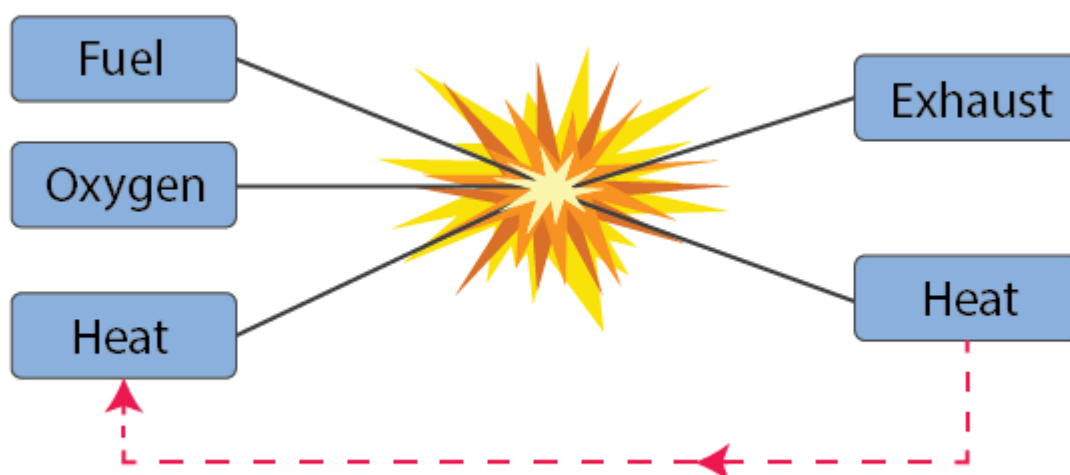


**Combustion**

- A chemical process in which a substance reacts with oxygen to give off heat and light is called combustion.
- The burning of wood is an example of combustion.



There are various types of combustions such as:

**Rapid Combustion:** A combustion, that takes place rapidly/high speed, with the production of heat and light is called rapid combustion.

**Spontaneous Combustion:** A combustion in which a material suddenly bursts into flames, without the application of any apparent cause is called spontaneous combustion.

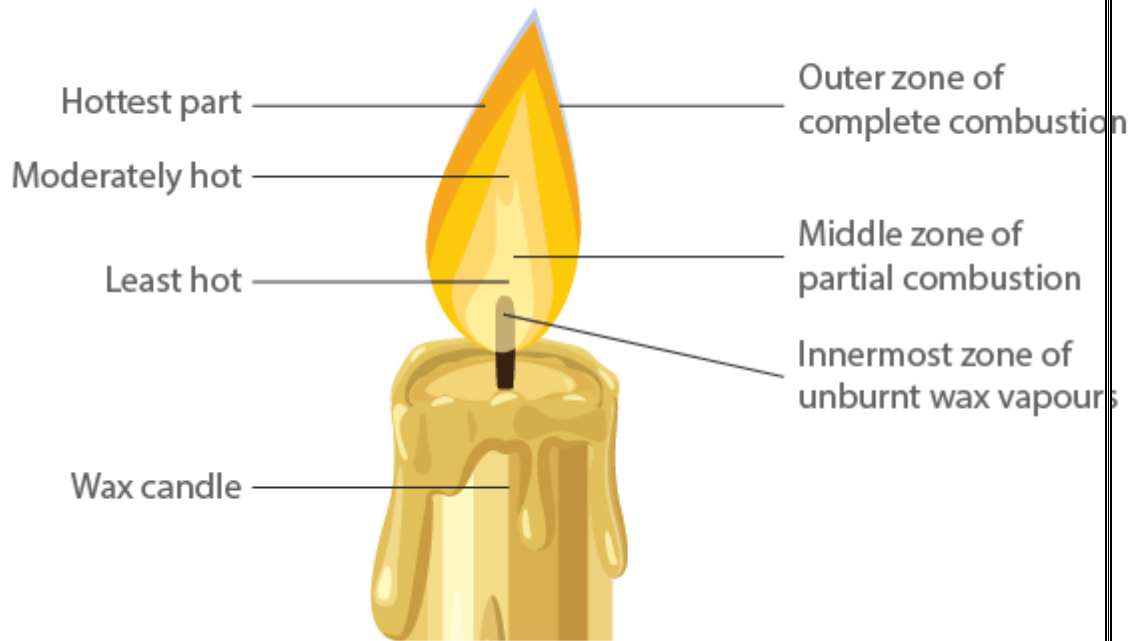
**Explosion:** The process of combustion in which a large number of gases are evolved with the production of a tremendous amount of heat, light and sound is called an explosion.

**Flame**

- Flame is the visible and gaseous part of the fire.

- What we see as the flame is the light energy released due to the combustion of fuel.

### Zones of Candle Flame



**Structure of a flame:** A flame has three zones, the outermost thin transparent faint bluish non-luminous region of complete combustion, the middle bright luminous zone of partial combustion, while the innermost is the coldest dark zone, which consists of hot vapours.

Fuel is a substance, which may be burnt to produce considerable heat without the formation of undesirable products.

**Ideal Fuel:** The fuel, which fulfils all the requirements for a particular use is called an ideal fuel.

The amount of heat energy produced on complete combustion of 1 kg of a fuel is called its calorific value. It is expressed in a unit called kilojoule per kg (kJ/kg). Unburnt Carbon particles in the air are dangerous pollutants causing respiratory problems. Incomplete combustion of fuel gives poisonous carbon monoxide gas.

**Acid Rain:** When the pollutants like sulphur dioxide and nitrogen oxides dissolve in rainwater, it forms an acid. The rain of that acid is called acid rain.

**Calorific Value:** The amount of heat energy produced on complete combustion of 1 kg of a fuel is called its calorific value. It is expressed in a unit called kilojoule per kg (kJ/kg).

**Combustion:** A chemical process in which a substance reacts with oxygen to give off heat is called combustion.

**Deforestation:** It is the process of cutting of trees on a large scale.

**Explosion:** The process of combustion in which a large number of gases are evolved with the production of a tremendous amount of heat, light and sound, is called an explosion.

**Fuels:** A fuel is a substance, which may be burnt to produce considerable heat without the formation of undesirable products.

**Fuel Efficiency:** Fuel efficiency is expressed in terms of its calorific value which is the amount of heat energy produced on complete combustion of 1 kg of fuel.

**Global Warming:** It is the rise in temperature of the atmosphere of the earth due to the combustion of fuels.

**Ideal Fuel:** The fuel, which fulfils all the requirement for a particular use is called an ideal fuel.

**Ignition Temperature:** The lowest temperature at which a substance catches fire is called its ignition temperature.

**Inflammable Substance:** The substances, which have very low ignition temperature and can easily catch fire with a flame are called Inflammable substances.

