

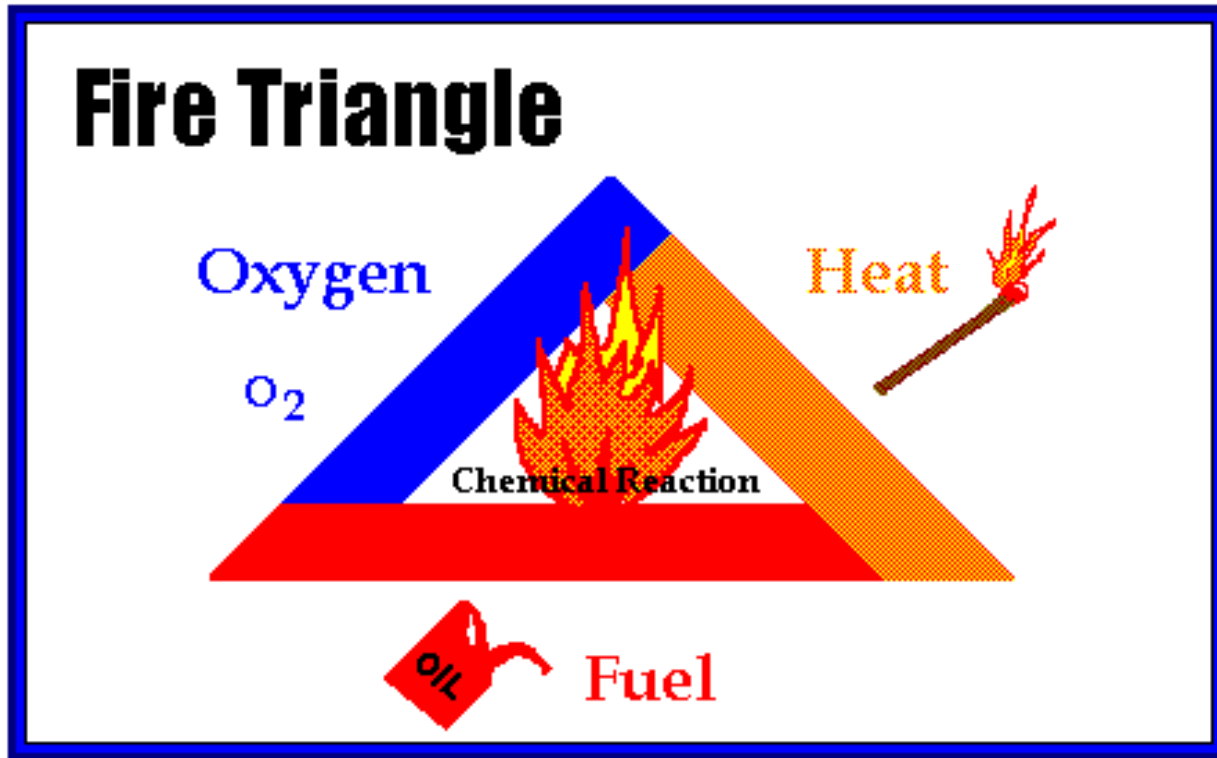


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Fire Safety and Fire Extinguisher Training



The Fire Triangle



Fire needs 3 things to burn:

- Oxygen
- Fuel
- Heat



The Fire Triangle

Fires need:

- Enough **Oxygen** to sustain combustion
- Enough **Heat** to reach ignition temperatures
- An amount of **Fuel** or combustible material

If you take away any one of these things, fires will not start or will be extinguished



Dangerous Locations

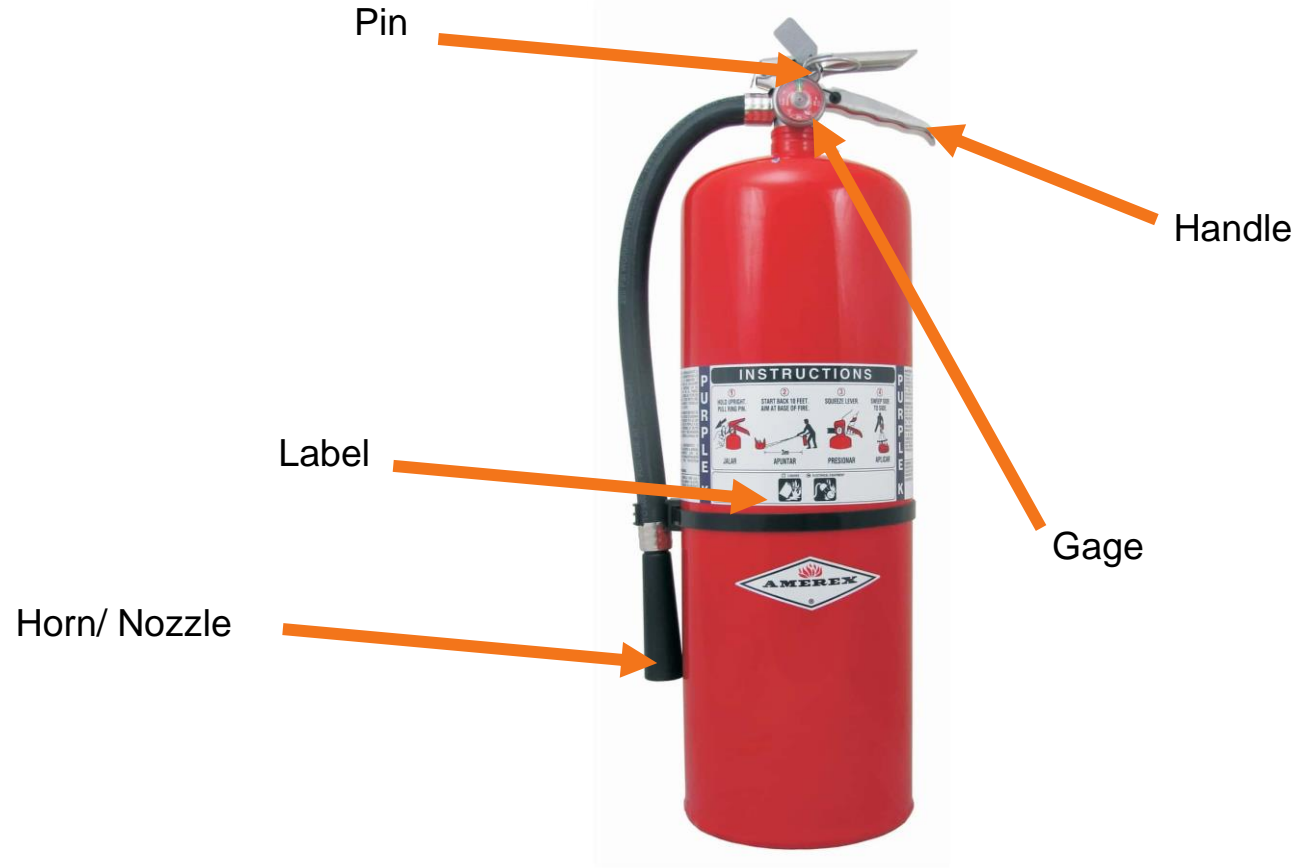
- OSHA and NEC divides industrial locations into 3 categories based on what is at the facility
 - Class 1 – flammable gasses and vapors (petroleum refinery, paint spray finishing areas)
 - Class 2 – airborne combustible dusts (grain elevators, flour mills)
 - Class 3 – airborne combustible fibers or filings (textile mills, lumber yards with sawdust)

It is important to know what is present at your facility to have the correct extinguishers in place



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Extinguisher





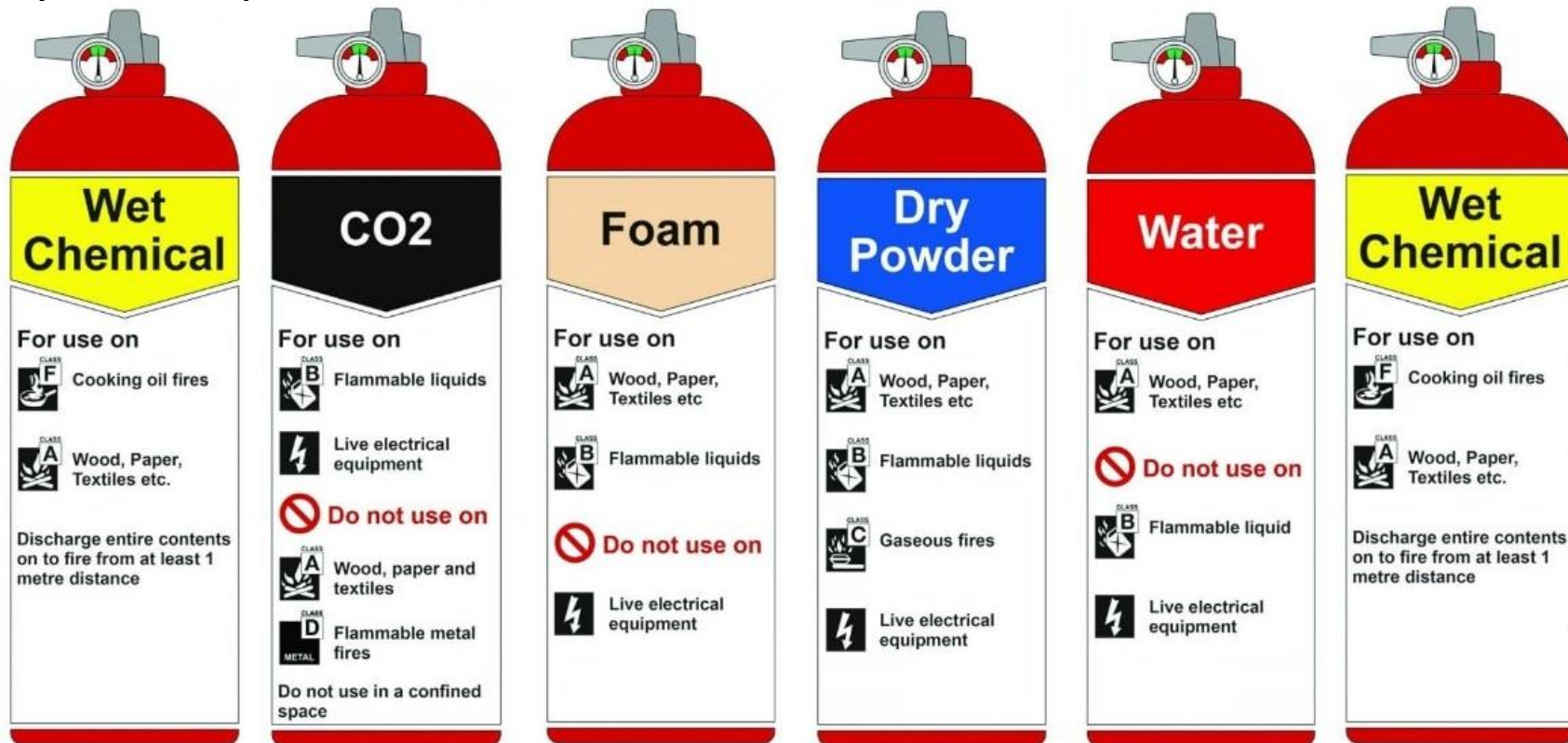
Fuel Type

- Fires are classified by the type of fuel or combustible material burning
 - Class A
 - Solids that are not metals (paper, wood, cloth, trash, plastics)
 - Class B
 - Flammable liquids (gas, oil, grease, acetone)
 - Class C
 - Electrical (energized electrical equipment)
 - Class D
 - Metals (lithium, potassium, sodium, aluminum)
 - Class K (or F)
 - Food grade combustible material (vegetable oil, animal grease, other cooking oils)



Fuel Type

- It is very important to know the type of fuel that is burning because extinguishers are made specifically for different materials





Extinguisher Classifications

Most extinguishers will tell you what type of fire they can be used for.





Knowledge Check 1

- The one below can be used for what types of fires?





Knowledge Check 1

- The extinguisher below can be used to extinguish A, B and C type fires





Extinguisher Types

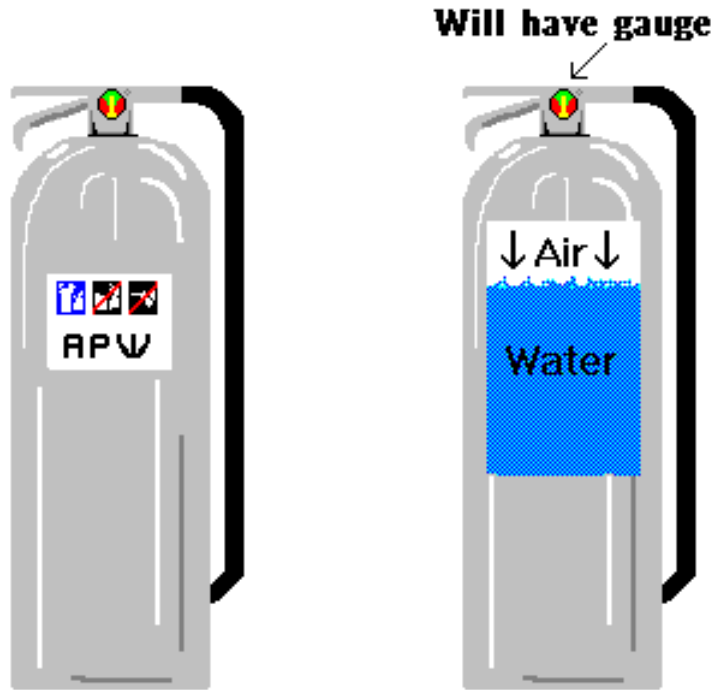
- The most common type of extinguishers are
 - Water
 - Carbon Dioxide (CO₂)
 - Dry Chemical
- But there are other kinds too!





Water Extinguishers

- Water extinguishers have pressurized water that will spray



Usually silver in color and roughly 25 lbs

Designed for **class A** fires only!

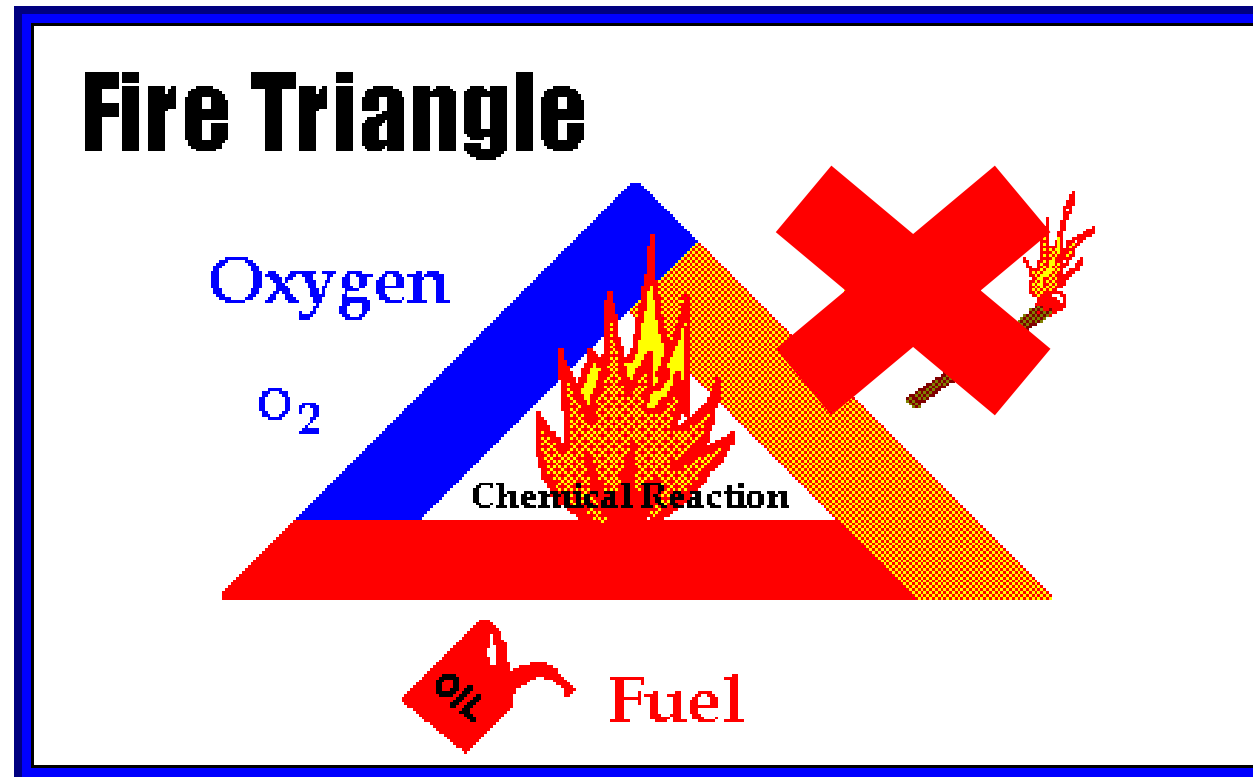
Do not use on oil fires of any kind!

Do not use on electrical fires!



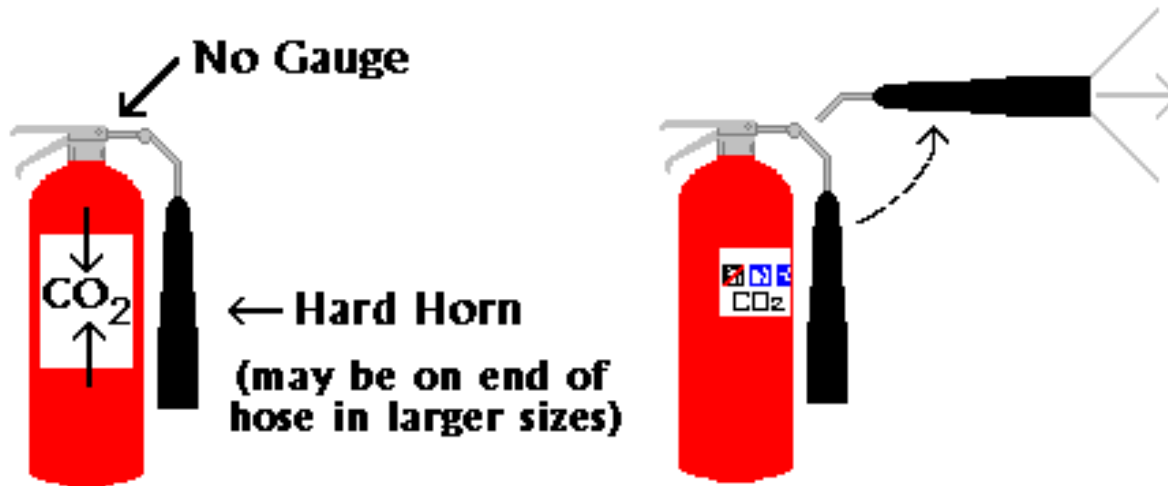
Water Extinguishers

- Water extinguishers work by removing the “heat” part of the fire triangle





Carbon Dioxide (CO₂)



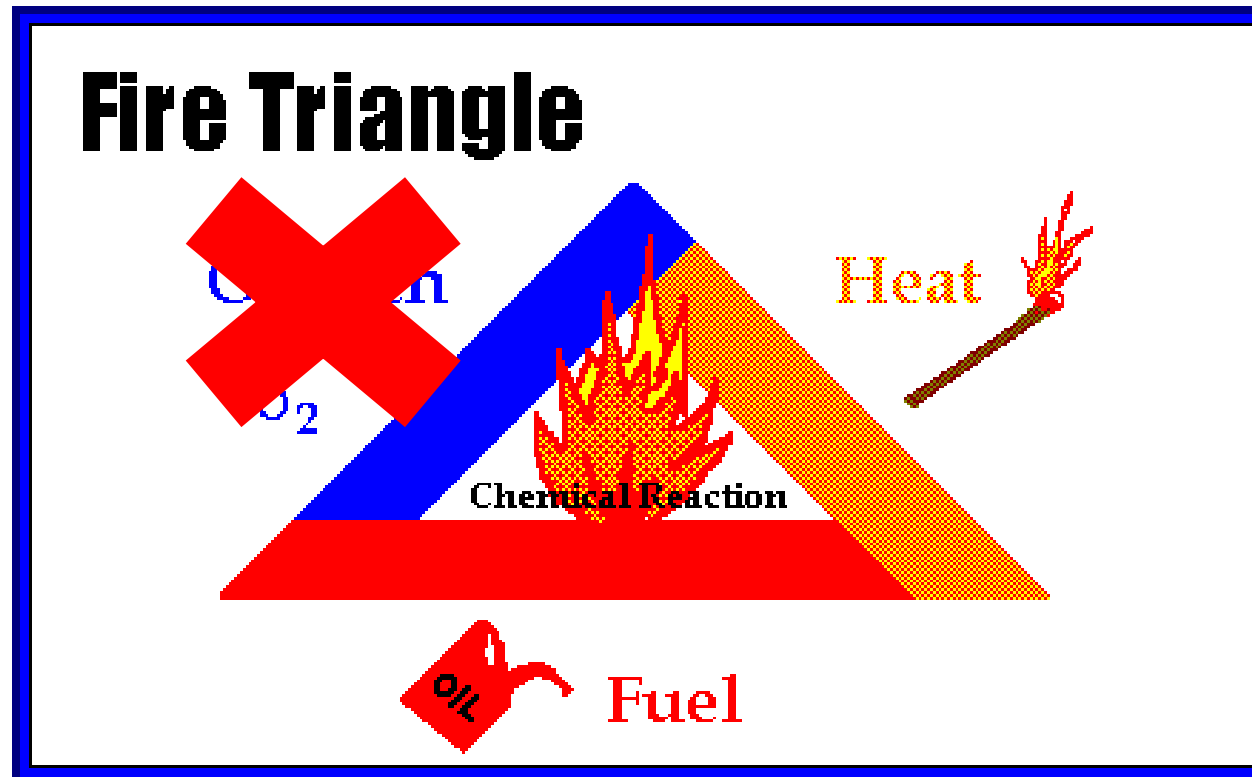
- Usually red in color and 5 to 100 lbs
- Sprays compressed CO₂
- The horn may be cold when in use

- Designed for **Class B and C** fires



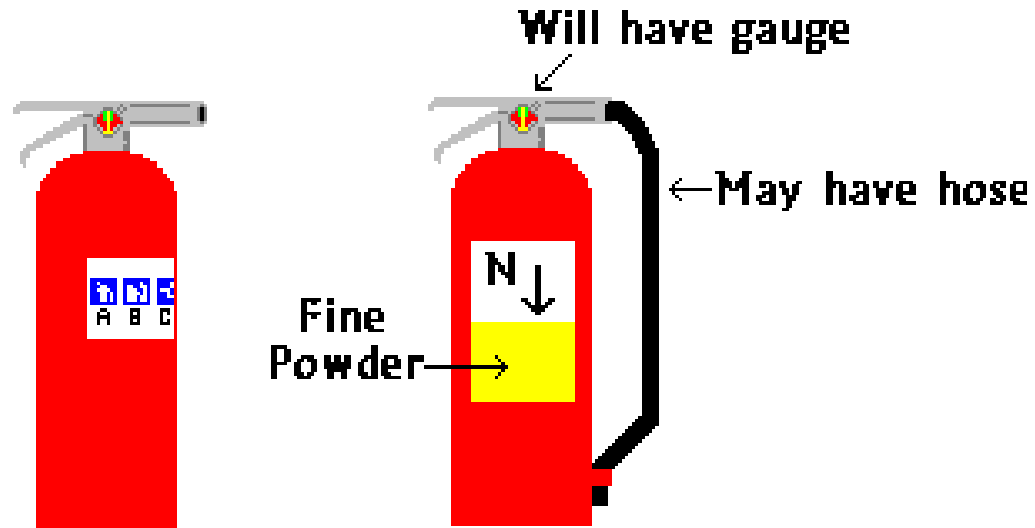
CO₂ Extinguishers

- CO₂ extinguishers work by removing the “oxygen” part of the fire triangle





Dry Chemical Fire Extinguishers

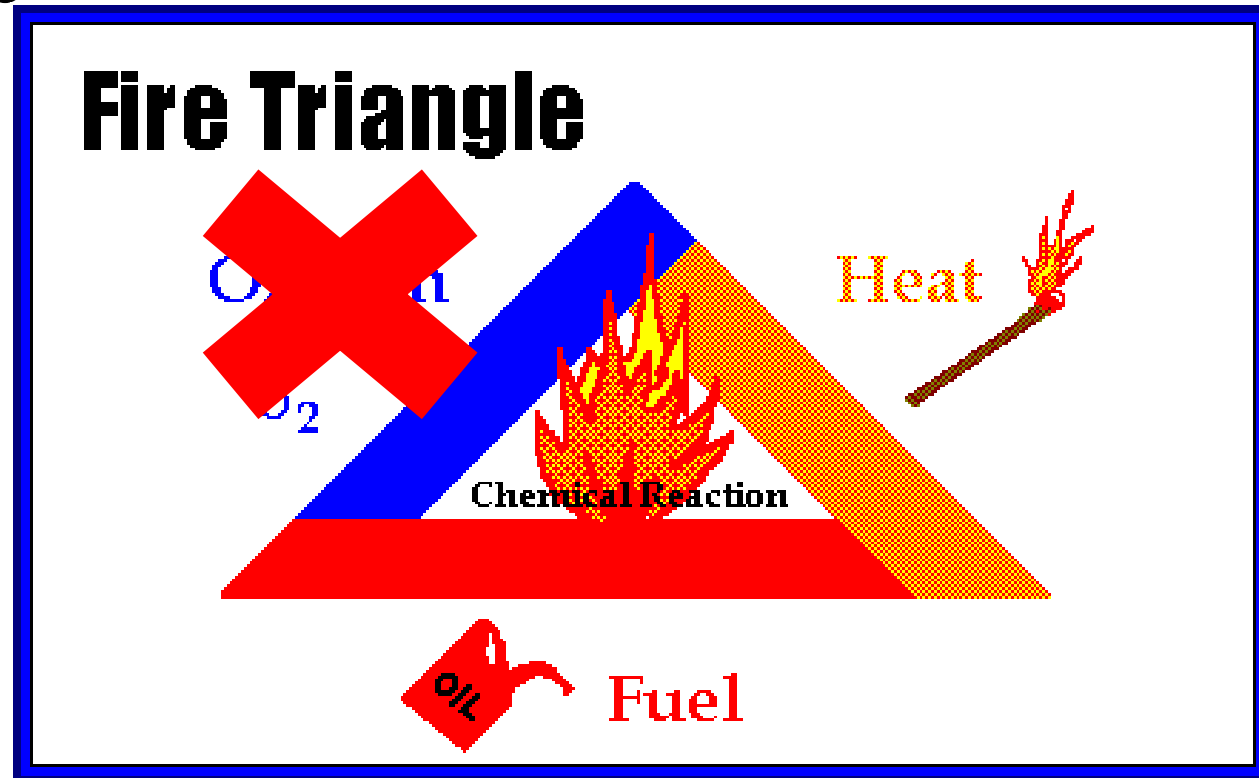


- Usually red in color and can range in size from 5 to 25 lbs
- Usually pressurized with Nitrogen with an inert fine powder
- Can be used on **class A, B and C** fires depending on the model
 - Sometimes ABC
 - Sometimes BC



Dry Chemical Extinguishers

Dry Chemical extinguishers work by removing the “oxygen” part of the fire triangle





Dry Chemical Class D Extinguisher

- Usually yellow in color
- Designed for Class D fires (metal fires)





Knowledge Check 2

- Dry chemical extinguishers work by removing what leg of the fire triangle?



Knowledge Check 2

- Dry chemical extinguishers work by coating everything in a fine dust, removing the oxygen part of the fire triangle



How to Use a Fire Extinguisher

Remember to **PASS!**

- **Pull** the pin
- **Aim** the nozzle
- **Squeeze** the handle
- **Sweep** the base of the fire





PASS!

- **Pull** the pin
- The pin is in there to prevent the extinguisher from accidentally going off under normal circumstances





PASS!

- **Aim** the nozzle
- Aim the nozzle or horn at the base of the fire





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PASS!

- **Squeeze** the handle





PASS!

- **Sweep** from side to side
- Sweep the nozzle from side to side to get the whole base of the fire





Rules for Fighting Fires

- Fires can be extremely dangerous! When preparing to fight a fire be sure not to endanger yourself or others in the process
- No matter the size of the fire:
 - Assist people who may be in immediate danger if you are able to do so without endangering yourself
 - Call emergency services (911) and activate the building fire alarm



Rules for Fighting Fires

- If you have done the items on the following slide, and the fire is small you can use an extinguisher but keep these things in mind:
- Is the fire spreading too quickly?
 - If the fire is spreading rapidly, you might not have enough time to fight it, best to evacuate
- You have to know what's burning
 - Don't use a BC extinguisher on a A fire
 - Even if you have the right extinguisher, what's burning might produce toxic fumes or even explode

If you don't have the right equipment or the fire is spreading too fast then just evacuate! Your life is the most important thing! Remember, if you are uncomfortable with the situation, it's better to be safe than sorry



Rules for Fighting Fires

The most important rule you need to remember if you choose to fight a fire is to always position yourself so that you can make an exit if needed. Don't back yourself into a corner!



End of Show