

# Lesson Plan

## Air Pollution Catcher

Suitable for all KS1 and KS2 pupils



### Aim

Create your own low cost pollution monitors to measure the most and least polluted places in your local area.

**National Curriculum Relevance** (Suitable for Year 3 to year 9 pupils)

Main Activity: Art: Ar2/1.1, Ar2/1.2, Science: Sc2.1, Sc2.2, PSHE: Citizenship

Additional Activities: Geography: Ge1.3, Ge1.4, PSHE,

### Key Words

Air Quality, Pollution, Air, Particles, Stick, Lungs, Breathing, Dust, Fumes, Cars, Monitor, Clean, Dirty.

### Lesson time

A half hour workshop (maximum 1 hour).

Further half hour session in 2-3 weeks

### Resources

- Paper Plates (enough for one each)
- Natural String (biodegradable)
- Pens (waterproof markers) or coloured pencils
- Petroleum Jelly (Vaseline)
- A pencil to make holes in the plates



### Lesson Activities

#### Introduction

We know that air pollution around schools can be greatly affected by the 'School Run' and some places can be worse than others. This activity is designed to show which areas are higher in pollution than others and may give an indication as to where that pollution is coming from.

- Where does air pollution come from?
- Why is it an issue around their school?
- What can be done to address the issue, what is the solution?
- Who can make this happen?

#### Main Activity

To start with you need to use the pencil to make two small holes in the plate near the rim to thread the piece of string through. Make the holes about 6-7cm apart and cut the string to around 40cm.



Thread the string through the two holes so that the loose ends are at the back of the plate, then draw your picture on the front of the plate.

You can draw any picture you like but when we do them, we like to draw positive pictures associated with the environment and Air Pollution.

If you are doing this as a home experiment complete this stage for all your pollution catchers before going on to the next step.

Once you have threaded the string through all your plates and drawn on the pictures then it is time to get your fingers in the jelly and apply this to the plate.

It is not hugely important, but if you want to be able to see your picture through the Vaseline then smear it all over the plate, but not over your picture.

Repeat this process for all the plates and set them to one side until all of them are ready to hang up.



For the next part you will need to go outside and identify the locations to hang up the paper plates, try and choose somewhere that has some shelter from the harshest of weather, but you do need them to be exposed to the air, so maybe under a tree or somewhere that has some cover but this is not too important.

If you are doing this as a solo project, try and make 3 of these and choose locations that are different in terms of how busy they are. You may wish, as we did, to locate one near to a busy road, one in a quieter road and one at the rear of our house. Find somewhere that you can tie up your plate with the picture side facing outwards and attach it to a solid post or surface so that it will not blow around or fall off. Make sure you write on the back of the plate where you will hang it so you can compare the results later at the different locations.

Once you have put up your catchers all you need to do is leave them up for 2-3 weeks and wait to see what happens with them. After 2-3 weeks take your plates down and compare what you have found.



### Plenary

Did you find more dust and dirt on some of the plates than the others?

Why do you think this is, is there something nearby that you think might influence the amount of pollution on the ones with most particles on them? Discuss this as a class or group.

In the image on the right we found that the plate that we hung up near to a busy road had far more fine particles (air pollution) stuck to the Vaseline than the one in the quieter road to the side of our house. Did you find something similar on your plates?

You may or may not be surprised to know that the main source of Air Pollution in the UK is from Road Vehicles, by far the biggest contributor at around 40% so this is why any plates that you put up near to the road may have attracted more pollution than the ones away from the road. Think about what you could do differently to help improve the Air Quality in your area. Could you use the car less and walk or cycle more? Could you take quieter routes away from busy roads? Can you think of any other solutions or have any other ideas that could help?



For support, advice or assistance with this lesson plan please contact your School Travel Advisor at

[into@staffordshire.gov.uk](mailto:into@staffordshire.gov.uk)

Lesson plan created by Ryan Procter: [ryan.procter@staffordshire.gov.uk](mailto:ryan.procter@staffordshire.gov.uk) 07973 683905