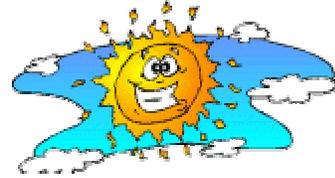


# Air Quality



You need to breathe to stay alive. But how clean is the air you breathe? If you breathe dirty air, you are more likely to develop health problems and become ill. Plants and animals need clean air too. A lot of the things that make our lives more comfortable such as cars, electricity and heating, create bad gases which make the air dirty. The problem of air pollution started with the burning of coal in homes and factories.

Dirty air is called 'polluted air'.

'Air pollution' is what we say to describe all bad gases in the air that we breathe and that are dangerous for us.

But do not worry! Not all gases are bad!

## WHY IS BREATHING SO IMPORTANT?



Take a few deep breaths. Can you feel your rib cage moving in and out? This opens up your lungs so that air is sucked in.

In the lungs, a gas called oxygen passes from the air into your blood. The oxygen is carried in the blood all round your body. You need oxygen so that you can use the energy in the food you eat. It is the oxygen in the air that helps keep you alive.

## BACK TO THE PAST



500 years ago in Britain, the burning of coal was increasing in cities like London. Coal was used in factories and also used to heat homes.

Coal, when burnt makes a lot of smoke, which makes the air very dirty.

About 200 years ago, the **Industrial Revolution** began in Britain. Factories were built, and even more coal was burnt. Air pollution was becoming a really big problem, especially when the weather was foggy. With foggy conditions and light winds the smoke or air pollution covered the whole city, and would not move.



Smoke and fog together create **smog**.

Smog was a big problem in the winter. Because

of the cold weather, more coal was burnt to warm houses and this made more smoke.



When smog was stuck over a city, it became really hard to breathe and see clearly. In 1952, the **Great London Smog** occurred and more than 4000 people died because of the smog!

New laws were created from this catastrophe in 1956 and 1968, so that it would not happen again. These laws are called the '**Clean Air Acts**'.



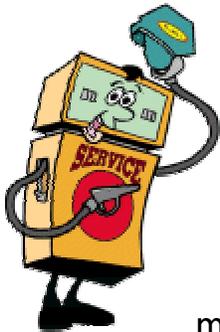
These laws were made so that air would become cleaner. The laws encouraged people to use less coal or use cleaner coal in their homes and switch to other fuels such as gas. Factories started using tall chimneys so that the smoke would go high up in the sky and no longer cover cities, and new factories were built outside cities in the countryside. Smog occurred less often and the air became cleaner.

## WHAT IS TODAY'S AIR POLLUTION LIKE?



Have you ever noticed that the air in a city smells different from air in the country? One of the reasons is that exhausts from vehicles give off fumes, or gases, which can poison you.

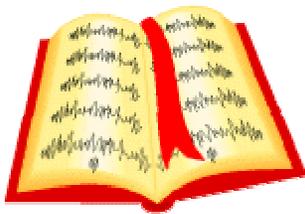
Today, when we think of air pollution, we should think of transport, especially cars. Today there are about 23 million vehicles on the road in Britain, and 20 million of them are cars! The fuel they use – petrol and diesel –



releases a lot of pollution in the air.

The car exhausts eject a lot of bad gases, which create air pollution. These gases can be very dangerous for children. Although the fuels are becoming cleaner, it will not be making that much difference because there are more and more cars.

There is less pollution from coal, but today's modern world still creates air pollution. Today, air pollution has not really fallen, because new bad gases are released in the air, and there are a lot of them.



Transport is not the only reason why we have air pollution. Factories also release bad gases in the air, even with the 'Clean Air Acts', it still causes a lot of air pollution. This air pollution that they make is the main cause of acid rain (see [Acid Rain](#)).

## WHAT ARE THESE BAD GASES?



### Gases from vehicles:

#### - *Carbon monoxide*

Carbon monoxide is a gas that pollutes the air, and is mainly released by cars and other vehicles. It has no colour or smell.

#### - *Nitrogen oxides*

Nitrogen oxides are emitted from vehicles, like cars and trucks. During rush hour periods, a lot more is released in the air. Nitrogen oxides are also emitted from power stations. These gases also make acid rain.

#### - *Hydrocarbons*

Hydrocarbons are produced when petrol is not fully burnt. They are one of the causes of modern-day smog.

#### - *Particulates*

Particulates are very small particles, like soot, dust and fumes that are released in the air. They are caused by vehicles, factories and smoke from homes burning coal for heating.



### Gases from factories:

#### - *Nitrogen Oxides (see above)*

#### - *Sulphur dioxide*

Sulphur dioxide has no colour. Most of it is released by power stations. It causes acid rain when mixing with water in the air.

## AIR POLLUTION INSIDE HOMES

We spend a large part of our lives at home and it does not often cross our mind that the air we are breathing may be polluted. Pollution inside homes is called 'indoor air pollution'.



Indoor air pollution is usually very low. But a lot of things can increase it.

Fresh paint is a cause of indoor air pollution and so is the burning of fuels such as coal and gas, in heaters, stoves and ovens.

But one of the main causes of indoor air pollution is smoking. Smoking cigarettes and tobacco can be very dangerous for health. The poison in the smoke can cause heart problems, lung cancer and other lung diseases.

If a woman smokes when she is pregnant, her baby will probably be smaller and become ill. Cigarette smoke is dangerous for people smoking but also for those who do not! Breathing in air, which contains other people's smoke, can cause you the same health problems, for example lung cancer.



To reduce 'indoor air pollution', make sure the room is well ventilated while painting. Try ventilating your home often, you can open windows or use a fan. And if your parents or friends smoke, ask them to smoke outside. And best of all **NEVER START SMOKING!!!**