



# Fossil Fuels

# Fuels

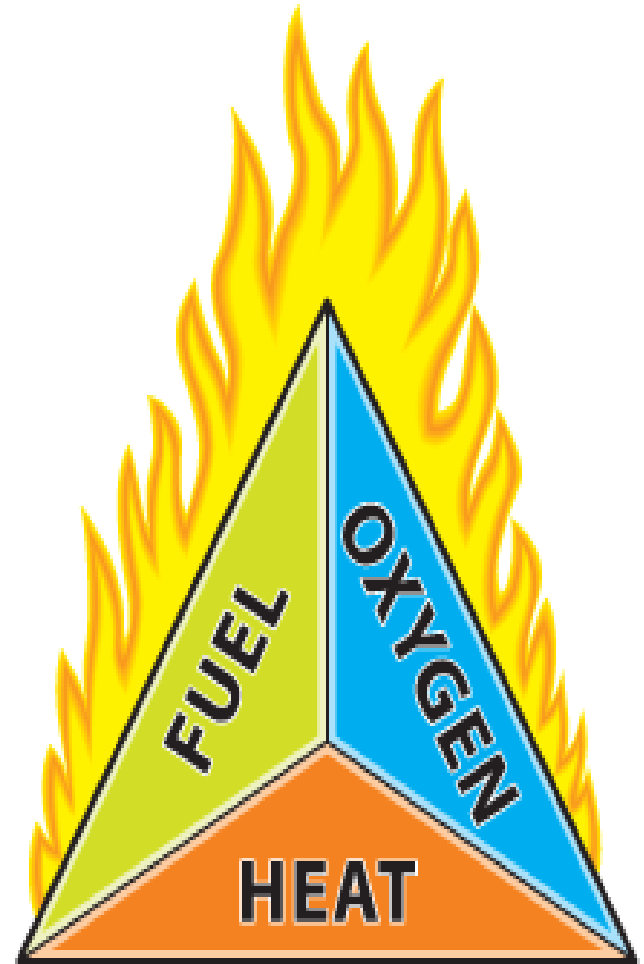
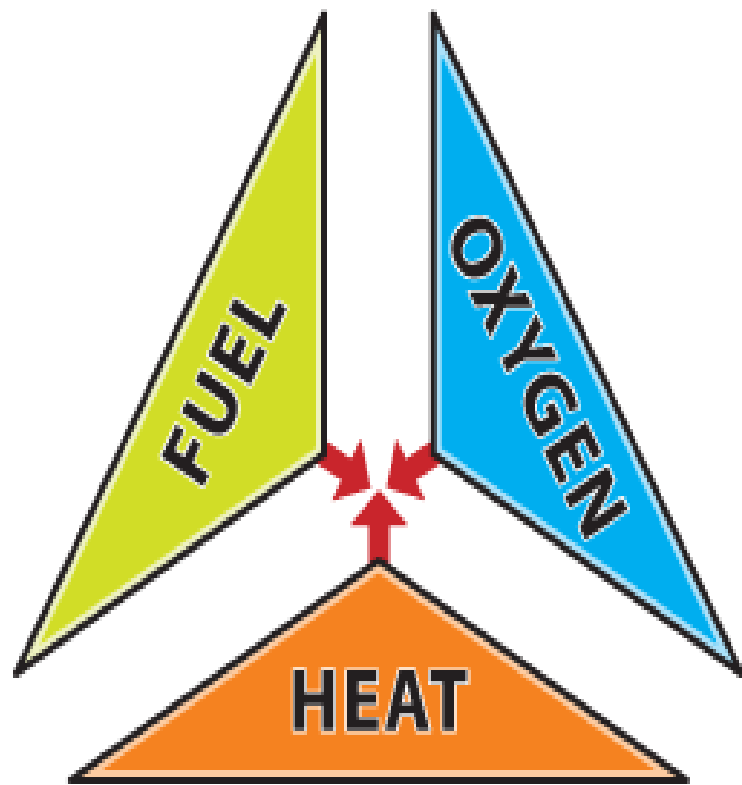
- A fuel is something that releases heat when its burned in oxygen

3 conditions for a fire:

1. Fuel
2. Heat
3. Oxygen

# Putting out a fire

- Using a fire extinguisher made of Carbon Dioxide will put out the flame
- Pouring water over the fire
- Using a fire blanket

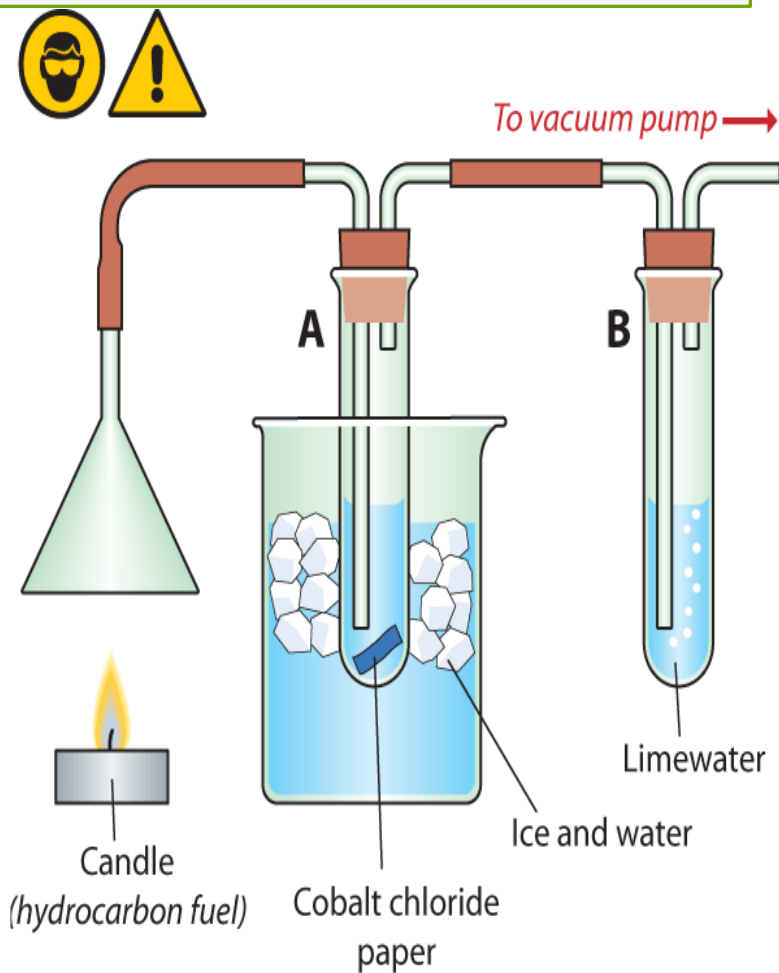


▲ Fig 25.2 Fire triangle

# Fossil Fuels

- Fossil fuels are made from the remains of dead plants and animals
- They are also called **Hydrocarbons** as they contain the Hydrogen and Carbon
- When a hydrocarbon is burned it releases carbon dioxide and water vapour

- The candle will release carbon dioxide and water vapour when burned
- The cobalt chloride paper will turn \_\_\_\_\_
- The lime water will turn \_\_\_\_\_



▲ Fig 25.4 Examining the products of the combustion of a hydrocarbon

# Renewable v Non-Renewable

## Non-Renewable Fuels (Fossil fuels)

- Coal
- Oil
- Turf

## Renewable Fuels:

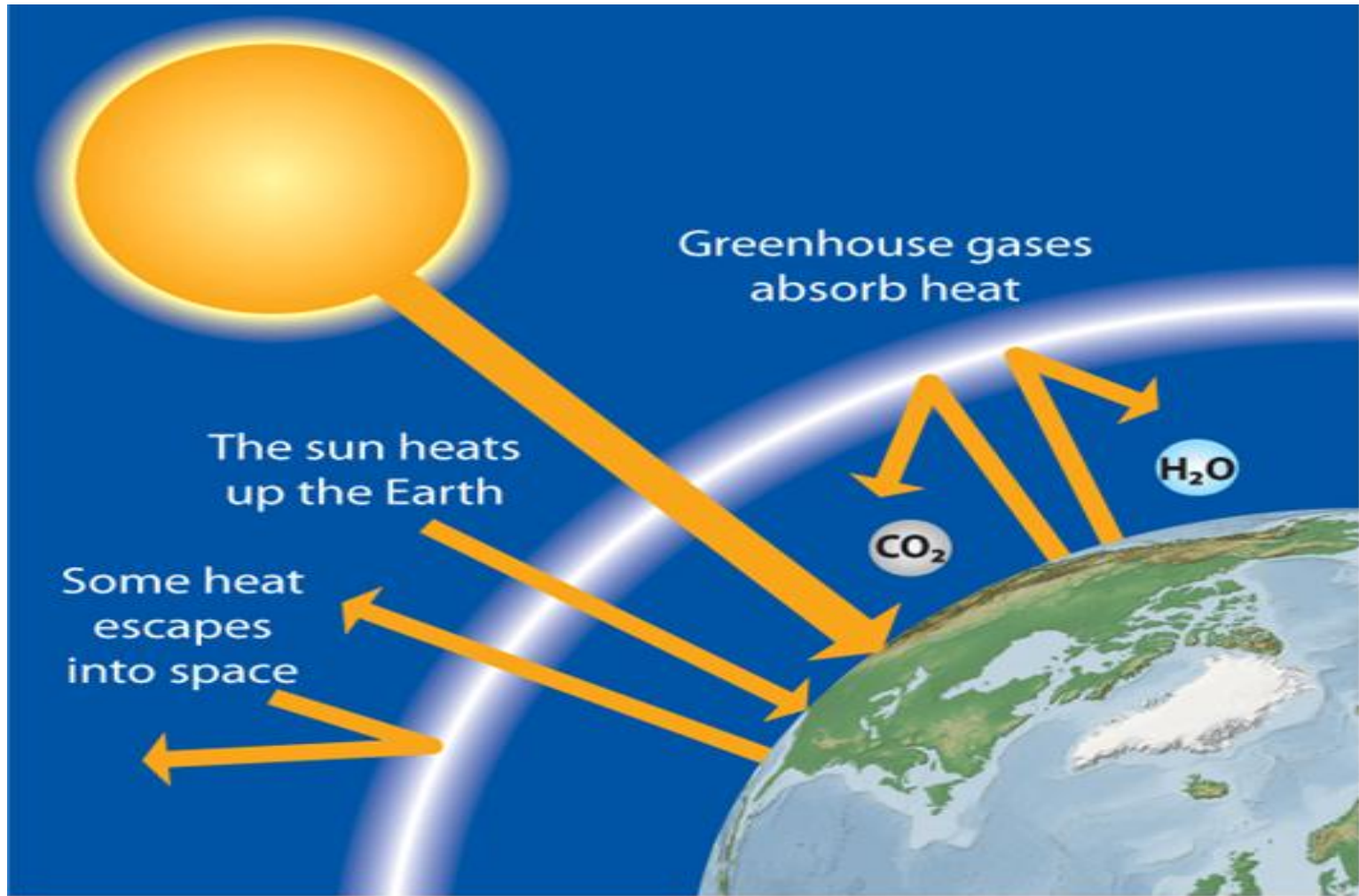
- Wind
- Solar
- Hydro (water)

# Greenhouse Gases

- Carbon Dioxide – fuels burning
- Methane – cows farting (natural gas)
- Water Vapour – fuels burning



- Greenhouse gases are released and rise upwards
- They sun rays can penetrate through them to reach the earth
- They sun rays cant get back out though
- And so get trapped
- They cause the earth to heat up



▲ Fig 25.5 How carbon dioxide affects the atmospheric temperature

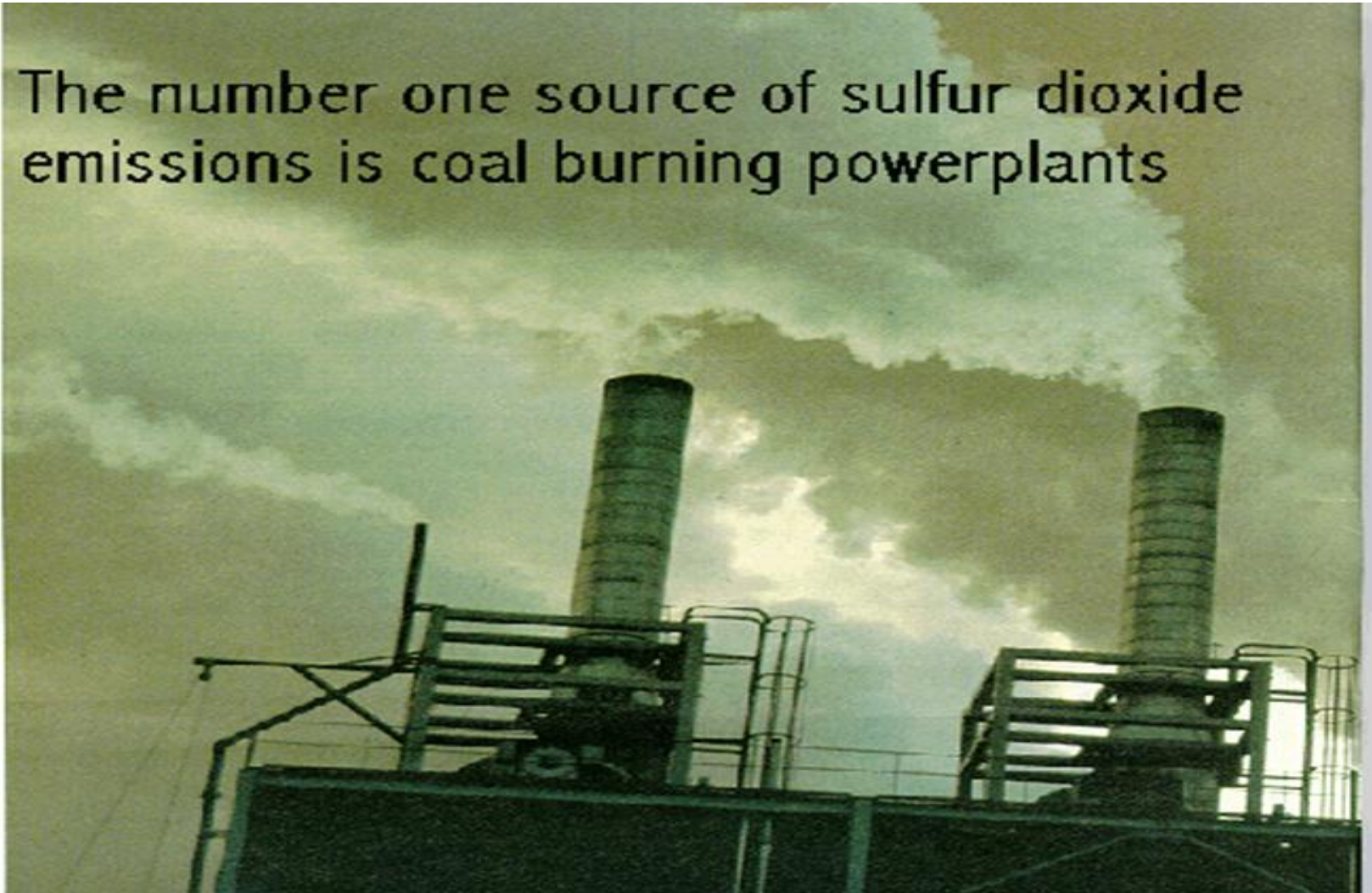
# Global Warming

- The greenhouse effect cause the earth to heat up
- This causes the ice caps to melt, which causes the sea levels to rise and can lead to flooding

# Acid Rain

- Many fossil fuels contain Sulphur
- When they are burned they release Sulphur Dioxide
- Sulphur Dioxide mixes with rainclouds and makes Sulphuric Acid
- Sulphuric Acid falls as acid rain

The number one source of sulfur dioxide emissions is coal burning powerplants



# Problems of acid rain

- Building and statues erode over time. Those made of limestone erode much quicker
- Acid rain cause leaching (minerals being washed out of the soil). As a result trees can die from lack of nutrients
- Acid rain causes poisonous minerals eg mercury to be washed out of the soil and into rivers and lakes, where fish can die

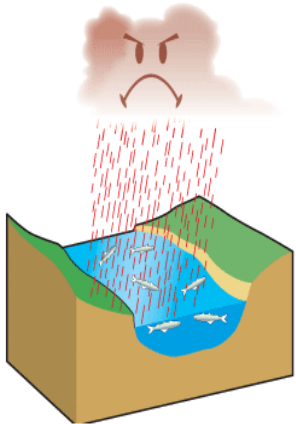




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Attacks buildings and statues (especially limestone), causing them to erode (wear away)



Causes minerals like aluminium to be washed into lakes where they poison fish

Problems of acid rain



Harms trees by damaging the foliage and by washing important minerals from the soil

▲ Fig 25.8 Problems caused by acid rain

# Reducing the effect of acid rain

- Use renewable sources of fuel
- Fitting sulphur scrubbers onto factory chimneys

# Smog

- Smoke is produced when petrol and coal are not burned fully
- Smog is when smoke and fog mix together
- Smog reduces visibility and causes breathing problems
- Smokeless fuels can only be used in towns and cities