

**Diamond 9 activity:**

- Cut out the following images showing the different types of pollution and arrange them into a diamond 9 according to how dangerous you think they are.
- Remember the pollution you think is the most dangerous should be at the top.



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## Information gathering task:

Name of pollutant	Effects on humans	Effects on a local area	Effects on the planet

## Fact sheet: Carbon dioxide

Carbon dioxide is a gas that exists in Earth's atmosphere in this state. Carbon dioxide is produced by plants and other living creatures which produce it during respiration. Carbon dioxide is also produced by burning coal or fossil fuels and the fermentation of sugars in beer and winemaking. It is exhaled in the breath of humans and land animals. It is released from volcanoes, hot springs, geysers and other places where the earth's crust is thin.

The environmental effects of carbon dioxide are particularly dangerous. Carbon dioxide is an important greenhouse gas, absorbing heat radiation from Earth's surface which otherwise would have left the atmosphere. Burning of carbon-based fuels since the Industrial Revolution has rapidly increased the amount of atmospheric carbon dioxide, increasing the rate of global warming and causing climate change.

## Fact sheet: Methane

Methane is a common gas used for fuel. It is the main constituent found within natural gas that can be extracted from the earth. It has a very distinct smell to it, and is often thought of as cow gas. There is a vast supply of methane around the world making it a viable fuel for the future.

Methane is commonly burned in the UK's gas fired power stations and produces much of the electrical power we use today. Liquid methane is also used as a highly combustible rocket fuel.

## Fact sheet: Ozone

Ozone is a powerful and highly reactive gas and has many industrial and consumer applications related to corrosion. This characteristic of ozone (above concentrations of about 100 ppb) can cause damage to mucus and respiratory tissues in animals, and also tissues in plants. This makes ozone a dangerous respiratory hazard and pollutant near ground level.

The so-called ozone layer is beneficial, preventing damaging ultraviolet light from reaching the Earth's surface, to the benefit of both plants and animals. A breakdown in the amount of high atmospheric ozone leads to more UV radiation entering the atmosphere which can cause issues.

## Fact sheet: CFCs

CFCs are made up of chlorofluorocarbons which are commonly used in the manufacture of fridges and freezers. It has severe effects of the environment causing many breathing problems if inhaled but also because it dramatically reduces the amount of ozone in the upper atmosphere. Ultimately letting in more UV radiation into the atmosphere.

## Fact sheet: Nitrous oxide

Nitrous oxide, commonly known as laughing gas, is an oxide of nitrogen. At room temperature it is a colourless, non-flammable gas, with a slightly sweet odour and taste.

It is used in surgery and dentistry for its anaesthetic effects. It is also used as a fuel in rockets and in motor racing to increase the power output of engines. Nitrous oxide is also a major greenhouse gas and air pollutant due to its ability to trap heat.