

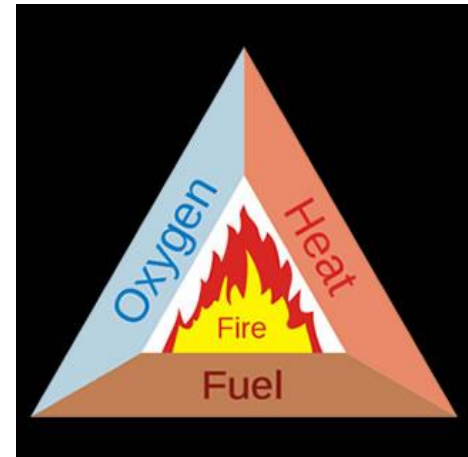


Level 2 Award in Principles of Fire Safety

How fires are caused

Fires start when three things come together in the right amount at the same time. These three things are:

- A source of **fuel** (something that will burn)
- A source of **heat** (or ignition)
- **Oxygen** (present in the air around us)



These three things are known as the '**fire triangle**'.

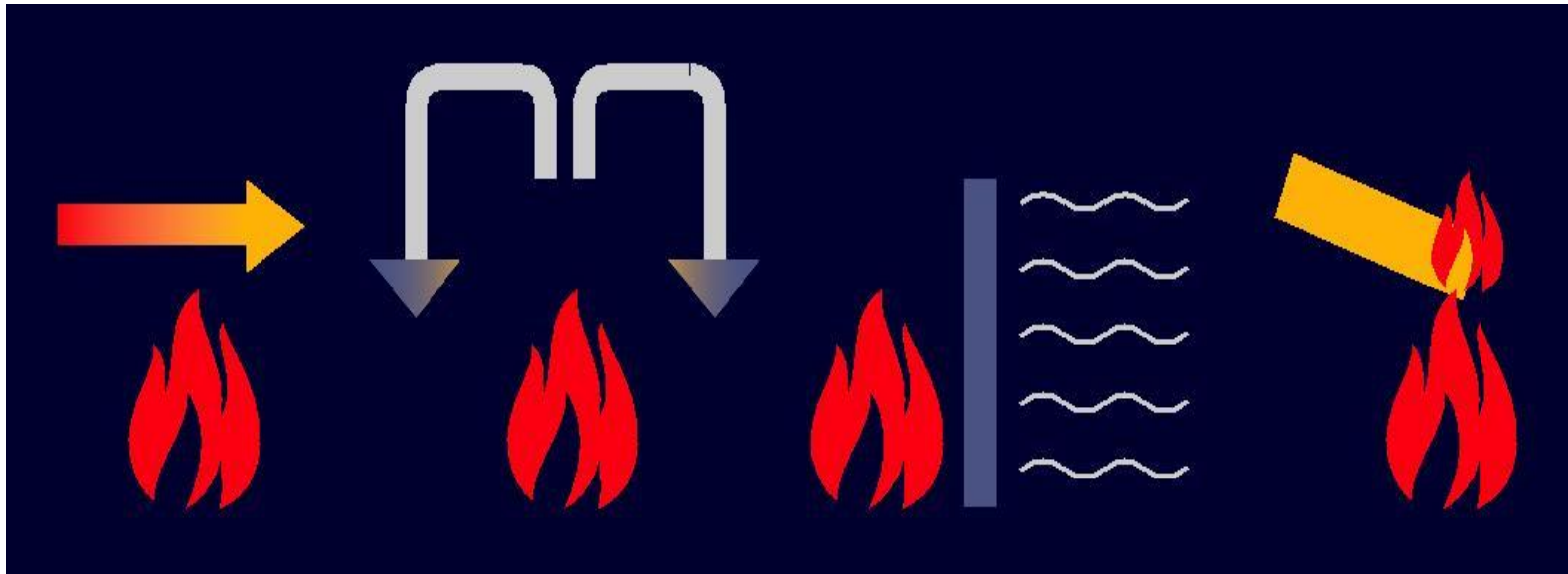
How fires are caused

Common workplace sources of the elements of the fire triangle

Sources of fuel	Sources of heat	Sources of oxygen
<ul style="list-style-type: none">• Flammable liquids• Plastics and foam• Wood and paper• Waste materials• Textiles/furnishings• Flammable gases	<ul style="list-style-type: none">• Faulty equipment• Cigarettes and matches• Naked flames• Electric heaters• Hot processes• Cooking equipment• Machinery	<ul style="list-style-type: none">• Air• Oxidising chemicals• Oxygen supplies• Air conditioning• Open windows

How fires spread

There are four ways by which fire (and heat and smoke) spread.



Radiation

Convection

Conduction

Direct contact

Detection, alarm and means of escape

Requirements for a means of escape

Two escape routes where possible

Routes kept free from obstruction

Escape routes fire-protected

Self-closing fire doors

Provision of emergency lighting
may be necessary

Safe distance from building

Not obstructing emergency services

Clearly signed

Responsible person in charge

More than one assembly point
may be required

Fire-fighting equipment

Class	Type of fuel	Suitable extinguisher
A	Solid fuels such as wood and paper	Water, foam, dry powder
B	Flammable liquids such as petrol and solvents	Foam, CO ₂ , dry powder
C	Flammable gases such as propane and butane	Dry powder
D	Flammable metals such as sodium and magnesium	Dry powder (special type)
F	Fires involving cooking fats and oils	Wet chemical
Not classified	Fires involving electrical equipment	CO ₂ , dry powder

Fire risk assessments

There are five steps to a fire risk assessment:

- Step 1** Identify the fire hazards
- Step 2** Identify people at risk
- Step 3** Evaluate, remove or reduce the risks
- Step 4** Record your findings, prepare an emergency plan and provide training
- Step 5** Review and update the fire risk assessment regularly

Fire risk assessments

Step 3 Evaluate, remove or reduce the risks

How good are our fire prevention measures?

Do we control all sources of fuel and ignition by:

- Good housekeeping
- Proper storage of flammable material
- Good maintenance of machinery
- Good supervision of hot work
- Controlling smoking
- Training the workforce in fire prevention

Fire risk assessments

Step 3 Evaluate, remove or reduce the risks

How comprehensive are our fire precautions?

Do we have:

- A clear escape route(s)
- Identified fire exits
- Self-closing fire doors
- Emergency lighting and adequate signage
- Suitable fire fighting equipment
- A detection and alarm system
- An evacuation plan and assembly point