

# Our mission against emissions

## Activity 1 - Harmful particles in the air

Your mission, if you choose to accept it, is to find out what exactly makes the air polluted in our cities. In the previous edition, we looked at the two emissions below which pollute our air.

NO<sub>x</sub> (oxides of nitrogen) is one of the main emissions contributing to the increase of air pollution. Another pollutant that you may have heard of before is CO<sub>2</sub> or carbon dioxide.

**NO<sub>x</sub>** = Oxides of Nitrogen

**CO<sub>2</sub>** = Carbon Dioxide

As a recap, can you remember some of the culprits behind harmful emissions and how it might affect us?

The causes of harmful emissions: \_\_\_\_\_

How it can affect us: \_\_\_\_\_

### Time to investigate

Read the passage and answer the following questions.

#### Air quality and our health

When in the atmosphere and the air we breathe, gases called NO<sub>x</sub> (Oxides of Nitrogen) react with other chemicals in the air to create smog and tiny particulate matter (PM 2.5). Likewise, when sulfur (which comes from crude oil used in vehicles) combines with other chemicals in the air, it can create smog and contribute to acid rain.

The health problems these pollutants can lead to include irritation and inflammation of the respiratory system, asthma and reduced immunity, colds and the flu, as well as a range of other outcomes.

*Source: RAC Social & Community Impact Report 2020/21, page 20*



**For the better**

1. Name some of the gases that affect the health of the air around us?

---

---

2. What are some of the health problems people can have if they breathe in too much polluted air over time?

---

---

3. Where can sulfur come from?

---

---

4. How does it make you feel to read that air pollution can negatively impact our health? Why?

---

---

## How pollutants are measured

Cities around the world are trying to combat air pollution in their own ways but we need to have a way to measure the harmful particles in the air. One tool that can be used to measure air quality is 'air quality monitors.' Air quality monitors are like our 'spies' that quietly report vital information back to us so we can fight air pollution. They are fitted with technology inside it to help measure the air quality. They come in all sizes and can be placed in all types of locations.

How do we know if the air outside is healthy? Our government, as well as many other governments around the world, use an Air Quality Index (AQI) to measure this. The Air Quality Index measured the quality of air outside just like a ruler measures the length of objects.

The Air Quality Index in Western Australia measures the tiny particulate matter (known as PM 2.5) that is in the air right now. PM 2.5 is one of our enemies. The higher amount there is in the air, the worse the air quality is.



### Did you know?

Air quality monitors can measure other 'enemies' in the air such as Nitrogen Dioxide (from the NO<sub>x</sub> family), CO<sub>2</sub> (Carbon dioxide) and Ozone.

The Air Quality Index in Western Australia measures the tiny particulate matter (known as PM 2.5) that is in the air right now. PM 2.5 is one of our enemies. The higher amount there is in the air, the worse the air quality is.

## Locate these cities

These global cities are known to suffer from high amounts of air pollution from time to time. See if you can find out what these cities are by reading the clues next to them.

	City	Country	Clue
<b>A</b>		Indonesia	The capital city of this country. It used to be called Batavia before its current name. This city had a car free day every Sunday along a main street to encourage walking and cycling to help reduce pollution in the air.
<b>B</b>		USA	This city has chronic traffic jams and many freeways and highways. It is home to Hollywood. This city has improved public transport to encourage people to reduce car use to help reduce pollution in the air.
<b>C</b>		China	The capital city of this country. 70% of its air pollution comes from car emissions alone! This city's public buses are mostly electric to help reduce pollution in the air.
<b>D</b>		India	The capital city of this country. This city suffers from air pollution in the wintertime and sometimes places a ban on the sale of firecrackers to help reduce pollution in the air.
<b>E</b>		Bangladesh	The capital city of this country. The brickmaking industry in this city causes lots of dust and smoke in the air. The government has banned old taxi vehicles to help reduce pollution in the air.

Use an atlas or an online map to locate where these cities are and place the corresponding alphabet letter to where it is on the map below.



Which one is the closest to Perth?

---

Answers: A: Jakarta, B: Los Angeles, C: Beijing, D: New Delhi, E: Dhaka

### Take this lesson further

Cities around the world are taking action for healthier air. The United Nations' Sustainable Development Goals (SDGs) include making cities inclusive, safe, resilient and sustainable. Have a read about this goal here - <https://www.un.org/sustainabledevelopment/cities/>

