Objectives

- Understand basic firefighting concepts:
  - R.A.C.E.
  - P.A.S.S.
- Know what to do if you find a fire
- Be able to correctly and safely select and use a fire extinguisher
How Does a Fire Work?

- Three components
- Need all three components to start a fire
- Fire extinguishers remove one or more of the components

Class A Ordinary Combustibles

- Trash
- Wood
- Cloth
- Paper
- Rubber
- Plastics
Class B Flammable Liquids

• Gasoline
• Oil
• Grease
• Tar
• Oil-based paint
• Lacquer
• Flammable gases

Class C Electrical

• Energized electrical equipment
Class D Combustible Metals

• Magnesium
• Sodium
• Potassium
• Titanium
• Zirconium
• Other flammable metals

Fire Extinguisher Types

PRESSURIZED WATER

• Class “A” fires only.
• 2.5 gal. water - approximately 1 minute discharge time
• Range 30 - 40 feet
Fire Extinguisher Types (cont.)

**CARBON DIOXIDE (CO₂)**

- Class “B” or “C” fires
- 2.5-100 lb. 8 - 30 seconds discharge time
- Range 3-8 ft.

**MULTIPURPOSE DRY CHEMICAL**

- Class “A”, “B”, or “C” fires
- 2.5-20 lb. dry chemical 8-25 seconds discharge time
- Range 5-20 ft.
Fire Extinguisher Types (cont.)

HALON

- Class “A”, “B”, or “C” fires
- 9-17 lb. Halon 1211 8-18 seconds discharge time
- Range 9-16 ft.
- Fumes toxic if inhaled
- Halon is no longer manufactured

Fire Extinguisher Types (cont.)

COMBUSTIBLE METAL

- Class “D” combustible metal fires only.
- 30 lb. pressurized dry powder optimized for specific combustible metal
- Range 6-8 ft.
- To activate, must first open nitrogen cylinder on back to pressurize body
### Extinguisher Types Summary

<table>
<thead>
<tr>
<th>Extinguisher Type</th>
<th>Works By</th>
<th>Effective Against</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressurized Water</td>
<td>Cooling</td>
<td>![Cooling Icon]</td>
</tr>
<tr>
<td>Carbon Dioxide</td>
<td>Smothering</td>
<td>![Smothering Icon]</td>
</tr>
<tr>
<td>Multipurpose Dry Chemical</td>
<td>Smothering</td>
<td>![Smothering Icon]</td>
</tr>
<tr>
<td>Combustible Metal</td>
<td>Smothering</td>
<td>![Metal Icon]</td>
</tr>
</tbody>
</table>

### Fire Extinguisher Anatomy

- Discharge Hose
- Discharge Nozzle
- Discharge Orifice
- Discharge Lever
- Discharge Locking Pin and Seal
- Carrying Handle
- Data Plate
- Body
- Pressure Gauge (not found on CO₂ extinguishers)
Fire Emergency Response Procedures

- **R**escue
- **A**larm
- **C**ontain
- **E**xtinguish

**Before you fight the fire**

- **Ensure** area is evacuated
- **Always** sound the alarm **regardless** of fire size
- **Know** locations of extinguishers in your area and how to use them
- **Know** department emergency procedures and evacuation routes
Criteria for fighting the fire

- Fire is *small* and *contained*
- You have safe egress (EXIT) route (can be reached *without* exposure to fire)
- Available extinguishers are rated for size and type of fire

When fighting the fire remember

- To keep an exit to your back
- When the fire extinguisher is empty - Get out!
- When you leave the building do not go back in!
When not to fight a fire when

- Fire has spread beyond its point of origin
- Your escape path is threatened
- The area is smoke filled
- Your instincts tell you GET OUT

How to Use a Fire Extinguisher
Fighting the Fire

**P**ull the pin

**A**im low at the base of flames

**S**queeze the handle

**S**weep side to side

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**P.A.S.S. Method**

**P**ull the pin

This will allow you to squeeze the handle in order to discharge the extinguisher.
P.A.S.S. Method

Aim at the base of the fire

Aiming at the middle will do no good. The agent will pass through the flames.

P.A.S.S. Method

Squeeze the handle

This will release the pressurized extinguishing agent.
P.A.S.S. Method

**Sweep** side to side

Cover the entire area that is on fire. Continue until fire is extinguished. Keep an eye on the area for re-lighting.

**Summary**

- Fire Triangle (Combustion Process)
- Class A, B, C, D, fires
- Types of portable fire extinguishers
- Basic firefighting concepts:
  - R.A.C.E.
  - P.A.S.S.
- Before you fight the fire
- Criteria for fighting the fire
- When not to fight a fire