ELEMENTS OF FIRE AND THE FIRE TRIANGLE

For this assignment, we will examine the **elements of fire** and **the fire triangle.** The main **elements of fire** are heat, oxygen, and fuel. All three elements must be present for combustion to take place. Fuel contains the energy released during combustion while heat and oxygen helps to maintain combustion. These three elements make up **the fire triangle.** During combustion, the reactions produce heat as the fuel burns. Depending on the type of fire, various elements can help to cool the heat. There are many materials that serve as fuel, such as wood, oil, and paper. Combinations of fuels result in varying **phases of combustion** because different materials burn differently.

Read more of the elements of fire and the fire triangle at <https://www.fireaction.co.uk/news/fire-triangle-explained/>

THE FIRE TRIANGLE AND THE PHASES OF COMBUSTION

There are four **phases of combustion.** They include pre-ignition, flaming, smoldering, and glowing. The ability to control fires depends on experts’ understanding on the **phases of combustion,** their interactions and relative importance on each fire. This includes comparing the **elements of fire** and the fire behavior. During pre-ignition, heat on fuels causes the release of water and organic gases. This gives way to the flaming phase, where flames consume fuels. Major products during this phase are water, carbon dioxide and visible smoke particulates. During smoldering, **the fire triangle** begins to break apart, with the exhaustion of fuels and transfer of heat into the surrounding. Visible smoke is the primary product. Carbon dioxide and carbon monoxide are the primary products of the glowing phase.

Read more on the fire triangle and the phases of combustion at <https://www.fdacs.gov/content/download/39685/file/PFT_Chapter%2007%20Fire%20Behavior.pdf>

COMBUSTION AND THE CLASSES OF FIRE

Apart from the **phases of combustion,** there are different classes of fire as well. The classes depend on the type of fuel (combustible or flammable). Class A fires usually involve organic solids such as paper and wood. Class B fires involve flammable liquids. Fuels are the largest variable in **the fire triangle**. Some fires involve more than one type of fuel. Class C fires typically involve flammable gases, while class D fires involve metals. Cooking oils form the fuel part of class F fires. As combustion occurs, the **elements of fire** change in amounts, and eventually, the fire dies. This occurs after consumption or removal of fuels, removal of oxygen, temperature reduction, and breaking the chain reaction.

Read more on combustion and the classes of fire at <https://www.firesafe.org.uk/information-about-the-fire-triangletetrahedron-and-combustion/>