What is Air Quality? Introduction workshop

# National Curriculum links

**Living things:** Recognise that environments can change and that this can sometimes pose dangers to living things.
**Working scientifically:** Identifying differences, similarities or changes related to simple scientific ideas and processes.

# Lesson Aim

To explain what air pollution is, where it comes from and explore how it can be reduced in and around the school grounds.

# Lesson objectives

Pupils will:

* Be able to describe what air quality is
* Uncover different sources of air pollutants and identify their origin, through creating a poster of man-made and naturally occurring air pollutants
* Use example air quality improvement solutions to plan a campaign or initiative to reduce air pollution in and around your school.

# Key vocabulary

Air quality, air pollution, man-made, natural, exhaust, fossil fuel, transport, diesel, pollutants, campaign, initiative, anti-idling, idling, recycling, active travel

# Resources required

* What is Air Quality? Introductory workshop power point
* 12 air pollution cause cards – enough packs for 5-6 groups per class
* Labels pack for cause cards – enough packs for 5-6 groups per class
* Large sheets of A3 paper or sugar paper
* Felt tip pens and pencils
* Glue sticks and scissors
* A4 sheets of paper

# Introduction

This session will give pupils a broad introduction to what air quality and air pollution is, where it comes from and what we can do to improve air quality. Pupils will be given the opportunity to take the lead and design or plan their own campaign or initiative to reduce air pollution in and around the school grounds.

# Group / Class activity

| Timings |  Activities | Notes / resources |
| --- | --- | --- |
| 5 minutes | **Slide 1-2:** **What is air quality?****Slide 1:**Ask the children if they are familiar with air quality, do they know what it is? Have they heard of it before? Explain that air quality is a measure of how clean the air is all around us.Ask children what might make air dirty? [smoke from cigarettes, smoke from houses, volcanic ash and dust, exhaust fumes etc] Explain that their answers are all types of air pollutant.**Slide 2:**Ask the children to look at the busy London street and identify where air pollution is coming from. Children may point out: cars, vans, buses, buildings, power stations, road works, traffic lights (?) etc. | Most air pollution of concern comes from diesel fuelled vehicle engines. However, air pollution can come from several sources and is made up of mostly: dust, gases, liquid droplets and solid particles (from soot and ash) |
| 5-10 minutes | **Slides 3-5:** **Where does air pollution come from?**Working in groups or pairs and work through the following activities:1. Identify and label each cause card – stick labels to each cause card
2. Sort cause cards into man made and naturally occurring sources. Great opportunity for topical discussions and debating in small groups whether some causes of pollution can be categorised under both headings
3. Create a poster displaying the sources of pollution and their man made or natural origin.

Ask the children if they found anything surprising, tricky or difficult. Ask them to explain their findings to the rest of the class. | **Resources:*** Air pollution cause cards
* Air pollution cause labels
* Glue sticks
* Pens / pencils

Extra information about each source of air pollution can be found in the supporting notes document. |
| 1. minutes
 | **Slide 6: How can we improve air quality?****Activity:** Discussion opportunity: In groups – come up with 2 or 3 ways that could improve air quality. Share these thoughts with the class. As a class go through the list of options and discuss any more ideas that are thought of. Discuss the connections between switching lights off and recycling – using less electricity (made through burning fossil fuels) etc |  |
| 15 minutes | **Slide 7: Developing a campaign to promote a way of improving air quality at school / creating a clean air code.**Ask children to work in small groups or pairs for this activity. **Activity:** Start making a campaign plan or poster to show a way that you can improve air quality at your school:1. Choose ONE way that your school can improve air quality per group.
2. Decide what change/s you want to make.
3. Decide the messages you want to share.
4. Make a poster or plan an activity to share your campaign.

**Tip:** Use the ideas on slide 6 as a starting point. **Tip:** Children can design a sticker or logo, a strapline, plan a newsletter article or make a poster to advertise and promote their way of improving air quality. | **Resources:*** Sheets of A4 or A3 paper
* Glue sticks
* Pens, pencils
* Magazines / newspapers if children wish to create a collage poster
 |

# Extensions

|  |  |
| --- | --- |
|  Activities | Notes / resources |
| **Slides 8-15 (answers – slide 15)****Investigating some myths of air pollution – True or False**Show pupils one slide at a time and ask them to decide whether they think each statement is true, false or if they don’t know.**Statements:**1. Diesel vehicles are often the most polluting vehicles on the roads **(True)**
2. You can always see air pollution **(False)**
3. Walking on the inside of the pavement and away from the road can help you breathe in fewer car fumes **(True)**
4. You can always smell air pollution **(False)**
5. The surface area for gases to diffuse through the human lungs is roughly the same size as a tennis court **(True)**
6. It’s always better to be inside a car to protect you from air pollution **(False)**.
 | **More information:**B. lots of pollution is invisibleC. Lots of it is odourlessF. Often, walking, cycling or scooting especially in backstreets and less busy roads, can lessen exposure. In contrast, cars can trap pollution inside. |