

PLANTING HEALTHY AIR

INTRODUCTION SESSION PLAN KS1/2

SESSION OBJECTIVES

- To explain what air pollution is, where it comes from and explore how it can be reduced in and around the school grounds.
- To explore the benefits of green infrastructure in relation to improving air quality

CURRICULUM LINKS

Literacy, Science, PSHE

RESOURCES

Cause cards and labels

KEY VOCABULARY

Air Pollution, Air Quality, Identification, man-made, natural, exhaust, fossil fuel, transport, diesel, pollutants, idling, active travel

INTRODUCTION (5 MINS)

Ask pupils to suggest some of the many benefits of having plants and trees in their playground...attract wildlife, calming, produce oxygen, e.t.c

Explain that today you will be focusing on the role of plants in improving air quality.

What is air quality? Have they heard the term? - Air quality is a scientific measurement of how clean the air is. What could make the air dirty? – smoke, car fumes ...

MAIN ACTIVITIES (20 MINS)

Activity 1: Understanding the problem

Ask pupils to take 3 deep breaths – then ask why do we need clean air?

Ask for suggestions dirty/polluted air might have on our health?

...Can contribute to breathing problems, the development of asthma, and lung and heart diseases.

It is especially important for children, as your bodies are still developing. Because of your height, you are also closer to the exhaust fumes from cars.

Explain that air pollution is made up of lots of different things, it's not all gases, it can be made of dust, tiny solid particles (we call those particulates) and liquid droplets.

The most concerning pollutants that can make you unwell:

Nitrogen Dioxide (NO₂) - this can irritate the lining of your lungs.

Particulate Matter (PM) - these are tiny particles of dust, soot or liquid which are too small to see. These can sometimes go deep into your lungs.

EXT: Ask pupils for suggestions for problems it might have on the environment?

Pupils may also know about how burning fossil fuels also creates global warming / climate change/ causing acid rain, which can affect plants and trees. It can also affect animal health, in the same way that it harms us.

Activity 2: Causes of air pollution- in groups, pupils match the causes of pollution to the labels.

Extension – can they group them into man-made and natural – Pupils share suggestions.

Do you think most air pollution is man-made or natural?

-Most is man made and caused when we burn fossil fuels such as coal, natural gas, diesel or petrol. We do this to give energy supplies for cooking, lighting, heating our homes and travelling by car.

Which of these causes do they think is the main cause of pollution in the playground?

- Vehicle exhausts. 70% of air pollution (in urban areas) come from vehicles

In London almost a 1/4 of school children are exposed to levels of air pollution so high they break legal limits

The solution – role of trees and plants

Trees and plants have superpowers in terms of cleaning the air. They can absorb pollutant gasses and trap particulate matter.

Explain that the type of plants and the position of the plants you put in the playground has to be chosen carefully to help improve air quality. Green screens are particularly good and creating a barrier against pollution entering into the playground.

If you are hoping to plant areas of green infrastructure pupils could investigate the best plants to choose and help to decide where plants should be positioned.

Pupils can carry out air quality monitoring investigations to help identify areas of concern and to inform the positioning and design of new green infrastructure.

How else can we improve air quality?

There are also lots of other things we can all do to help and when we join together we can really make a difference.

Pupils work in groups each groups give each group a focus for their ideas. (use white boards for ideas)

1. What could you personally do to help improve air quality?
2. What could your family do?
3. What could your class do?
4. What could your school do?
5. What could the government do?

Ask the children for their ideas.

Suggestions might include: choosing less polluting travel options, choosing to walk on less polluted streets (taking the less busy route to school), start an anti-idling campaign to encourage parents to switch off their engines at the school drop off (or better still to walk rather than take the car), write letters to the local authority to encourage initiative that reduce traffic around the school.

PLENARY (5 MINS)

Activity 4: Investigating some myths of air pollution – True or False

Ask pupils to decide whether they think each statement is true, false or if they don't know.

Statements:

- A. Diesel vehicles are often the most polluting vehicles on the roads (True)
- B. You can always see air pollution (False)
- C. Walking on the inside of the pavement and away from the road can help you breathe in fewer car fumes (True)
- D. You can always smell air pollution (False)
- E. It's always better to be inside a car to protect you from air pollution (False).

EXTENSIONS

Ask pupils to vote on one or two actions that they can work on together to help reduce air pollution.

Perhaps choose one that they can all do at home and one that they can work on as a group. Identify the next steps to make this happen. Create a mind map to capture all the possible actions. Use this to develop a project plan.