LA IMMACULADA CONCEPCION SCHOOL
SENIOR HIGH SCHOOL
GRADE 11 – STEM : DISASTER READINESS AND RISK REDUCTION

APRIL 20-24, 2020
TOPIC: FIRE HAZARDS

Overview

To an average student, the concept of fire may be simple and basic. We encounter fire in our daily lives: in cooking and preparing food; fire melts the metals used in building different infrastructure; and in science class, fire is provided by gas from Bunsen burner for experiments and observations. Fires society However, uncontrolled fires are dangerous and may cause extensive damage to lives and property in a short period of time. All around the world, forest fires, bush fires, and fires in urban area that spiral out of control continually pose as threats to communities, destroying settlements, historical structures, and the environment. In the past centuries, large fires encompassing whole cities and burning down important institutions such as shoos, public service agencies, and legislative building have brought chaos and disorder. It is important to become ware on how to prevent these destructive fires from occurring, and save ourselves, our families, and communities from fire disasters. To ensure our safety from uncontrolled fires, we must be aware of how fire disasters begin and evolve, in order to understand how to manage the fire and suppress it.

Types of Fires

Fires can originate from human accidents or intentional fire setting. On the other hand, other natural disasters such s earthquakes and volcanic eruptions also result in fire as collapsing buildings disrupt gas vents and cause explorations, while electric equipment spark incendiary materials that lead to big fires.

Efforts to raise awareness on the threat posed by uncontrolled fire are spearheaded by International Non-Government Organizations (INGOs) such as the Fire Rescue Development (FRDP), recognized by the United Nations and has a consultative status to the United Nations Economic and Social Council Locally, the Bureau of Fire Protection (BFP) answers the call to disseminate fire safety information to the public and prevents and suppresses destructive and uncontrolled fires in the Philippines by virtue of Republic Act 6975 enacted in 1990.

Uncontrolled fires can take place in forested areas or in urban metropolitan areas. Whether we live in rural or urban areas, the threat of fire disasters is very real and harmful.

Forest Fire

In February 2020, Australia experienced a forest fire affecting thousand residents in the area. According to authorities, the fire originated from a small natural grass fire, fanned by very strong winds. It is a common

source of forest fires especially in tropical countries around the world. Forest fires are wildfires that are also called bush fires, or grass fire, depending on the vegetation, in the countryside or wilderness. Wildfires are uncontrolled fires in the rural areas or countryside that are low scrub area particularly found in Southern Africa).Wildfires are usually huge and can change direction quickly at any given moment. Wildfires tend to be unpredictable however, fire modelling or using software to calculate the size and direction of the fire, which inputs of wind data and vegetation in the area, among others, is also being done by institutions responsible for the prevention and suppression of fire, so as to be prepared on the most probable path or direction of uncontrolled fires.

Wildfires

- It commonly occur in areas with both wet and dry climates, which provide the environment enough moisture for generation to grow
- It also occur in areas with hot and dry spells. Examples of these places are forests and bush lands of Australia and Southeast Asia.
- Wildfires are destructive because aside from destroying the homes of people who reside within or near forests, it can decimate forest ecosystem and reduce trees which provide oxygen.

Understanding Wildfires

- Uncontrolled forest fires also lessen the biodiversity of a forested area as it destroys the natural habitat of all types of birds, mammals, and reptiles, among others, especially the endemic species, found in the specific area.

Fire Regime and Wildfires

- A fire regime gives us a clear picture of the likelihood of fire in a forested area, how fire occurs in the area, and its impact to the environment.
- A fire regime characterizes the fuel load of a forested area. Fuel load, measures in tons per hectare (t/ha), is acquired from the type and amount of wood and other forest materials that can fuel a fire. Fuel load is based on the kind of vegetation of the forested area; if it is a tropical forest or an Australian bush land or African grassland.
- A fire regime also takes into consideration the fire ecology of the forested area. Fire ecology refers to the effect of the occurrence of fire in the ecosystem.
- A fire regime also includes the average open wind speed in a forested area While fuel load can determine the intensity of a wildfire, the average open wind speed and its usual direction shows the likely pattern that wildfires will occur and the frequency a forest fire or bush fire will occur.
- A fire regime literature is a classification of fires within a forest, such as ground fire, surface fire, understory or sub-canopy fire, crown fire, and stand-replacement fire, among others. For example, ground fire pertains to fire that burns the roots of trees, while surface fire burns low vegetation and shrubs.

Urban Fire

On March 18, 1996, the Philippines witnessed its worst urban fire disaster as fire broke out in the Ozone Disco Club, killing at least 162 people, most of which were college students celebrating their graduation. This tragedy was also caused by many fire hazards, such as the fire-prone soundproofing material installed by the disco.


1996 Ozone disco tragedy

Fire Hazards

Fire hazards are the objects or types of environment that increase the likelihood of fire occurrence, or serve as obstacles to escape in the event of a fire. Whether in forest or urban areas, these fire hazards need to be identified and eliminated to achieve fire safety

Causes of Fire

The common fire hazards or causes of fire are:

Appliances and equipment

The short-circuiting of electrical appliances at home, or leaving them on when no one is around, can cause small electrical explosions, which can lead to uncontrolled fire. It is important to turn off all electrical equipment when leaving the house and unplug appliances and electronic gadgets from electrical sockets to avoid electrical wires from short-circuiting.

Arson or Incendiarism/ Juvenile fire setting

Arson or incendiarism is the criminal act of setting fire to buildings, properties and forests, with the intent to cause damage. Meanwhile, juvenile fires setting is the act of burning property committed by minors or individuals below the age of 18, whether accidental or intentional.

Candles

If left unattended, candles can catch on curtains, pieces of paper, and any other flammable materials. In the Philippines, power outages or brownout and the high price of electric power encourages the use of candles in households for lighting purposes. It is important to be careful and vigilant when using candles, taking care to place them in areas where it cannot burn or cause damage should it fall over or the wind blow the flame in a certain direction.

Chemicals and gases

Cooking gas or Liquefied Petroleum Gas (LPG) is mostly used in kitchens, and leaving it open can lead to the danger of explosion, when a fire is lit. Even if there is no fire, people can suffocate and suffer from poisoning as a result of inhaling this flammable gas.

Moreover, people should avoid smoking within 200 meters from the gasoline station. The car engine should also be turned off when loading gasoline.

Electric wiring

Faulty electric wiring causes fires. Thus, the skills of a professional electrician are needed when installing electric wires and cables inside your house, to lessen the risk of fire. The quality of electric wires must be checked before installation and regular maintenance must be observed to know if the electric wires are still safe. Faulty electric wiring be charged as soon as possible to avoid fire accidents.

Fireworks

During the New Year celebrations, firecrackers, fountains, and colorful fireworks in the sky produce sparks and fire which can ignite flammable material near it, such as wooden boards, clothing and paper, among others. Sometimes, people examine malfunctioning fireworks and point them at houses, where the fireworks suddenly give a burst of fire and the house or portions of it aflame. Fireworks can also cause grave injury as it can cause blindness, severe burns, loss of fingers and limbs, and lead to death: Refraining from directly handling fireworks, especially if one is not a professional fireworks operator, can reduce the risk of fireworks explosions causing uncontrolled fires.

Holiday decorations

Christmas lights on the Christmas tree, placed on plants, and hung high up on walls can be a danger especially if left on at night. The heat of the Christmas lights can burn curtains or other flammable materials touching the hot light bulbs.

Household products and appliances

Household products such as cleaning liquids placed in spray cans, aerosol containers, and hairsprays can be fire hazards, because they are prone to exploding when heated up to a certain temperature. Thus, when there is a fire, these items can act as accelerants or substances that speed up the spread or development of a fire.

Meanwhile, any household appliance can also start a fire because of improper usage. Gas stoves that are mishandled and used without the necessary precautions are common household fixtures that cause uncontrolled fire. If left open, gas stoves and LPG tanks can leak highly flammable gas. Thus, always make sure that you close your gas stove when not in use. Maintain and repair your gas stove regularly, especially if it is old and malfunctions regularly.

Lightning fires and lightning strikes

Although lightning is not the common cause of forest or urban fires in the Philippines, it can be a major source of uncontrolled in other parts of the world. According to the National Fire Protection Association in the US, lightning causes an average of 24 600 forest, grass, and house fires each year, amounting to USD$ 407 million in damages. In Canada, 45% of all fires are forest fires caused by lightning, burning an average of 2.5 million hectares each year and causing USD$ 500 million to USD$ 1 billion lightning-related damages and disruptions.

As lightning strikes are unpredictable, we should be prepared. Communities should have enhanced fire detection and response mechanisms in place to put out forest fires in the soonest possible time to avoid widespread damage.

Smoking materials

Lighted cigarettes, tobacco, and other smoking materials carelessly thrown into flammable material such as dry vegetation or pieces of paper in the trash bin can easily cause uncontrolled fires. Lighters and matches can also be accelerants in the case of a fire. To be safe, it is better to avoid smoking altogether so that smoking material will not be present in your house. If smoking cannot be avoided, then keep it out of reach of children to prevent any accidental fires from occurring. Make sure that you have a fire extinguisher within the vicinity and know how to operate it, should your cigarette set something on fire. In the absence of a fire extinguisher, keep calm as you put out the fire, if it small. Lastly, always keep the phone or contact number of the nearest fire department near your community, so you can call them instantly once an uncontrollable fire breaks out.

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ACTIVITY 1
Creative Knack

Workshop Activity

A. Make a research about the theme of fire prevention month 2020, and make an art interpretation using your creativity through an editorial cartoon.

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ACTIVITY 2
A MINUTE TO WIN IT!

DIRECTIONS: Using your color marker, loop the word given below as fast as you can record your time. Be honest! Enjoy the activity!

TIME STARTED:_____ TIME ENDED_____

Fire Safety Week

E M M O L W P I B Z Q J R S C
S D C M R A L A E R I F E E A
N T I K D I A T S R I F D I F
M A L X L E N O P D A I D R I
R E L N O I T U A C Y R A E R
A M I P I N W N A R K E L T E
L E R V E R O M Q G R H E T F
A R D B S P W M E A A O P A I
E G E O W R A Y N X P S A B G
K E R J T N Y C T O S E C K H
O N I B A P S V S E B S S C T
M C F H D G O S B E F R E E E
S Y Z T L H U C D F P A A H R
V K F I R E T R U C K L S C U
F I R E P R E V E N T I O N R

CARBONMONOXIDE
CAUTION
CHECKBATTERIES
EMERGENCY
ESCAPELADDER
ESCAPEPLAN
FIREALARM
FIREDRILL
FIREFIGHTER
FIREHOSE
FIREPREVENTION
FIRETRUCK
FIRSTAIDKIT
PLANTWOWAYSOUT
SAFETY
SMOKEALARM
SPARKY

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GRADE 11 – STEM: DRRR

ACTIVITY 2

FIRE HAZARDS AT HOME

Directions: Look around the different area in the house. For each area, try to identify:

- ✓ Three source of fuel
- ✓ Three source of ignition
- ✓ Think about what can be done to avoid these hazards.
- ✓ You can take a picture of the area and have it pasted on the box provided.

INSERT PICTURE HERE

AREA; _____

SOURCE OF FUEL	HOW TO AVOID HAZARD
_____	_____
_____	_____
_____	_____
_____	_____

SOURCE OF IGNITION	HOW TO AVOID HAZARD
_____	_____
_____	_____
_____	_____
_____	_____

INSERT PICTURE HERE

AREA; _____

SOURCE OF FUEL	HOW TO AVOID HAZARD
_____	_____
_____	_____
_____	_____
_____	_____

SOURCE OF IGNITION	HOW TO AVOID HAZARD
_____	_____
_____	_____
_____	_____
_____	_____

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ACTIVITY 2
FIRE HAZARDS AT HOME

INSERT PICTURE HERE

AREA; _____

SOURCE OF FUEL	HOW TO AVOID HAZARD
_____	_____
_____	_____
_____	_____
_____	_____

SOURCE OF IGNITION	HOW TO AVOID HAZARD
_____	_____
_____	_____
_____	_____
_____	_____

INSERT PICTURE HERE

AREA; _____

SOURCE OF FUEL	HOW TO AVOID HAZARD
_____	_____
_____	_____
_____	_____
_____	_____

SOURCE OF IGNITION	HOW TO AVOID HAZARD
_____	_____
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_____	_____