

How to Use a Fire Extinguisher

**by Detective Kinsey Weems,
District Heights Police Department**

Abstract:

The purpose of this lesson plan is to provide instruction to students on how to properly use a fire extinguisher. The lecture and question format will cover the following topics: fire safety, fire tetrahedron, classifications of fires, types of fire extinguishers, and the steps involved in using a fire extinguisher. Each of these topics will be presented and reinforced through facilitated discussions and PowerPoint presentations. While a short demonstration is recommended, it is not necessary to the instruction.

Throughout the lesson, fire safety should be emphasized to the students. At the conclusion of the lesson, students will be able to demonstrate knowledge of the four elements that make a fire and to distinguish types of fires. They will also have mastered the basics of how to extinguish small fires using a fire extinguisher.

Keywords: *Fire extinguisher safety*
Fire extinguisher use
Fire safety
Fire tetrahedron
Fire classification

**MARYLAND POLICE AND CORRECTIONAL TRAINING COMMISSIONS
LESSON PLAN**

COURSE TITLE: Home Fire Safety

LESSON TITLE: How to use a Fire Extinguisher

PREPARED BY: WEEMS, J.K.

DATE: May 24, 2014

TIME FRAME

Hours: 25 Minutes
Day/Time: Varies

PARAMETERS

Audience: General Public
Number: 24
Space: Classroom

PERFORMANCE OBJECTIVES

1. Define the classifications of fires (C-1)
2. Discuss types of extinguishers (C-2)
3. Outline the steps to use a fire extinguisher (C-4)
4. Demonstrate the ability to use a fire extinguisher (P-4)

ASSESSMENT TECHNIQUE

1. Through a facilitated discussion, students' level of comprehension of the classifications of fires will be defined through feedback and group activity.
2. Through a facilitated discussion, students' level of comprehension of the types of extinguishers will be defined through feedback and group activity.
3. Through a facilitated discussion, students' level of comprehension of the steps to use a fire extinguisher will be defined through feedback and group activity.
4. Each student will demonstrate how to use a fire extinguisher. Mastery will be obtained by scoring 100% on a checklist.

	5. Each student will complete a written exam. Mastery will be obtained by scoring 70%.

PCTC Lesson Plan		Page 2	
STUDENT MATERIALS NEEDED			
<input checked="" type="checkbox"/> Pencils/Pens		<input checked="" type="checkbox"/> Notepad	
<input checked="" type="checkbox"/> Safety Glasses		_____	
_____		_____	
INSTRUCTOR EQUIPMENT/SUPPLIED NEEDED			
_____ Flipchart & Stands		_____ Videotape Player	
_____ Flipchart Markers		_____ Video camera	
<input checked="" type="checkbox"/> Masking Tape		_____ Televisions	
_____ Slide Projector (Carousel)		<input checked="" type="checkbox"/> Video show	
_____ Overhead Projector		<input checked="" type="checkbox"/> Computers	
<input checked="" type="checkbox"/> Projector Screen		<input checked="" type="checkbox"/> Speakers	
<input checked="" type="checkbox"/> Extension Cords/Power strips (CO2)		<input checked="" type="checkbox"/> Fire Extinguisher (A-B-C or CO2)	
STUDENT HANDOUTS			
# Needed		Title	
24		Fire Tetrahedron	
24		"Classes of Fires"	

PCTC Lesson Plan		Page 3	
METHODS/TECHNIQUES			

Description of methods goes here (format-justified text).

This lesson will be taught through lecture with questions and demonstration.

REFERENCES

The following books and other materials are used as a basis for this lesson plan. The instructor should be familiar with the material in these reference documents to effectively teach this module.

http://amerexfireextinguishers.com/html/purple_k_fire_extinguishers.html (Accessed 05/24/2014)

<http://www.youtube.com/watch?v=ZCSms-jyOao&feature=youtu.be> (Accessed 05/24/2014)

<https://www.ansul.com/en/us/pages/ProductSegment.aspx?ProductSegment=Portable+Extinguishers> (Accessed on 05/24/2014)

GENERAL COMMENTS

In preparing to teach this material, the instructor should take into consideration the following comments or suggestions.

This lesson plan is intended for use with instructors who have little or no teaching experience. If used with more experienced instructors, some examples of higher level instructional activities should be added.

LESSON PLAN

TITLE: How to use a Fire Extinguisher

PRESENTATION GUIDE	TRAINER NOTES
<p>I. ANTICIPATORY SET</p> <p>Has anyone ever had a fire in their home? Or maybe you know someone who has had a fire. How was their life or yours changed as a result of the fire?</p> <p>What do all fires have in common? Every fire begins as a small chemical reaction, which results in a small fire.</p> <p>Some of you might be asking “why am I here?” or “do I really need to know this?” I believe that everyone should know this information. If you react quickly and appropriately, you could save a life. It might be your own.</p> <p>That is why we are here today--to learn what to do in the event of a fire and how to use a fire extinguisher.</p> <p>PERFORMANCE OBJECTIVES</p> <ol style="list-style-type: none">1. Define the classifications of fires2. Discuss types of extinguishers3. Outline the steps to use a fire extinguisher (pull, aim, squeeze, sweep)4. Demonstrate the ability to use a fire extinguisher	<p>Time: 2 minutes</p> <p>Self-introduction</p> <p>Distribute handouts</p> <p>Begin PowerPoint presentation</p> <p><i>The instructor should also stress to the students that this is just a basic level course. More advanced instruction will be obtained in subsequent training programs.</i></p>
<p>II. INSTRUCTIONAL INPUT (CONTENT)</p> <p>At the completion of this lesson, you will be able to recognize the different types of extinguishers used to extinguish fires. With this being said, SAFETY FIRST!</p>	<p>Time: 20 minutes</p> <p>Lecture w/questions</p>

Fire Safety

- Keep calm – keeping calm helps to keep others calm and will allow you to react more quickly and with greater mindfulness. During stressful situations, mental function often slows.
- Contact 911 – This is important. If your extinguisher does not quite do the job, you can remain calm knowing that help is on the way.
- Do not attempt to extinguish electrical fires – electrical fires are difficult to put out. Sometimes the best thing to do in this situation is to keep the area clear of people and allow the professionals to handle it.
- Ensure the power has been cut off!! – Of course if it's a blender or hot plate that has caught fire, make sure it is unplugged or the breaker is off before trying to extinguish the flames.

Fire Tetrahedron (Graphic)

- Describe the four elements of the fire tetrahedron:
- Oxygen
- Heat
- Fuel
- Chemical Reaction

All elements of the tetrahedron are needed in order for the fire to exist. Take one of the elements away to extinguish the flame.

Classifications of Fires

- There are four main classes of fires. The classes are identified alphabetically as A, B, C, and D. Let's discuss these classes now and what fuels are involved in each.
- "A" – Wood, cloth, paper, rubber, and many plastics
- "B" – Gasoline, oil, grease, tar, oil-based paint, and flammable gases
- "C" – Energized electrical equipment
- "D" – Magnesium, sodium, potassium, zirconium, and other flammable metals

Now that we know the four corners of what makes a fire and the different classes of those fires, let's discuss the right tool for the right job.

.pps #3

Fire Safety

.pps #4

Fire Tetrahedron (Photo)

.pps #5 -7

Classifications of Fires

PowerPoint #7 (Picture of the classes of fires)

If there are so many classes of fires, there must be an extinguisher for each class right? Well, sort of.

Types of Extinguishers

- Pressurized water – mixture of compressed air & water. These extinguishers are mainly used on Class “A” fires ONLY
- Dry chemical – contains a fire retardant powder that smothers the fire and removes the oxygen and heat from the tetrahedron. This is the most common extinguisher and can be found just about anywhere. It is used for A, B, & C class fires.
- CO2 – This extinguisher is used for many types of fires. It works by replacing the oxygen with compressed carbon dioxide. It should be used for A & B fires.
- There are several types of Class “D” extinguishers. Most of them form a crust over the burning metal to remove the oxygen.
- Purple “K” extinguishers are not common to the household market but they use a dry chemical powder containing potassium bicarbonate.

Now that we know what is needed to create fires and what will put them out, let’s discuss how to use an extinguisher.

When the fire breaks out, it might only be a minute before it engulfs an entire room. So it is imperative to act quickly while keeping calm.

Once you’ve grabbed the extinguisher from its holder, there are a few steps to remember. Using the acronym P.A.S.S. will help you remember them. Standing approximately 6 feet away from the fire:

- pull the pin;
- aim the nozzle of the extinguisher;
- squeeze the handle; and
- sweep across the base of the fire.

.pps #8 - 12

Types of Extinguishers

PowerPoint #10, 11, 12 (pictures showing various fire extinguishers)

Pose question to the class:

“Why wouldn’t you want to use a pressurized water extinguisher on a class B or D fire?”

Answer: *Pressurized water would cause a class B fire to possibly splash and create a larger hazard area.*

It would cause a flare-up of a class D fire.

PowerPoint #13 - 14

Play two minute video “How to Use a Fire Extinguisher”

III. EVALUATION/CLOSURE

Review questions--

Time: 3 minutes

What are the four corners of the fire tetrahedron?

- oxygen
- heat
- fuel
- chemical reaction

What are the main classes of fires?

- A – ordinary combustibles
- B – oils, gasoline, grease
- C – electrical equipment
- D – flammable metals

List the types of extinguishers as explained in this lesson:

- pressurized water
- dry chemical
- CO2
- class D metal
- Purple K

What are the steps, in order, for using a fire extinguisher?

- Stand approximately six feet away from the fire.
- Pull the pin.
- Aim the nozzle at the base of the fire.
- Squeeze the handle.
- Sweep across the base of the fire.

Are there any questions?

Thank you for your time today.

Answer any questions students may have to assure them that this is a basic lesson.