



Clean air superheroes



Introduction

Overview

This activity explores why clean air is important, the sources of air pollution and the actions we can all take to protect ourselves from the health harms of air pollution. Students will design their own clean air superheroes and find out how their superheroes can help them take positive actions towards a cleaner air future. They will also have the option to create an action plan for their superhero to start making some of the changes they want to see!



Time required

60 minutes + optional 30-40 minutes extension or homework activity



Materials required

- Clean air superheroes - presentation slides
- Card sort activity: air pollution problems, health impacts and solutions
- My clean air promise - template
- My clean air superhero – template
- My clean air superhero making changes at my school - template
- Clean air action plan for my school – template

Learning outcomes

By completing this lesson, students will be able to:

- understand some of the air pollution problems (sources & ways we contribute to air pollution), how these impact our health and possible solutions.
- Identify actions they could take independently or collectively, to reduce exposure and/or contribution to air pollution in and around their school and local area.
- understand how they can become agents of change to improve air quality or protect themselves from polluted air; by taking action independently and/or getting support from peers, adults and others in their community.
- Optional extension / homework activity: students will understand the importance of choosing an appropriate method(s) of communication for a target audience and select and design one example communication method.

Curriculum Links – Primary

- Science / PSHE – understanding how air pollution can adversely impact human health and actions individuals can take to protect themselves from these harms.
- Geography – understanding how air pollution affects the natural environment.
- Citizenship - exploring air quality issues critically, debating and making reasoned arguments; preparing students to take their place in society as responsible citizens.
- Language and Literacy – conveying ideas confidently and clearly, using different forms of communication.
- Cross curricular opportunities: examples include - English: writing letters to local decision makers, History: the Great Smog, Geography: mapping local air quality, Student Leadership: running a clean air campaign.

Activity steps

01

Tell the group that they will find out why clean air is important, the sources of air pollution and the actions we can all take to protect ourselves from the health harms of air pollution. They will use this information to help them design their own clean air superhero and think about how their superhero could help them and others within their school community, have a cleaner air future.

To get students thinking about these issues, play 'true or false' and ask the students to respond to the "Clean air, should we care?" T/F statements. At the end of the game, ask volunteers to share their initial reflections about whether we should care about the air around us and why.

02

Ask students what they already know about air pollution and ask volunteers to share any ideas they have with the class. Explain that pollutants are chemicals and substances that are harmful to our health or the natural environment. There are different types of pollution which cause damage to the land, air or water. Use the visuals on the slides as prompts to explain that air pollution is the release of pollutants into the air around us, both indoors and outdoors, for example dust, bacteria, mould, smoke and gases. Ask the students to place both hands on their chest and take a deep breath in – Q - what happened to the air? A - it went into our bodies when we took a breath in. Q - Why does it matter if that air is polluted? A - The air pollution particles are so small that they travel into our lungs and get into our bodies, which is harmful to our health.



5 minutes



Individual task

Clean air superhero slides



10 minutes



Groupwork

Clean air superhero slides



Activity steps

03

Advance preparation: print and cut the card sort activity cards, so each pair or small group has one set. There are two versions of cards with one set aimed at 7-9 year olds and the other aimed at 9-11 year olds; teachers / educators should choose the version most suited to the age and ability of the students.

Activity: Students categorise their cards under the 3 title cards (1) sources of air pollution (where it comes from), (2) how air pollution affects our health, (3) air pollution solutions. An optional extension activity is for some / all students to sort the sources of air pollution further, into indoor sources and outdoor sources of air pollution.

Students can check their answers against the answers on the slides.

04

As a class, students discuss the possible superpowers they could give clean air superheroes, using the superpowers on the slides as prompts. Then, working independently, in pairs or small groups, students use the templates to design their own clean air superhero, identifying what super powers their hero would have to help protect people from air pollution.

They then shortlist 2-3 actions they think their superhero could take at their school. From their shortlist, students should identify their favourite clean air action and think about who they would need support from to help make this happen; and what their school would be like once the action had been completed. Students draw their school in the future, imagining their superhero had completed the action they have selected.



10 minutes



Groupwork

- Clean air superhero slides
- Card sort activity: air pollution problems, health impacts and solutions (9-11 year olds/ 7-9 year olds version as appropriate)



25 minutes



Groupwork

- Clean air superheroes slides
- My clean air superhero - template
- My clean air superhero making changes at my school - template



10 minutes



Individual task

- Clean air superheroes slides
- My clean air promise template


Activity steps

05 Students identify 1-3 actions they could take on an individual scale and complete their clean air promise, using the template.


Ask volunteers to share some of their clean air promises and explain what their favourite clean air action for their school was. Finish by asking the class how they could take some of their ideas forward and all work together for a cleaner air future.


06 **Optional extension or homework activity:** students imagine they are working with their superhero to make their favourite clean air idea happen. Using the template, students identify appropriate communication methods for their target audience and design one type of communication method they would use.

 10 minutes

 Individual task

- Clean air superheroes slides
- My clean air promise template

 30-40 minutes

 Individual task

- Individual task
- Clean air action plan for my school template

For further free practical tools to help schools take action on air pollution; with educational resources as well as information on how air pollution affects children's health, visit <https://www.actionforcleanair.org.uk/schools>

For further information about what air pollution is, how it affects your health, what you can do to protect yourself from it and the action you can take to tackle it – please visit:

- <https://uk-air.defra.gov.uk/>
- <https://www.who.int/health-topics/air-pollution>
- https://www.unicef.org/media/123156/file/Childhood_Air_Pollution_Key_Messages_2022.pdf



Card Sort Activity: Air pollution problems and solutions

Learning objective:

- To understand some of the air pollution problems (sources & ways we contribute to air pollution), how these impact our health and possible solutions.

Advance preparation:

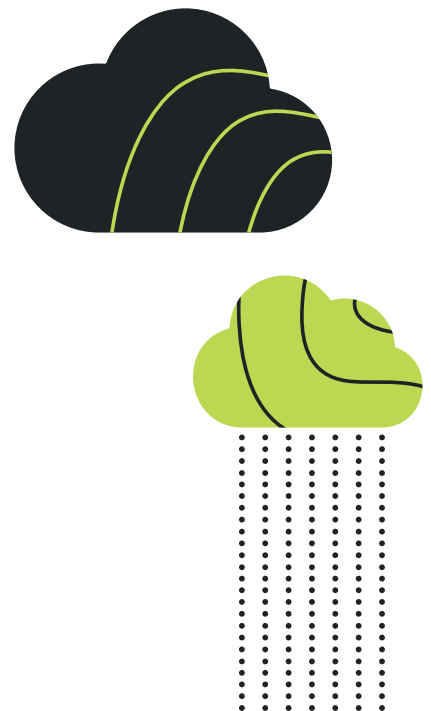
- Differentiation: Choose the set of cards most suited to the age and ability of your students (7-9 year olds, or 9-11 year olds)
- Print and cut the relevant cards.
- Students can work in pairs or small groups. They will need one set of cards per pair/group.

Activity:

- In pairs or small groups, students categorise their cards under the 3 title cards:
 - Sources of air pollution (where it comes from)
 - How air pollution affects our health
 - Air pollution solutions

Optional extension activity: students categorise the sources of air pollution further, under the 2 title cards:

- Indoor sources of air pollution
- Outdoor sources of air pollution



ANSWERS - Card Sort Activity: Air pollution problems, health impacts and solutions

Sources of air pollution (where it comes from)	How air pollution affects our health	Possible solutions (how we can reduce the harms of air pollution)
Vehicles such as cars, vans, ships and planes release harmful gases and tiny particles into the air.	Air pollution can damage your lungs and impact your breathing.	Active travel - walk, cycle or scoot to school and other places.
Factories and power stations release harmful gases into the air.	Air pollution can affect your brain and therefore your ability to learn and your mental health.	Get the bus, tram or train to school and other places.
Farming often has a lot of animal waste and uses fertilisers and pesticides (chemicals) to help food grow. These can all cause air pollution.	Air pollution affects everyone! Any amount of air pollution can damage our physical and mental health.	Discover quieter routes to school and other places. Avoid busy roads and find quiet side streets, when possible.
Idling is when the engine is left on when the car or vehicle is not moving.	Air pollution is more dangerous for children and adults with health conditions – especially if they have problems with their heart, brains or lungs.	Walk on the side of the pavement that is furthest away from the road, especially if you can't avoid walking near a busy road!
Cooking - gases and particles are released into the air when food is cooked.	Air pollution can damage your heart and cause future heart problems	Ask adults to turn the car engine off when it is not moving.
Dust, mould and bacteria are made up of small particles that get into the air.		Ask adults to open windows when cooking.
Chemicals in personal care products (e.g. shower gels, body sprays), cleaning products or craft materials are released into the air. These harmful gases are called volatile organic compounds (VOC).		Ask adults to open windows when cleaning.
Burning things indoors releases gases into the air, e.g. burning wood and coal to heat homes, smoking, or burning candles and incense sticks.		Ask adults to choose personal care and cleaning products that are milder and fragrance-free (no strong smells).
		Raise awareness about air pollution at school and at home - help others find out what they can do.
		Ask an adult at home or school to help you speak to important decision makers. Let them know what action and changes you would like them to help you with.
		Remind children with health conditions that they can get extra support, for example: <ul style="list-style-type: none"> ▪ a nurse or doctor can help them find ways to stay safe from air pollution; ▪ an adult could help them find out more about their health condition or to sign up to air pollution alerts.
		Ask adults to not smoke indoors or near you, and to not burn things indoors e.g. candles and log burners.
		Ask adults to avoid non-essential deliveries or chose the low pollution option when shopping online.

7-9 year olds cards

- There are 2 sets of cards so you can chose the one most suited to the age and ability of your students.
- This set of cards (pages 8-10) is aimed at lower KS2 students.

Sources of air pollution
(where it comes from)

How air pollution affects our
health

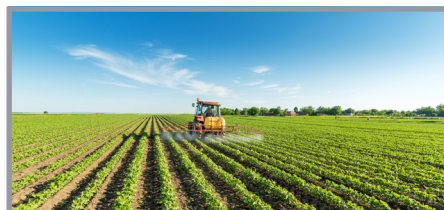
Air pollution
solutions



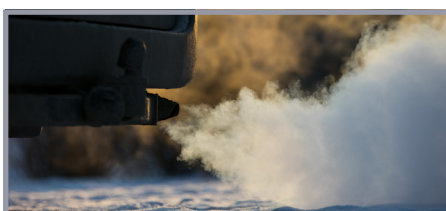
Cars, vans, ships and planes



Factories and power stations



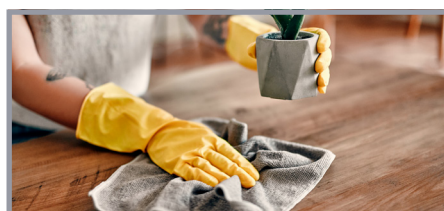
Farming
(pollution from animal waste and
chemicals to help food grow) in low
pollution places



Idling
(when an engine is left on and the
vehicle is not moving)



Cooking food



Dust, mould and bacteria



Chemicals in soap, shampoo,
cleaning products or paints.



7-9 year olds cards

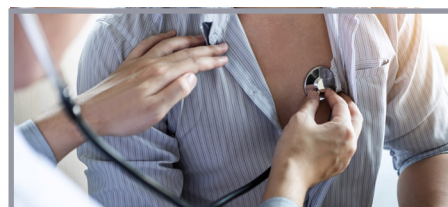
- There are 2 sets of cards so you can choose the one most suited to the age ability of your students.
- This set of cards (pages 8-10) is aimed at 7-9 year olds.



Burning things indoors e.g. wood and coal, candles, smoking



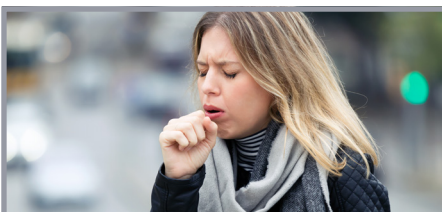
Damages your lungs



Causes heart problems



Problems with your brain and how you learn



Any amount of air pollution can damage our physical and mental health



Air pollution is more dangerous for children and adults with health conditions



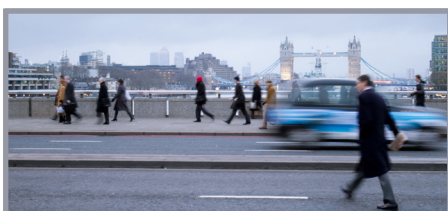
Active travel - walk, cycle or scoot to school and other places



Get the bus, tram or train to school and other places



Avoid busy roads and find quiet side streets to get to school and other places

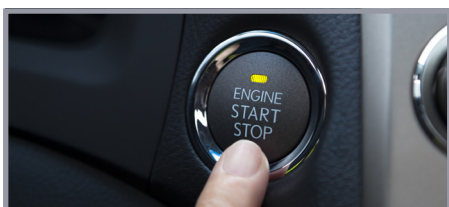


Walk on the side of the pavement furthest away from the road

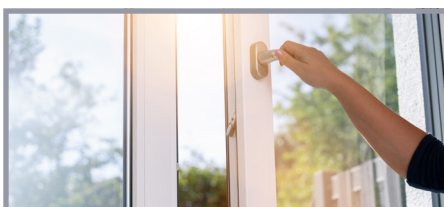


7-9 year olds cards

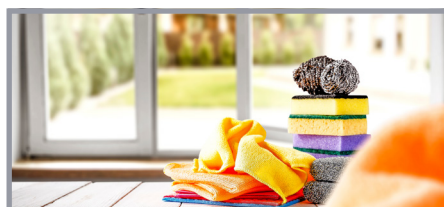
- There are 2 sets of cards so you can chose the one most suited to the age ability of your students.
- This set of cards (pages 8-10) is aimed at 7-9 year olds.



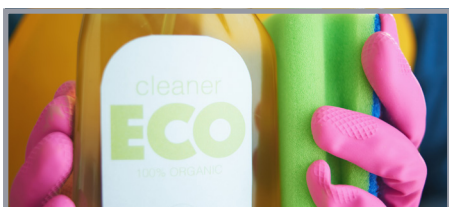
Ask adults to turn the car engine off when it is not moving



Ask adults to open windows when cooking



Ask adults to open windows when cleaning



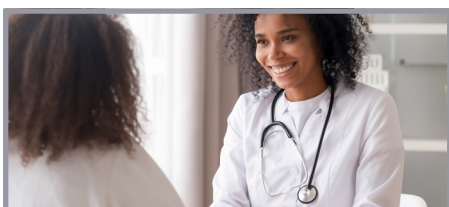
Ask adults to choose products that are milder and fragrance-free (no strong smells)



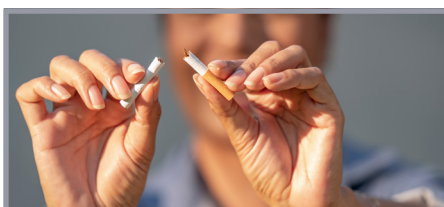
Help others at school and at home, find out what they can do about air pollution



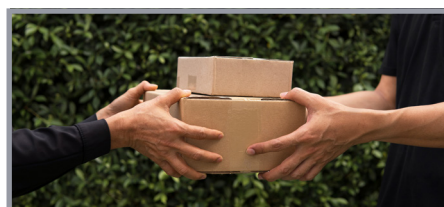
Ask an adult at home or school to help you speak to important decision makers



Remind children with health problems, that they can get extra help from adults e.g. nurse, doctor, teacher, parents



Ask adults to not smoke indoors or near you, and to not burn things indoors e.g. candles and log burners



Ask adults to avoid non-essential deliveries or chose the low pollution option when shopping online

Indoor sources of air pollution

Outdoor sources of air pollution

9-11 year olds cards

- There are 2 sets of cards so you can chose the one most suited to the age ability of your students.
- This set of cards (pages 11-13) is aimed at 9-11 year olds.

Sources of air pollution
(where it comes from)

How air pollution affects our
health

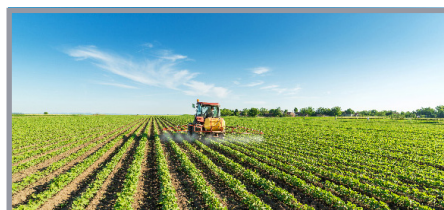
Air pollution
solutions



Vehicles such as cars, vans, ships and planes release harmful gases and tiny particles into the air.



Factories and power stations release harmful gases into the air.



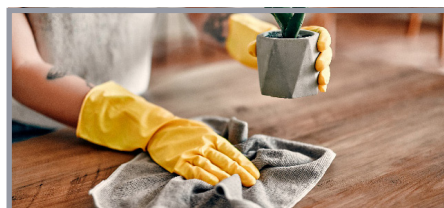
Farming often has a lot of animal waste and uses fertilisers and pesticides (chemicals) to help food grow. These can all cause air pollution.



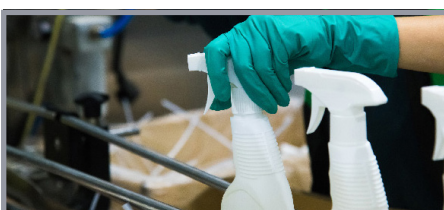
Idling is when the engine is left on when the car or vehicle is not moving.



Cooking - gases and particles are released into the air when food is cooked.



Dust, mould and bacteria are made up of small particles that get into the air.



Chemicals in personal care products (e.g. shower gels, body sprays), cleaning products or craft materials are released into the air. These harmful gases are called volatile organic compounds (VOC).

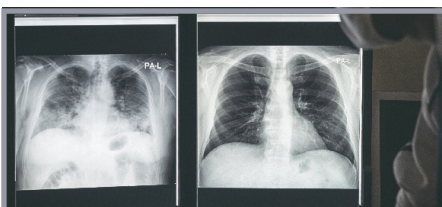


9-11 year olds cards

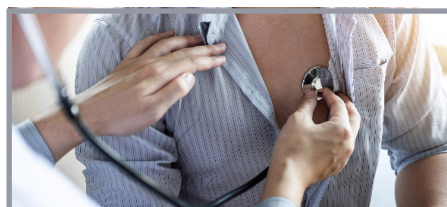
- There are 2 sets of cards so you can choose the one most suited to the age ability of your students.
- This set of cards (pages 11-13) is aimed at 9-11 year olds.



Burning things indoors releases gases into the air, e.g. burning wood and coal to heat homes, smoking, or burning candles and incense sticks.



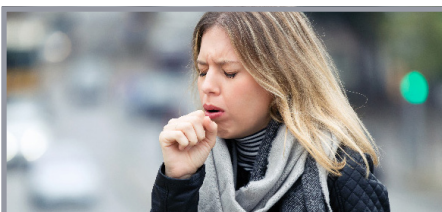
Air pollution can damage your lungs and impact your breathing.



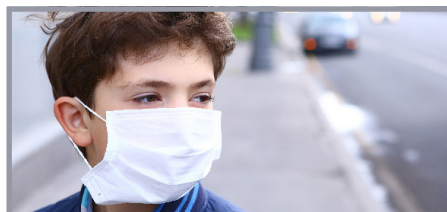
Air pollution can impact your heart and cause future heart problems.



Air pollution can affect your brain and therefore your ability to learn and your mental health.



Air pollution affects everyone! Any amount of air pollution can damage our physical and mental health.



Air pollution is more dangerous for children and adults with health conditions – especially if they have problems with their heart, brains or lungs.



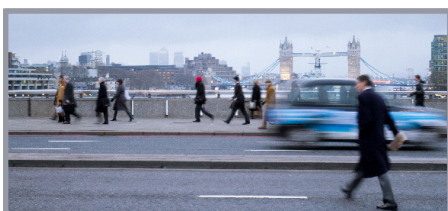
Active travel - walk, cycle or scoot to school and other places.



Get the bus, tram or train to school and other places.



Discover quieter routes to school and other places. Avoid busy roads and find quiet side streets, when possible.



Walk on the side of the pavement that is furthest away from the road, especially if you can't avoid walking near a busy road!



9-11 year olds cards

- There are 2 sets of cards so you can chose the one most suited to the age ability of your students.
- This set of cards (pages 11-13) is aimed at 9-11 year olds.



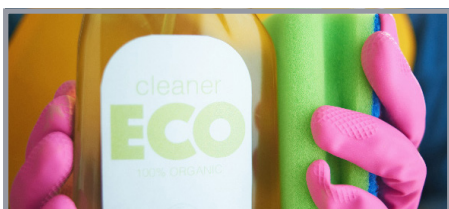
Ask adults to turn the car engine off when it is not moving



Ask adults to open windows when cooking



Ask adults to open windows when cleaning



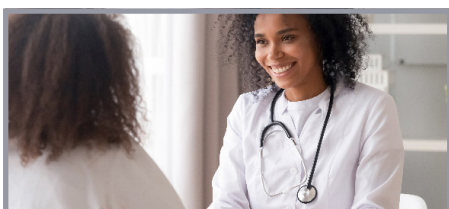
Ask adults to choose products that are milder and fragrance-free (no strong smells)



Raise awareness about air pollution at school and at home - help others find out what they can do.

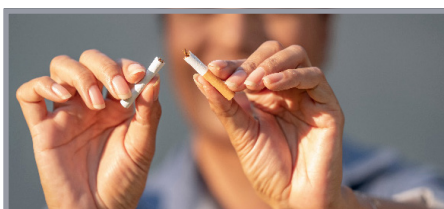


Ask an adult at home or school to help you speak to important decision makers. Let them know what action and changes you would like them to help you with.



Remind children with health conditions that they can get extra support, for example:

- A nurse or doctor can help them find ways to stay safe from air pollution;
- An adult could help them find out more about their health condition or sign up to air pollution alerts.



Ask adults to not smoke indoors or near you, and to not burn things indoors e.g. candles and log burners.



Ask adults to avoid non-essential deliveries or chose the low pollution option when shopping online.

Indoor sources of air pollution

Outdoor sources of air pollution

My name is: _____

Class: _____

My clean air superhero!



My superhero's name is:

Superpowers:

How my superhero protects people from air pollution:

Draw your superhero:

My name is: _____ Class: _____

My clean air superhero making changes at my school!

My favourite clean air idea for my school (choose 1)

- Helping children walk, cycle or scoot to school
- Helping children find less polluted ways to get to school
- Helping children and adults learn about air pollution
- Reminding adults to turn the engine off if they are waiting in the car
- Ask an adult at school to help you speak to important decision makers. Use your voice to let them know what you would like them to help you with.

I have some different ideas:

Who could your superhero ask for help to make your favourite clean air idea happen?

- Children in my class
- Children in other classes
- My class teacher
- Other class teachers
- My headteacher
- The caretaker
- Parents and carers
- Someone else:

What would your superhero need to ask this person?

What will your school be like after your superhero helped with your favourite clean air idea?

Draw your ideas here:

My clean air promise

I promise to:

- Walk, cycle or scoot to school
- Get a bus, train or tram to school
- Use quiet side roads that have less air pollution
- Remind adults to turn the engine off when the car is not moving
- Remind adults to open windows when they are cooking
- Remind adults to open windows when they are cleaning
- Ask adults to choose things with no strong smells (e.g. paints, shampoo, cleaning products)
- Help other children at my school find out about air pollution
- Ask adults at my school or at home to help me have cleaner air
- I have a different idea:

Draw your clean air promise here:

My name is: _____

Class: _____

Clean Air Action Plan for my School

Imagine you're working with your superhero to help make your favourite clean air idea happen!
Design **one** type of communication that you would use to make this change. Use the information on this page to help you.

My favourite clean air idea for my school is:

One person (or group of people) I would need help from is:

A good way to communicate with this person (or group of people) could be to:

- Write a letter
- Design a poster or a banner
- Run an assembly
- Write a song or a poem
- Write something for the school newsletter
- Write a speech
- Have a conversation / meeting (plan what you'd say)
- Make a podcast script
- Design a social media post for your school to post
- Have some different ideas:*

Chose and design **one** of the communication methods in the space below: