and Emergency Response Plan in Schools (FERPS)***

Unlike the Community Fire Protection Plan (CFPP) that establishes a comprehensive contingency plan for the whole community, the Fire and Emergency Response Plan in Schools (FERPS) is a pre-fire planning activity that only focuses on establishing the most basic disaster response plan for schools. This includes preparation for all forms of disruption to normal school operation such as fires, earthquakes and even incidents of violence. By preparing a response plan, school officials can react systematically and appropriately with the safety and welfare of the students as the top priority. The FERPS is a plan to be executed by the school officials in case of emergency; in no case shall students be involved in any form of reactionary activity related to the plan.

The FERPS is basically an emergency evacuation plan for schools with the following details clearly indicated.

- a. **Evacuation Map** per building indicating the primary and secondary exits, the location of fire hose cabinets, location of fire alarm, location of fire extinguishers and other vital information;
- b. **Vicinity Map** indicating the evacuation areas, triaging area, command post area, primary and secondary access for emergency vehicles such as fire trucks and ambulance; and
- c. **School Emergency Response Team (SERT)** Composition complete with duties and responsibilities and the CFAG Contact Details.



#### Facilitator's Note:[1/9]

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

Sample of the FERPS is available in Annex A.

### How to prepare the FERPS:

1. The FERPS should be an output of the school officials with the BFP personnel acting as guide and facilitator.

2. The preparation of the FERP shall be participated by the following:

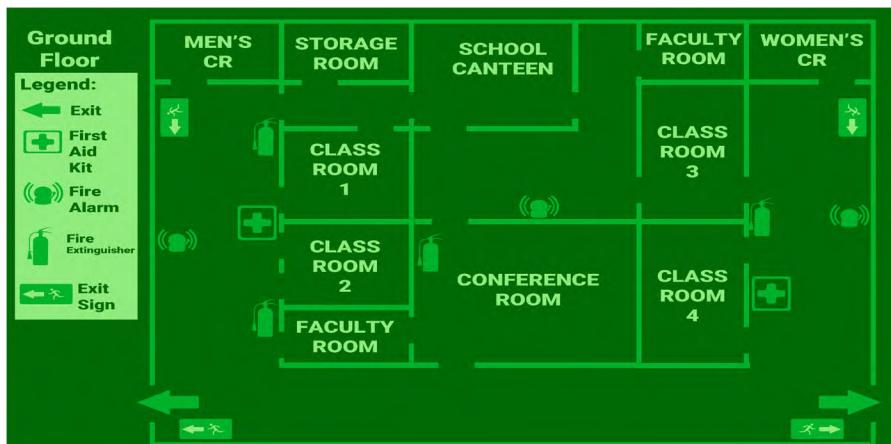
**From the school:**

- School administrators
- Teaching staff
- Non-teaching staff
- Other school employees
- PTA officers

**From the BFP:**

- Team Leader/OIC, CFM, MFM, or his/her representative
- Bumbero sa Pamayanhan
- Documentation personnel

3. Prior to the workshop or meeting, a site inspection should be made taking note of the location of important safety provisions of the building and other details needed for the maps.
4. The FERPS simply focuses on the formulation of the above mentioned maps. Considering that several components of the maps will coincide with the compliance of the school buildings to the Fire Code, any deficiency or violation found should be subject to a separate proceeding as prescribed by the Fire Code.
5. Scheduling these inspection and workshops/meetings should be done in times convenient to both parties.
6. The output of the FERPS should be posted in every class room and should not be removed unless updated. A copy is likewise will be kept by the fire station.



IN THE ILLUSTRATION: Sample School Building Evacuation Plan.



IN THE ILLUSTRATION: Sample School Vicinity Map.

## 2. Organization Of School Emergency Response

### Team (SERT)

The importance of establishing an emergency-response team in every school cannot be overstated. Without a properly developed team, a school will struggle to consistently follow an emergency action plan and respond appropriately to incidents. To resolve the same, the BFP shall be primarily tasked to cause the creation of school emergency response team (SERT) in every school nationwide either public or private. The created team shall serve as emergency first responders should fire or any emergency occur in the school compound. The teaching and non-teaching staffs of schools, school administrators and school employees should compose this team.



The primary function of the SERT is to observe or implement the FERPS during emergency. Unlike the CFAG, the SERT's primary duty is to ensure the safety of the students in times of emergency. Firefighting and other complex emergency response shall be coordinated to the CFAG and the BFP.

The SERT is to be composed out of a basic first-responders format or structure such as, a Team Leader and Member First Responders with the following duties and functions.

#### a. SERT TEAM LEADER

The SERT Team leader must be a member of the teaching or non-teaching staff of the school, preferably the school head. However, other faculty or staff can be designated as well depending on the agreement of the group.

#### Facilitator's Note:[3/9]

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

**The Team Leader will have the following functions;**

- Lead the coordination with the barangay and the BFP in the formulation of the FERPS,
- Facilitate the scheduling of the conduct of seminars and trainings in relation to the FERPS,
- Lead the emergency response in accordance to the FERPS in times of emergency in schools,
- Take the responsibility to immediately notify the CFAG and the BFP in case of bigger fire or emergency, and
- Perform other functions relative to fire and emergency preparedness he may deem necessary.

**Facilitator's Note:[4/9]**

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

**b. FIRST RESPONDERS**

The First Responders will be composed of teaching and non-teaching personnel of the school who by their preference or qualification may be designated to compose the following first responder category.

**Evacuation Responders**

- Lead the conduct of evacuation during fire and other emergencies,
- Familiarize with the School Evacuation Plan and propose possible updating or modification to ensure its efficiency,
- Take the lead in teaching the students in familiarizing the evacuation plan,
- Ensure that the evacuation plans are posted in conspicuous locations inside the classrooms and the school, and
- Perform other functions related to emergency evacuation.

**Facilitator's Note:[5/9]**

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

**Health and First Aid Responders**

- Preferably the employed school nurse or in the case of no medical employee, any teaching or non-teaching personnel with medical background,
- Familiarize the contents and protocols in the Medical Emergency and First Aid Plan,
- Take the lead in responding to medical and health emergency in schools,
- Take the lead in teaching other staff and or students first aid techniques and other emergency response, and
- Perform other functions related to health and first aid.

### Immediate Firefighting First Responders

- Lead the swift response to reported fires in school for immediate control or extinguishment,
- Ensure the readiness of the school to respond to fires by providing a standby firefighting tools and equipment ready and available such as, fire extinguishers, sand bags, buckets and pails, etc.,
- Should be familiar with the basic methods and principles in firefighting and take the lead in teaching the same to other school staff.
- In case of uncontrollable fires, the responders must seek the immediate assistance of the CFAG and the BFP.

The number of members per First Responder category will depend on the number of available teaching and non-teaching staff of the schools. For schools with a minimal number of teaching staff (less than five), members of the Parent-Teacher Association (PTA) can be tapped.

Trainings and seminars for SERT should be facilitated by the BFP using the Program of Instruction of the Basic Skill for Responders (BSR) or upon further request the Technical Skills for Responders (TSR). Identification cards and Certificates should be issued in conformity with the format prescribed by the BFP NHQ for SERT members.

Additional technical skills training such as advance EMS, firefighting or emergency response can be accommodated by the BFP in coordination with expert lecturers and upon the request of the SERT.

#### Facilitator's Note:[6/9]

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.



Under this demonstration guide, procedures for two types of activity are standardized albeit with minor adjustment for each of the activity. These activities include:

1. Fire Incident Simulation, and
2. Earthquake Drill with Accompanying Firefighting Drill

## 1. FIRE INCIDENT SIMULATION

### Facilitator's Note:[7/9]

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

Fire incidents in schools can happen without any warning, preparedness for both the school administrators and the students should be practiced through a controlled fire incident simulation. The simulation can be school-wide or clustered depending on the agreement between the BFP and the school administration. Conducting the simulation is likewise scenario based and should be participated by the CFAG. Procedures for fire incident simulation in schools should conform to the following standards.

### BEFORE SIMULATION

#### A. Coordination Activities

Prior to an incident simulation activity, the facilitators must perform two mandatory activities which are 1) Coordination and Table Top Planning; and 2) Ground Survey of the vicinity of the simulation.

#### 3. Coordination and Table Top Planning

Conducted at least a few days before the simulation, the purpose of this activity is to discuss with involved school officials, the SERT and the CFAG the simulation that will be executed. The Facilitator must discuss in detail the identified scenario guided by the FERPS, the roles and responsibilities of the SERT and the CFAG and other important matters. The goal is to make known to every actor in the simulation what is going to happen in order to mitigate possible risks and eliminate any untoward incident.



The incident simulation should be scenario based where a classroom can be designated as burning and the response will revolve from there. However, in conceptualizing the scenario a few important things has to be considered.

- If the simulation is to be conducted on a multi-storey school building, the identified classroom should not be any higher than the second floor.
- No actual fire or even warm smoke should be used for scenarios involving school buildings or classrooms, instead cold smoke generated from smoke machines should be used.

- c. Grade 3 students and below should be excluded from the simulation so as to avoid any accident while evacuating. A separate activity is identified for them under Volume 1 and 2 of the SPFE Manuals.

The participation of the fire engine responding either from the station or from a closer pre-designated location will also be tested in the simulation. However, it should also be stressed out that the simulation is intended to test the capability of the SERT and the CFAG, the role of the BFP is but an observer and as immediate support in case of any untoward incident.

#### **4. Ground Survey**

After the table top planning, the facilitators along with the individuals involved in the planning should conduct a ground survey of the location and perform the following.

1. Map-out the location of the target classroom;
2. Identify location for emergency triage (to include the command post) and evacuation area;
3. Mark (if possible paint the road or street) locations for the evacuation, approach and staging location of responding fire trucks and other rescue vehicles; and
4. Brief the students of the simulation activity. This briefing however should fall on the responsibility of the school teachers.



Prior to the incident simulation, other coordination activity that the facilitators must perform includes the following:

1. Activate other BFP units such as EMS and SRF if the scenario calls for their participation;
2. Coordinate with other law enforcers such as the PNP and/or the LGU Traffic Management Office if the scenario calls for their assistance;
3. Notify other fire stations to be on standby in case of any untoward incident that might require their immediate assistance; and
4. Other activities the station may find necessary to prepare.

#### **Facilitator's Note:[8/9]**

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

### *B. Logistical Requirements Preparation*

In addition to all the coordination activity, the following logistical requirements should also be prepared either by the fire station or in partnership with the barangay.



### *5. Smoke in the Classroom Set-up*

Unlike in community incident simulations, a mock-up fire is strictly prohibited for incident simulation in schools. Instead, a cold-smoke simulation should be conducted using smoke or fog machines. Alternative to cold smoke and to simulate accumulating smoke around the ceiling of the classroom, the facilitator may use party banners (bunting, or banderitas) strung not less than 1.2 meters from the floor across the classroom.

### *6. Fire Pit Kit*

An alternative to mock-up fire, the facilitators may opt to using a Fire Pit instead to be located at a separate demonstration area in the school grounds. Placement of this fire pit should conform to the 60 sqm minimum clear demonstration area. The fire pit shall have four stable stands to prevent unnecessary spills of its contents into the ground, and it shall not have any leaks in every part of the fire pit. The materials used shall be fire-resistant and cannot be melted easily. The fire pit shall be half-cut from the 45–55-gallon size of the metal drum; the fire pit stand must be two feet (2 feet) in height, with a handle on both ends of the drum to be utilized for water spills; the mixture of gasoline and diesel must be 1:1 in ratio, amounting to at least 200 ml, or 1 glass which is mixed from the half-full water of the fire pit. Part of the fire pit kit is the Fire Torch, made of wood and can be wrapped by cloth on its tip; and must not be less than 1 meter in length and not too long to compromise the igniting of fire pit.

Firefighting demonstration using the fire pit can be conducted separately after the simulation.



### *7. Extinguishing Agents or Equipment*

Depending on the scenario, extinguishing agents that can be used during the incident simulation may be a fire extinguisher or the fire engine. It should be stressed during the coordination and table top planning that fire extinguishers can only be used if the scenario depicts the inception of the fire, but for fully developed fires, normal firefighting equipment should be used.



### ***8. Documentation***

Documentation is integral to incident simulation activities because it captures important details in the activity that would later be used in the gaps analysis. A documentation personnel should be designated recording the activity either through video or photos.



## **DURING SIMULATION**

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Similar to community incident simulation, conduct of the incident simulation should be according to the following standard procedures.

### **Stage 1: Countdown**

A countdown period of at least one hour prior to the start of the simulation should be set, this is to make sure that all contingencies are in place and all actors to the drill are accounted for and are in position. The simulation will start with the GO Signal from the Fire Marshal or Lead Facilitator.



### **Stage 2: Simulation Proper**

The simulation proper should run guided by four steps or stages with the acronym R.A.C.E. or Rescue, Activate, Confine and Extinguish.

#### **1. Rescue**

Fifteen Minutes before the set start of the simulation, the facilitator will designate any random individual within the identified actors (not identified during the table top planning) to be Fire Informant or someone who was able to notice the fire. The fire informant's job is to alert everyone within the immediate vicinity that there is a fire through shouting or knocking on classroom doors.



#### **2. Activate**

Once the alarm is raised by the fire informant, he will then alert the SERT Team Leader, other school officials and the CFAG of the fire. This will also include calling the nearest fire station. Note: The reason for selecting a random individual as fire informant is to test their readiness to include whether or not the individual have on his cellphone, the contact number of the nearest fire station at the very least.



### 3. *Confine*



Once notified, the SERT Leader and responders will spring into action and perform their designated functions such as evacuation of other students, closing of all classroom once evacuated to prevent further spread of fire, perform first aide to designated injured students and perform immediate firefighting using the fire extinguisher or fire hose cabinet depending on the scenario. Once the CFAG arrive, they are to further assist in the evacuation, rescue, traffic control and immediate firefighting ensuring that the fire does not spread.

### 4. *Extinguish*



Depending on the scenario, proceeding to extinguishment will either involve only the CFAG using their own firefighting capability or with the assistance of the Fire Station performing the final fire suppression. The simulation will end once the acting or designated fire ground commander (either from BFP or CFAG) declares FIRE OUT.



### Stage 3: Simultaneous Evaluation

Simultaneous to Stage 2, Simulation Proper, designated BFP Personnel are to act as evaluators using the Fire Drill Evaluation Checklist (see Annex C). Along with taking pictures or videos, the purpose of the simultaneous evaluation is to properly document the simulation and assess the performance of the actors involved.



## AFTER SIMULATION

### **Post Simulation Briefing, Gaps and Adjustments**

Right after the incident simulation, a Post Simulation Briefing should be conducted along with all the actors involved. This is in order to further assess the simulation and perform. The facilitator should clearly identify any error or mistakes made by any of the actors involved and provide recommendation for future improvement. The goal is to perform better and better in every incident simulation that is organized.



## **2. Earthquake Drill with Accompanying Fire Suppression Drill**

Conduct of regular earthquake drills in the Philippines under the NSED or National Simultaneous Earthquake Drill spearheaded by the Office of Civil Defense. Participation of the BFP in earthquake drills can either be through invitation of the school community to supervise the NSED or a separate earthquake drill organized by the schools. These drills are commonly accompanied by firefighting demonstration because in the real scenario, earthquakes are always followed by fires. In situations like this, the following guidelines have to be observed.

### **1. Conform to latest NSED Protocols**

Promulgated procedures during earthquake drills are constantly updated by competent authorities. This includes the observance of DUCK, COVER AND HOLD. The fire station should keep themselves updated on recent updates on safety protocols during earthquakes such as minimum time required to fully evacuate the building and other scenarios.

#### **Facilitator's Note:[9/9]**

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

### **2. Stick with the FERPS and SERT**

The Fire Emergency Response Plan for Schools (FERPS) facilitates safe and efficient evacuation of a building in distress be it during earthquakes or during fire incidents. In the event of earthquake drills, the FERPS should be observed and tested as it is implemented by the SERT.

### **3. Perform Fire Fighting Demonstration at the End**

Depending on the agreement between the facilitator and the school administration, a firefighting demonstration can be conducted after the earthquake drill. Conduct of this demonstration should be guided by the procedures under the Demonstration 1: Fire Extinguisher Demonstration of this module. Firefighting demonstration using the fire engine can also be included, provided that the same procedures in Demonstration 1 be observed.

## *NOTES:*

# Demonstration 1

Standardized Procedures for Simulations, Drills and Demonstrations

# Fire Extinguisher Demonstration



ILLUSTRATION BY: F01 Ricjun P Almacen

# In this Demo 1...

## Goal

To educate the communities and the general public about how to use a fire extinguisher in suppressing fires.

## Objectives

At the end of the demonstration, the participants would be able to:

1. Know how to use a fire extinguisher as a first line of defence in suppressing fires in their residences and or communities.
2. Be aware of the importance of keeping one fire extinguisher in the home.

**Total Time of Delivery:**

*Coordination Activity:  
20 to 25 Minutes*

### Demonstration Requirement:

1. Printed tarpaulins
2. Different types of fire extinguisher (Whichever is applicable based on the assessment of the lecturer of possible fire hazards in the community they are to perform the drill)
  - a. Dry powder
  - b. CO<sub>2</sub>
  - c. Water
  - d. Foam
3. Fire Pit Kit (To include the fire pan, fuel, and torch)

## Subject Overview

**Purpose:** To spread awareness on the importance of fire extinguisher as a first aid fire suppression apparatus in the community. This is to enable residents to acquire lasting learning experience on how to use it in an emergency situation.

**General Guidance:** The concepts involved in the demonstration must be taught in the simplest way so that the participants will be able to absorb the subject easily with long-lasting impact. It has also to be imparted with an actual demonstration on how to use the fire extinguisher and require the participants to operate it to acquire first-hand experience. Thus, through the aid of teaching materials, the general public will be able to fully grasp its necessity in fire emergency situation that demands the use of fire extinguisher.

# Cheat Sheet

**Things to Consider:** The lecturer must exert an effort to bring a real fire extinguisher so that the discussion will be more exciting and realistic. Allow them to interact and participate in the demonstration to evaluate their understanding of the topic. Have a sense of humour in executing the demonstration to make it appealable to the participant's hoverer; stay sensitive and respect their differences. The most important thing to consider also is to strive to allow the participants to develop muscle memory that shall naturally aid them in using this portable device during fire.

For this demonstration, safety of both the public and the participants is the utmost priority, hence, the facilitator must secure a sixty (60) square meters of clear space wherein no participant is allowed inside. (See illustration below). The participants should be kept at a safe distance outside that area until such time that the return demo is to be performed. Only ONE participant at a time should be allowed inside the demonstration area. Additional safety precautions have to be made by the facilitators such as a fire extinguisher on standby, medical first aid kit and other necessary equipment. The clear demonstration area should be provided with a cordon line as a form of separation.





## Demonstration Procedure:

Organizing of Emergency Evacuation Drills and Fire Incident Simulations should be done in a holistic manner and integral to this is the formulation of the Fire and Emergency Response Plan for Schools (FERPS) and the creation of the School Emergency Response Team (SERT).

### **BEFORE DEMONSTRATION**

This demonstration will require a short discussion on the use of fire extinguisher and a recap on origin of fire its causes, hence the facilitator must discuss briefly the following points:

**1. Explain that fire requires the following three elements of fire to exist:**

**Note:** emphasized the three elements are called the “fire triangle” that creates a chemical exothermic reaction. You may ask the participants to find sources of heat and fuel at home.

**Facilitator's Note:[1/8]**

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

**2. Explain the classes of fire emphasize the following key points:**

- It is very important to identify the type of fuel feeding the fire to select the correct method and agent for extinguishing the fire.
- Stress to never use water on a fire unless you know what is burning. Water conducts electricity that could spread the problem and cause more shorting in the equipment. Water will also carry burning oil, gas, and other petroleum products into new areas to ignite fire.

**Facilitator's Note:[2/8]**

The lecturer may ask the participants to give examples. Let the audience engaged in giving examples.

### 3. Identify the Parts of Fire Extinguisher.

#### Facilitator's Note:[3/8]

Facilitators may roam around and select participants to be interviewed and ask for the name of the parts of the extinguisher. To get their attention.



IN THE ILLUSTRATION: Parts of a Fire Extinguisher

### 4. What to remember in using Fire Extinguishers?

#### Facilitator's Note:[4/8]

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

- Always stand with an exit at your back.
- Stand several feet away from the fire, moving closer once the fire starts to diminish.
- Use a slow, sweeping motion and aim the fire extinguisher nozzle at the base of the fire.
- Use a “buddy system” if possible. To have someone back you up or to call for help if something goes wrong.
- After putting out the fire, call the nearest fire station. Be sure to watch the area for a while to ensure the fire does not re-ignite.
- Let them save the emergency number in their cell phones.

### 5. Set-up the Fire Pit

The fire pit will serve as the controlled environment for the demonstration; it should conform to the following specifications.

### Fire Pit with Stand

The fire pit shall have four stable stands to prevent unnecessary spills of its contents into the ground, and it shall not have any leaks in every part of the fire pit. The materials used shall be fire-resistant and cannot be melted easily. The fire pit shall be half-cut from the 45–55-gallon size of the metal drum; the fire pit stand must be two feet (2 feet) in height, with a handle on both ends of the drum to be utilized for water spills; the mixture of gasoline and diesel must be 1:1 in ratio, amounting to at least 200 ml, or 1 glass which is mixed from the half-full water of the fire pit.



IN THE ILLUSTRATION: Fire Pit with Stand

### Facilitator's Note:[5/8]

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

### Torch

Fire Torch can be wrapped by cloth on its tip; and must not be less than 1 meter in length and not too long to compromise the igniting of fire pit.



IN THE ILLUSTRATION: Torch

### DURING DEMONSTRATION

This demonstration will require a short discussion on the use of fire extinguisher and a recap on origin of fire its causes, hence the facilitator must discuss briefly the following points:

**PART 1: Show them how it is done.**

The demonstration proper will start with the Facilitators showing to the participants how to operate a Fire Extinguisher using the T.P.A.S.S. sequence. If necessary repeat this process multiple times to allow familiarity on the participants.

**Facilitator's Note:[6/8]**

Ensuring the safety of the participants and the facilitator should be given paramount importance.



**T- Twist the Pin**



**P – Pull the pin while holding the nozzle away from you, and release the locking mechanism.**

**Facilitator's Note:[7/8]**

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.



**A – Aim low, pointing the nozzle at the base of the fire.**



**S – Squeeze the lever slowly and evenly.**



**S – Sweep the nozzle from side to side.**

**PART 2: Let them try it!**

After a few demonstrations on the part of the facilitator, encourage a number of the participants to try it themselves. The facilitator must be cautious and ensure safety during the entire demonstration.

Remind the participants of the following important reminders:

- a. Not to put fire extinguisher on the floor while executing the drill
- b. Not to drop the fire extinguisher dropped during the performance of the drill.
- c. Always follow the sequence of T.P.A.S.S.
- d. Not to use the fire extinguisher against the wind direction
- e. Always make sure to hit the base of the fire.

**Facilitator's Note:[8/8]**

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

**AFTER THE DEMONSTRATION**

The demonstration can go on for as long as the participants are engaged and the resources available. Once it culminates, perform a post evaluation activity with the participants by asking the following questions.

1. Do we know now what the parts of a fire extinguisher are?
2. Do we know now how to use the fire extinguisher?
3. Can we recite the meaning of the T.P.A.S.S.?

**NOTES:** \_\_\_\_\_

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**NOTES:** \_\_\_\_\_

## Demonstration 2

Standardized Procedures for Simulations, Drills and Demonstrations

# Kitchen Fire Safety Demonstration

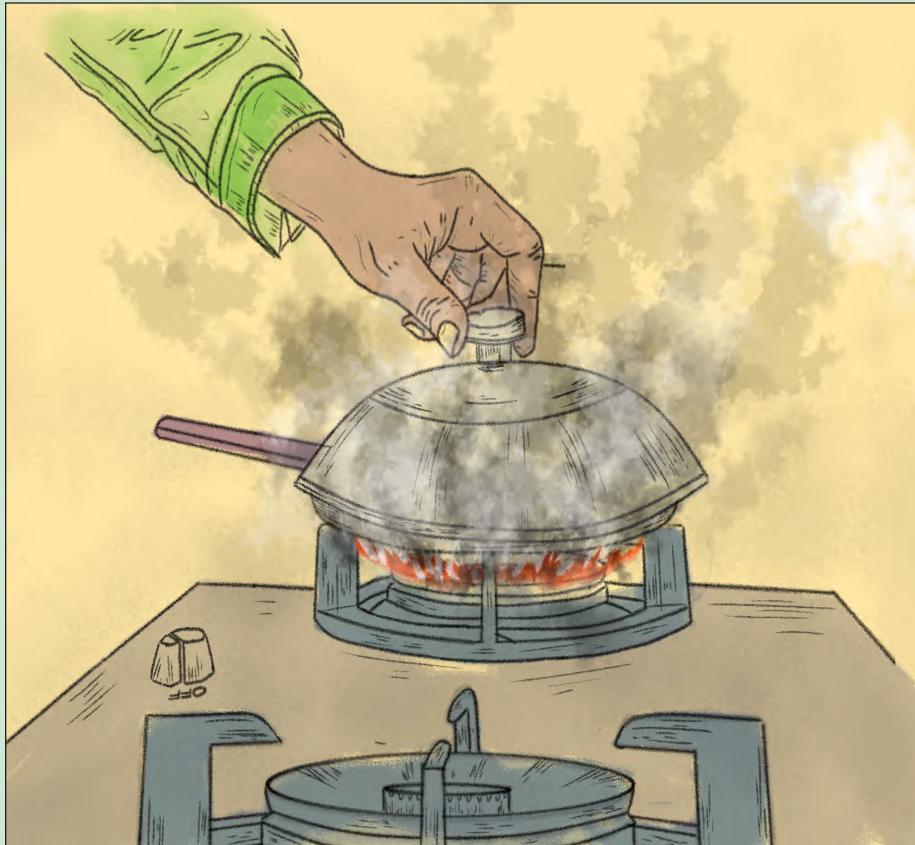


ILLUSTRATION BY: FO1 Ricjun P Almacen

# In this Demo 2...

## Goal

To educate the communities and the general public about kitchen fire safety and means of extinguishments using available household materials

## Objectives

At the end of the demonstration, the participants would be able to:

1. Know the risks involved in kitchen fires; and
2. Know how to perform immediate fire suppression using available household materials.

**Total Time of Delivery:**

*Coordination Activity:*

*30 Minutes*

### Demonstration Requirement:

1. Cooking Equipment
2. Fry Pan
3. Oils
4. Fire Blanket (Any thick fire-resistive material)
5. Fire Extinguisher
6. Stock of Sand
7. Pail of water
8. Baking Soda
9. Any Fire Resistive Cover

## Subject Overview

**Purpose:** To enable the participants know the basic demonstration procedure on immediate fire suppression techniques whenever there's a kitchen fire in the home.

**General Guidance:** The demonstration involved in this topic is technical and requires utmost safety consideration. The fire station is advised to prepare and make ready all the materials needed in this demonstration and ensure that all are ready prior to the demonstration. Considering the technicality and risks involved, it is advised that the facilitator practice as often in order to mitigate any form of risk when already facing the public.

# Cheat Sheet

**Things to Consider:** For this demonstration, safety of both the public and the participants is the utmost priority, hence, the facilitator must secure a sixty (60) square meters of clear space wherein no participant is allowed inside. (See illustration below). The participants should be kept at a safe distance outside that area until such time that the return demo is to be performed. Only ONE participant at a time should be allowed inside the demonstration area. Additional safety precautions have to be made by the facilitators such as a fire extinguisher on standby, medical first aid kit and other necessary equipment. The clear demonstration area should be provided with a cordon line as a form of separation.





# Demonstration Procedure:

## **BEFORE DEMONSTRATION**

In module 6, basic concepts of kitchen fire safety were incorporated, prior to conducting this demonstration, the facilitator should have first discussed that topic in order to provide the participants the appropriate foundation knowledge as they proceed to immediate suppression techniques.

### **Prepare Demonstration Table and Secure the Demonstration Area**

#### **1. The Demo Table**

For the purpose of this demonstration, the facilitator should first prepare the demonstration table. The table can be made of wood or stainless steel with a dimension of not smaller than 80cm by 120cm. In the case of a wooden table, the table should not have any form of covering such as plastic covering (mantel) or any oil-based paint coating. The table should be placed right at the center of the clear demonstration area. The demonstration area must be safe from any hazards and obstacles.

#### **2. The Heating Device and Fuel**

Heating devices can either be of the following 1) through a gas burner supplied through an LPG tank; or 2) a Portable Stove using Butane Canisters. In the case of the gas burner supplied through an LPG tank, its connecting hose should not be less than 3 meters and the LPG tank isolated from the table of not less than 2.5 meters.

Fuel for the actual burning demo could either be the use of actual oil or gasoline and diesel mixture. When using oil, an ordinary low heat resistant cooking oil product should be used to demonstrate the forming of the smoke and its eventual ignition. This should be done at the beginning of the demonstration in order to show to the participants what will actually happen to unattended cooking oil. For the return demo, the gasoline and diesel mixture can be used because it is more manageable to control.

#### **Facilitator's Note:[1/12]**

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

#### **3. Wear your PPE and make the Participants Wear One Too**

In doing the demonstration, ensuring the safety of both the facilitators and the participants are the most important. Safety also includes the proper wearing of PPEs (Bunker Coat and Trouser) of both the facilitator and the participant performing the return demo.

## DURING DEMONSTRATION

Prior to proceeding to the return demo, the facilitator should always first demonstrate the technique multiple times. No participant should be forced to perform the return demonstration.

### **1. Use of Class K Fire Extinguisher to Suppress Kitchen Fire**

#### **Facilitator's Note:[2/12]**

Ensuring the safety of the participants and the facilitator should be given paramount importance.

If the fire station is able to secure or provide a Class K Fire Extinguisher then this technique can be performed. However, if no such type is available, a simple discussion is enough recounting the steps on using the fire extinguisher or the T.P.A.S.S. (refer to Module 6)

#### **7- Twist the Pin**



#### **Facilitator's Note:[3/12]**

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

**P** – Pull the pin while holding the nozzle away from you, and release the locking mechanism.



**A** – Aim low, pointing the nozzle at the base of the fire.



**S** – Squeeze the lever slowly and evenly.



**S** – Sweep the nozzle from side to side.



## 2. Use of Fire Blanket or Any Fire Resistive Tray for the Smothering of the Kitchen Fire

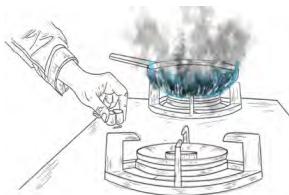
**Step 1** - If applicable, use fire gloves or any gloves to protect your hands from burning.



### Facilitator's Note:[4/12]

Ensuring the safety of the participants and the facilitator should be given paramount importance.

**Step 2** - Simply shut off the involved cooking device or equipment quickly.



### Facilitator's Note:[5/12]

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

**Step 3** - Put slowly the fire blanket or any fire resistive tray to cover the open flame of the device or the fry fan. Let the covering stay for at least 15 minutes until it will gradually cool off.



### Facilitator's Note:[6/12]

Facilitator may used colloquial terms in communicating to the participants and may add funny stories and lines of jokes for the participants to get more comfortable.

**Step 4** - Remove carefully the involved cooking material and bring it to the safe or open space.



### ***3. Use of Sodium Bicarbonate or Baking Soda to Suppress Incipient or Small Kitchen Fires***

#### **Facilitator's Note:[7/12]**

Ensuring the safety of the participants and the facilitator should be given paramount importance.

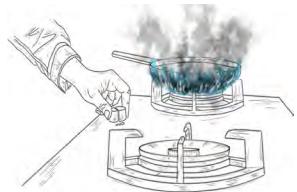
**Step 1** -If applicable, use fire gloves or any gloves to protect your hands .



#### **Facilitator's Note:[8/12]**

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

**Step 2** - Simply shut off the involved cooking device or equipment quickly.



**Step 3** - Put a Baking Soda in a cup, you may also add vinegar.



**Step 4** - Pour the baking soda to the open flames or use through its co<sub>2</sub> to extinguish the flame.

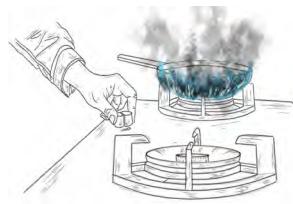


**Step 5** - Remove the material or appliance after it has cool off and bring it to the safe or open area.



#### 4. Use of Water if Applicable

*Step 1 -* Simply shut off the involved cooking device or equipment quickly.



##### Important Note:[1/3]

This procedures is only applicable for kitchen fire involving class A fire or combustible materials. This is not applicable for kitchen fire resulting from oils or greases.

*Step 2 -* Get a bucket of water from any source of water.



##### Facilitator's Note:[9/12]

Ensuring the safety of the participants and the facilitator should be given paramount importance.

*Step 3 -* Pour the water to the base of fire provided that it involves class A or ordinary combustible materials such as wood, charcoal, paper, plastics, etc.



##### Important Note:[2/3]

This procedures is only applicable for kitchen fire involving class A fire or combustible materials. This is not applicable for kitchen fire resulting from oils or greases.

*Step 4 -* Completely extinguish the fire and the hidden fires in the cooking furnace.



**5. Use Sand or Mud as a Means to Put Out Class A fire**

**Facilitator's Note:[10/12]**

Ensuring the safety of the participants and the facilitator should be given paramount importance.

**Important Note:[3/3]**

This procedures is only good for small fire or applicable in a traditional cooking using firewood or in open burning.

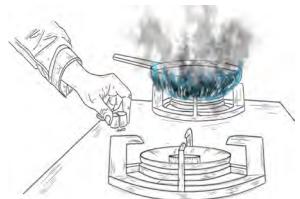
**Facilitator's Note:[11/12]**

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

**Step 1 -** If applicable, use fire gloves or any gloves to protect your hands.



**Step 2 -** Simply shut off the involved cooking device or equipment quickly(if applicable).



**Step 3 -** Get a bucket of sand or mud from your surrounding or source.



**Step 4 -** Pour the sand to the base of fire or to the wood cooking furnace to exclude the oxygen. Protect your hand and body from the heat source.



**Step 5 -** Remove the material or appliance after it has cool off and bring it to the safe or open area. You may also clear the area.



## **AFTER THE DEMONSTRATION**

Discuss: In case the above procedures are not practicable or failed to perform the initial response to put out the kitchen fire, or the fire is gradually developing into the heat stage, then one should immediately notify 911 or adhere to the word SAFETY which stands for:

- S-** Sound the Alarm
  - A-** Advise Fire Department or notify the neighbourhood
  - F-** Fight fire using the proper technique
  - E-** Evacuate
  - T-** Tell Others
  - Y-** You always get free from the burning structure

The demonstration can go on for as long as the participants are engaged and the resources available. Once it culminates, perform a post evaluation activity with the participants by asking the following questions.

1. Did we learn the immediate fire suppression techniques?
  2. Can we recite these techniques?
  3. Do we know now what to do in case this happen to us in our homes?

**Facilitator's Note:[12/12]**

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

*NOTES:* \_\_\_\_\_

**NOTES:** \_\_\_\_\_

## Demonstration 3

Standardized Procedures for Simulations, Drills and Demonstrations

# Basic Electrical Fire Safety Demonstration

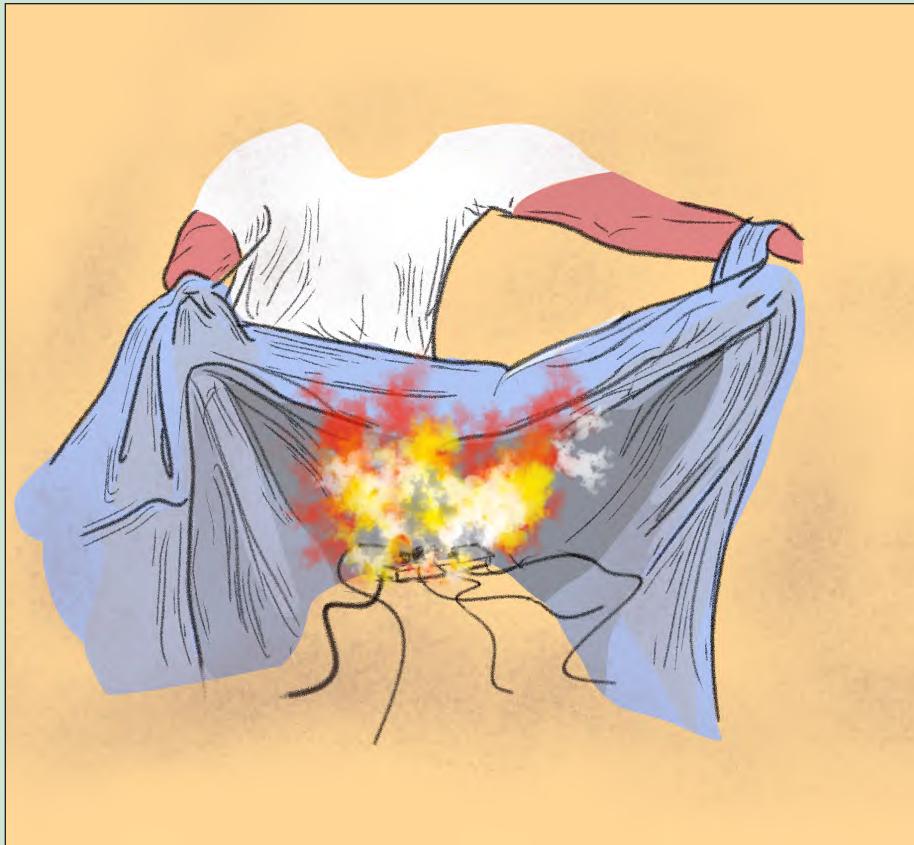


ILLUSTRATION BY: F01 Ricjun P Almacen

# In this Demo 3...

## Goal

To educate the communities and the general public about electrical fire safety and means of extinguishments using available household materials.

## Objectives

At the end of the demonstration, the participants would be able to:

1. Know the risks involved in electrical fires; and
2. Know how to perform immediate fire suppression using available household materials.

**Total Time of Delivery:**

*Coordination Activity:  
30 Minutes*

### Demonstration Requirement:

1. Electrical model wiring billboard
2. Worn cords
3. Standard & sub-standard wires
4. Circuit breaker (if applicable)
5. Fuse
6. Sample of electrical short circuit wire (if applicable)
7. Extension wire
8. Fire Extinguisher
9. Fire Blanket
10. Baking Soda
11. Sand or Mud
12. A pail of Water

## Subject Overview

**Purpose:** To enable the participants know the basic demonstration procedure on immediate fire suppression techniques whenever there's an electrical fire in the home.

**General Guidance:** The demonstration involved in this topic is technical and requires utmost safety consideration. The fire station is advised to prepare and make ready all the materials needed in this demonstration and ensure that all are ready prior to the demonstration. Considering the technicality and risks involved, it is advised that the facilitator practice as often in order to mitigate any form of risk when already facing the public.

# Cheat Sheet

**Things to Consider:** For this demonstration, safety of both the public and the participants is the utmost priority, hence, the facilitator must secure a sixty (60) square meters of clear space wherein no participant is allowed inside. (See illustration below). The participants should be kept at a safe distance outside that area until such time that the return demo is to be performed. Only ONE participant at a time should be allowed inside the demonstration area. Additional safety precautions have to be made by the facilitators such as a fire extinguisher on standby, medical first aid kit and other necessary equipment. The clear demonstration area should be provided with a cordon line as a form of separation.



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# Demonstration Procedure:

## **BEFORE DEMONSTRATION**

In module 6, basic concepts of electrical fire safety were incorporated, prior to conducting this demonstration, the facilitator should have first discussed that topic in order to provide the participants the appropriate foundation knowledge as they proceed to immediate suppression.

### **Prepare Demonstration Table and Secure the Demonstration Area**

#### **1. The Demo Table**

For the purpose of this demonstration, the facilitator should first prepare the demonstration table. The table can be made of wood or stainless steel with a dimension of not smaller than 80cm by 120cm. In the case of a wooden table, the table should not have any form of covering such as plastic covering (mantel) or any oil-based paint coating. The table should be placed right at the center of the clear demonstration area. For this demonstration, the facilitator can also use an ironing board if it is what is to be presented. The demonstration area must be safe from any hazards and obstacles.

#### **Facilitator's Note:[1/13]**

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

#### **2. The Mock-up Electrical System and Demo Appliances**

Demonstrating electrical fires and electrical appliance fire safety requires a mock-up electrical system to be prepared. This system is an extension cord 2 meters in length with a plug at one end, an outlet on the other, and a switch between them. (See illustration)



IN THE ILLUSTRATION: Sample Mock-up Electrical System

The facilitator may also use commercially available extension cords with a built-in safety switch. (See illustration)



IN THE ILLUSTRATION:  
Commercially Available Extension

**Facilitator's Note:[2/13]**

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

For the electrical appliance that can be used in the demonstration, the facilitator may use either of the following:

1. Hot Iron
2. A Short-circuited Rice Cooker or any other appliance
3. A bundle of old and unused electrical wires

***3. Wear your PPE and make the Participants Wear One Too***

In doing the demonstration, ensuring the safety of both the facilitators and the participants are the most important. Safety also includes the proper wearing of PPEs (Bunker Coat and Trouser) of both the facilitator and the participant performing the return demo.

**DURING DEMONSTRATION**

Prior to proceeding to the return demo, the facilitator should always first demonstrate the technique multiple times. No participant should be forced to perform the return demonstration.

**Discussion:**

In handling electrical fires or fire involving exposed electrical systems or burning appliances, everyone should remember the three basic steps: 1) Switch Off; 2) Cover; and 3) Remove.

1. Switch-off the electrical system by either unplugging the appliance, turning off the switch or pulling down the circuit breaker whichever is the fastest to do;
2. Cover the burning material with any extinguishing agent you can find; and
3. Remove the material slowly once the fire is extinguished.

***1. Use of dry powder, a Class C , CO2 or Halon Fire extinguisher as a means to put out the class C fire.***

If the fire station is able to secure or provide a Class K Fire Extinguisher then this technique can be performed. However, if no such type is available, a simple discussion is enough recounting the steps on using the fire extinguisher or the T.P.A.S.S. (refer to Module 6)



**T- Twist the Pin**



**P – Pull the pin while holding the nozzle away from you, and release the locking mechanism.**

**A** – Aim low, pointing the nozzle at the base of the fire.



#### Facilitator's Note:[3/13]

Ensuring the safety of the participants and the facilitator should be given paramount importance.

**S** – Squeeze the lever slowly and evenly.



#### Facilitator's Note:[4/13]

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

**S** – Sweep the nozzle from side to side.

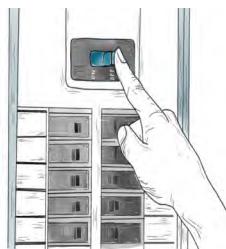


## 2. Using Fire Blanket on Burning Exposed Electrical Wires or Octopus Connections

**Step 1** - If applicable, the performer may use Fire Gloves or any gloves, wear goggles or fire resistive clothing prior to conducting demonstration.



**Step 2** - Turn off the main switch or the current source (make sure your hands are not wet)



#### Discussion:

Burning exposed electrical wires and or octopus connection is easy to manage for as long as the fire is just starting. One technique to put out electrical fire is to exclude the oxygen; anyone in the house may use a FIRE BLANKET or any damp, thick and fire resistive cloth to cover the fire.

**Remember:**

This procedure is only good for incipient or small fire.

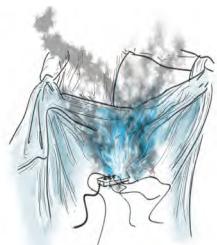
*Step 3 - Get a Fire Blanket, a thick or heavy fire resistive blanket that is available in your home*



**Facilitator's Note:[5/13]**

Ensuring the safety of the participants and the facilitator should be given paramount importance.

*Step 4 - Gradually cover the origin of fire with a blanket, protect your body and hands from the heat Source. Do not throw the blanket to the base of fire.*



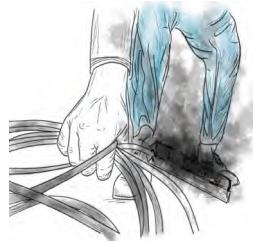
**Facilitator's Note:[6/13]**

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

*Step 5 - Let the covering stay until 10-15 minutes*



*Step 6 - Remove the material or appliance after it has cool off and bring it to the safe or open area*



**3. Use of sodium bicarbonate or baking soda to suppress incipient or small electrical fires.**

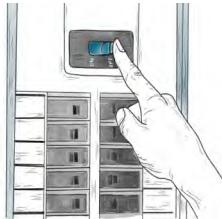
**Step 1** - If applicable, the performer may use Fire Gloves or any gloves, wear goggles or fire resistive clothing prior to conducting demonstration.



**Remember:**

This procedure is only good for incipient or small fire.

**Step 2** - Turn off the main switch or the current source (make sure your hands are not wet)



**Facilitator's Note:[7/13]**

Ensuring the safety of the participants and the facilitator should be given paramount importance.

**Step 3** - Put a Baking Soda in a cup, you may also add vinegar in a cup.



**Step 4** - Or apply directly slowly the baking soda to the origin of fire or use its co2 to extinguish the flame.



**Facilitator's Note:[8/13]**

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

**Step 5** - Remove the material or appliance after it has cool off and bring it to the safe or open area



**4. Use of water as a means to extinguish combination of Class C and Class A fire**

**Facilitator's Note:[9/13]**

Ensuring the safety of the participants and the facilitator should be given paramount importance.

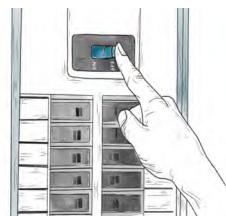
*Step 1-* If applicable, the performer may use Fire Gloves or any gloves, wear goggles or fire resistive clothing prior to conducting demonstration.



**Facilitator's Note:[10/13]**

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

*Step 2-* Be sure to turn off the main switch or the current source (make sure your hands are dry)



*Step 3-* Get a bucket of water from any source



*Step 4-* Pour the water to the base of fire if it involves a combination of class A and class C fire, you may also use a hose to stem water to the fire. ( Example: electrical fire originated at the wood of the ceiling or to any wooden material)



*Step 5-* Do not include pouring of water to the uninvolved appliances or material to avoid water damage.

*Step 6-* Get the material after it has cool off and bring it to the safe place.



**5. How to use sand or mud as a means to put out the fire.**

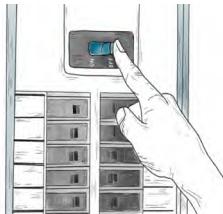
**Step 1-** If applicable, the performer may use Fire Gloves or any gloves, wear goggles or fire resistive clothing prior to conducting demonstration.



**Facilitator's Note:[11/13]**

Ensuring the safety of the participants and the facilitator should be given paramount importance.

**Step 2-** Be sure to turn off the main switch or the current source (make sure your hands are dry)



**Step 3-** Get a bucket of sand or mud from your surrounding or source.



**Facilitator's Note:[12/13]**

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

**Step 4-** Apply the sand to the origin of fire to exclude the oxygen. Protect your hand and body from the heat source.



**Step 5-** Remove the material or appliance after it has cool off and bring it to the safe or open



### AFTER THE DEMONSTRATION

**Facilitator's Note:[13/13]**

Will be explained based on the common dialect or native language of the community. Ensure to elaborate with examples based on what is present in their environment. The facilitator may also use actual examples if it is an original photo.

Discuss: In case the above procedures are not practicable or failed to perform the initial response to put out the kitchen fire, or the fire is gradually developing into the heat stage, then one should immediately notify 911 or adhere to the word SAFETY which stands for:

- S** - Sound the Alarm
- A** - Advise Fire Department or notify the neighbourhood
- F** - Fight fire using the proper technique
- E** - Evacuate
- T** - Tell Others
- Y** - You always get free from the burning structure

The demonstration can go on for as long as the participants are engaged and the resources available. Once it culminates, perform a post evaluation activity with the participants by asking the following questions.

1. Did we learn the immediate fire suppression techniques?
2. Can we recite these techniques?
3. Do we know now what to do in case this happen to us in our homes?

### NOTES:

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## **Module 7**

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Standardized Procedures for Simulations, Drills and Demonstrations

# **Annexes & References**

## Annexes A: CFPP Form 3: Scenario Visualization Form

SITUATION No. ___		BAD SCENARIO	WORSE SCENARIO	WORST SCENARIO
<b>Description</b>	"Provide description of the event"	"What could happen?"	"What could happen?"	"What could happen?"
<b>Location</b>	"Most likely area of origin"			
<b>Affected Household</b>	"Range of affected population"	Increasing range of affected population		
<b>Probability</b>		"Rate probability for this scenario"		
<b>Impact</b>		"Rate possible impact of this scenario"		

(Refer to CFPP Guidebook for Procedures)

## Annexes B: CFPP Form 5: Purok / Sitio Fire Response Data

Vulnerability zone			Vulnerability Rating		
<b>POPULATION AND HOUSEHOLD</b>					
Number of Household			Number of Families		
Number of Individuals			Estimated Land Area		
<b>ROUTE</b>					
<i>Names of streets along route.</i>					
Primary Route During Operation		Estimated Time of Travel		Actual Tested Travel Time	
Distance from the Fire Station					
<i>Names of streets along route.</i>					
Secondary Route During Operation		Estimated Time of Travel			
Distance from the Fire Station					
Entry Point for Responding Trucks					
Entry Point for Refilling Trucks					
<b>ACCESS ROAD TO THE AREA</b>					
Road	"Yes or No"	Width	"road width"	Pavement	"Dirt / concrete / asphalt"
Narrow Alleys	"Yes or No"	Width	"road width"	Pavement	"Dirt / concrete / asphalt"
Passable for Additional Entry Alleys	"Pumpers / Tankers / Penetrators "Name additional access alleys"				
Number of Hoses Needed to Cover Farthest Area					
<b>HYDRANT AND WATER SOURCES</b>					
LOCATION	DISTANCE FROM THE AREA		RATE OF DISCHARGE		STATUS
"List down sources within 1km radius"					
Other Water Sources	"Yes or No"	Type and Location			
<b>CFAG RESPONDERS</b>					
Chief CFAG	"Name"		Cont. No.		
Fire Defense Team Leader	"Name"		Cont. No.		
<b>EVACUATION AREAS</b>					
Primary Evacuation Area	Location/ Distance				
Secondary Evacuation Area			Location/ Distance		
<b>REMARKS</b>					
Fire Truck Parking Arrangement					
Engine Relay					
Adjacent Facilities/ Structures					

## Annexes C: Fire Drill Evaluation Checklist

BARANGAY:			DATE:		
NAME OF PUSOK / SITIO / LOCATION OF DRILL					
Number of Household Participating		Number of Families Participating		Number of Individuals Participating	

THE SCENARIO: ( Discuss briefly the planned scenario for the drill ) \_\_\_\_\_

		DRILL PHASES AND POINT CRITERIA	YES	NO	N/A
1	INCIDENT / ALARM PHASE				
a	Community leaders alarmed within 1 minute of notification of the fire.				
b	Fire Station Personnel Notified within 1 minute of the fire.				
c	Neighborhood alarmed immediately				
d	Other law enforing and security agency notified.				
2	MOBILIZATION / RESPONSE PHASE				
a	Fire Command Center immediately established.				
b	CFAG/First responders present on the scene within 2-3 minutes.				
c	Firefighting team present on the scene within 5-7 minutes.				
d	Traffic control mobilized and fire scene controlled.				
e	Tactical firefighting procedures performed.				
f	Fire extinguished within pre-set time.				
g	Responders performing operation with proper PPE and safety.				
3	EVACUATION AND EMERGENCY MEDICAL OPERATION				
a	Evacuation clear of hazard and obstructions.				
b	Evacuation route properly marked and with signages.				
c	Evacuees able to reach the evacuation area unhurt and in order.				
d	Evacuees are well accounted for.				
e	Missing individual duly reported to IC.				
f	Presence of leadership and command during evacuation.				
g	Rescuers activated and performing.				
h	Proper extrication of trapped victims.				
i	Triaging area established and triage performed.				
j	Victims properly given emergency medical attention.				
k	Special person's needs properly accommodated.				
l	Drill participants actively and seriously participated in the drill.				
4	DEMOBILIZATION				
a	Announcement of termination of drill.				
b	Critiquing, gaps and adjustments.				
		<b>TOTAL</b>			

SCORING INTERPRETATION:

18-25 YES's EXCELLENT

9-17 YES's SATISFACTORY

0-8 YES's POOR

REMARKS:

Acknowledged:

Barangay Captain

Evaluator:

Evaluator / Inspector

## Annexes D: CFPP Form 6: Preparedness Gaps and Adjustment Assessment Form

Issues	Existing Plan	Gaps	OPR
"Issues and concerns noted during the operation"	"Actions made based on the CFPP"	"Actions that should have been done based on noted issues"	"Person responsible to make the adjustments"

## MODULE 7: *References*

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