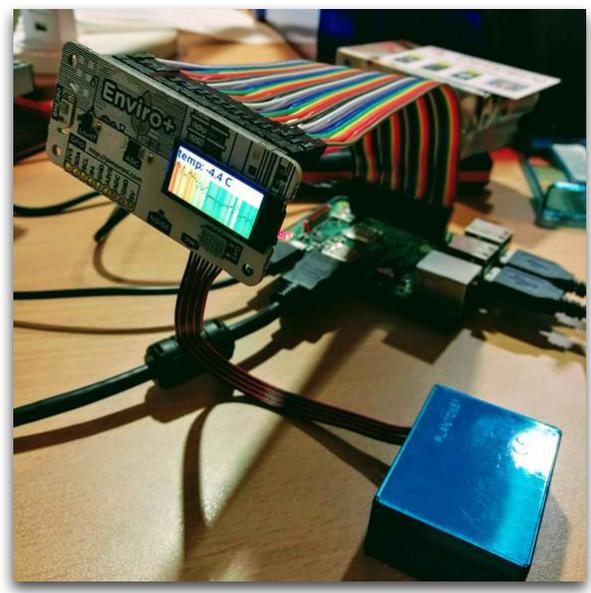


Air Quality

Measure the quality of the air around you!

Investigating air pollution is about exploring air content that can be harmful to life on Earth. Air pollution has always been a problem on Earth, and can be caused both naturally (by volcanic eruptions, forest fires and dust from hot deserts) as well as through human activities. Human beings have polluted the air we breathe throughout our history, with some of the worst air pollution in the UK happening during the industrial revolution.

However, air pollution is still a problem today because human activity makes harmful gases and particulate matter (tiny particles) which get into the air around us. Some of these gasses like Carbon Dioxide and Methane are responsible for Global Warming and the particulate matter is bad for the health of humans and animals.

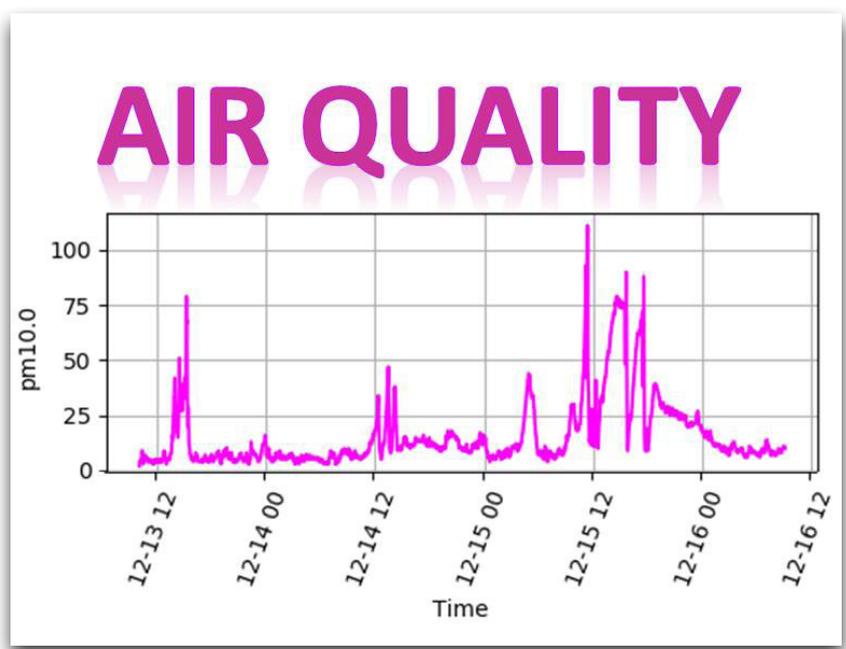


There are over 300 air quality monitoring sites throughout the UK. These sites help us gather and record data on air quality and make sure we are meeting the government targets to protect our health and wellbeing.

At Dynamic Earth we have been measuring the air quality around us by building air sensors using a RaspberryPi computer & Enviro+ board.

We've used these sensors to measure something called PM10 in our car park. PM10 is very, very small particulate matter which can be dangerous for humans because it's so small we breathe it into our lungs.

As you can see in this graph, there are spikes in the amount of PM10 at certain times. This shows us when the car park is busiest because one of the places PM10 is created is in car exhausts! By measuring the PM10 in our car park we can make sure that it never gets so high that it would be dangerous for people.



Activity

You can do your own air quality investigation using some really simple things you can find around your home.

Equipment:

- Cardboard
- Ruler
- 1 pence piece
- String
- Scissors
- Sticky tape
- Magnifying glass

How to Make your Air Sensor

1. Cut a rectangular piece of card 10cm x 4cm
2. Make three small circles by drawing around a 1 pence piece on the cardboard, one near the top, one near the middle and one near the base.
3. Using the scissors, carefully cut out the three circles so that you have a rectangular piece of cardboard with 3 holes in it.
4. On one side of the cardboard only, stick strips of sticky tape over the holes. One side should now be smooth and the other side should have 3 sticky circles.
5. Attach a piece of string to the top of your cardboard rectangle and hang outside for a day or longer.
6. When you are ready bring your piece of cardboard inside and use your magnifying glass to see what is attached to the sticky tape. You may find pollen, soot or dust, all of these are referred to as particulate matter.
7. Try hanging new collectors in different areas and comparing what you find.



More information

[The UK government information](#)

[Scottish Air Quality maps](#)

[OPAL Air quality Citizen Science Project](#)

Operation Earth

This activity and background information came from the Operation Earth Programme. Operation Earth is a national programme run by ASDC that engages, inspires and involves school-age children and their families with NERC's world-leading environmental science research. The programme highlights the relevance of contemporary environmental science issues to everyone's daily lives and to society's future. For more information [click here](#).

For more #DynamicEarthOnline content [click here](#)!



Natural
Environment
Research Council

