

KS2 Science / Geography / PSHE Lesson

Notes for teachers:

- This lesson is a follow up to the assembly, therefore some content is repeated and intended to be used as a recap for your students (as appropriate).
- You can either use the **pre-recorded assembly** <https://youtu.be/rw7YckaP2jE> or deliver it using the [resource pack](#) in your own time.
- See powerpoint slides' notes section for additional information and guidance
- **Advance preparation** – (1) print and cut cards for the sentence matching game. (2) Print templates for dream clean air school (optional)
- **Next steps** - to register your student's voice – please use <https://www.blueair.com/gb/freedomtobreathe.html> and send a selection of any work your students do to freedomtobreathe@globalactionplan.org.uk (e.g. poems, stories, drawings, letters etc.). Remember to anonymise this for safeguarding and GDPR reasons (further details on slide notes).



The Freedom to breathe teaching resources have been developed by educational professionals and will achieve three key learning outcomes. Students will:

1. Understand the state of air quality in their city, and how it compares to other cities.
2. Understand the health impacts of air quality on their physical health, mental health and their ability to learn.
3. Understand how they can claim their right to clean air by understanding what the UN Convention on the Rights of the Child is. It is focused on their rights to the best possible health, clean water and a clean environment (article 24), but does not include the explicit 'right to clean air.'


Curriculum links: this primarily links to the KS2 Science & Geography NC, as well as links to Literacy, PSHE and Art & DT.

Freedom to breathe aims to gather the support of 20,000 children from four target cities (starting with Beijing, Delhi, London, Los Angeles) - in support of a call to the UN to acknowledge Children's Right to Clean Air. Students will have the opportunity to join a virtual event in November to hear the response from the UN.

Please ensure any work shared does not contain images of people and students are only identified by their first name / age e.g. Luke, age 7, London or primary school student, age 10, London.



Freedom to breathe



What are
the things
we need to
live a happy
and healthy
life?



 Freedom to breathe

Teacher to write down ideas on whiteboard if possible – to refer to later

Food

**Clean
Water**

Sleep

What are
the things
we need to
live a happy
and healthy
life?

Warmth

Shelter

Fun!

Exercise

 Freedom to breathe

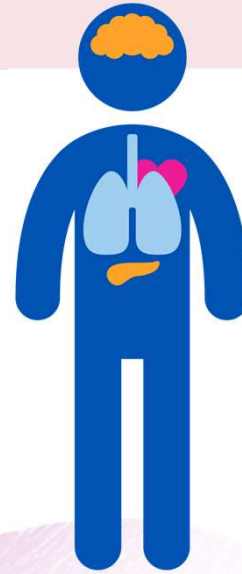
PAUSE POINT

How about clean air?

Clean air is very important for us to stay happy and healthy.

Cleaner air means that our lungs, our hearts and our brains can function better!

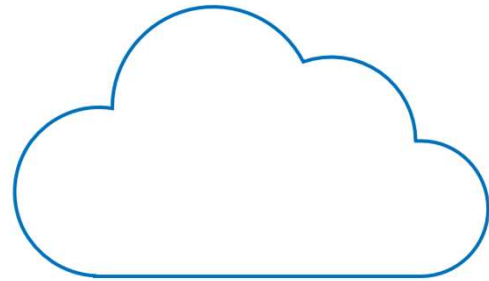
Unfortunately some of the air around us is polluted...



 Freedom to breathe

You may have got lots of ideas, but how about clean air? We need to breathe to stay alive! We're constantly breathing, even in our sleep. Clean air is critical to life and essential for our health and development. Unfortunately the air we breathe can be polluted.

What is air
pollution?

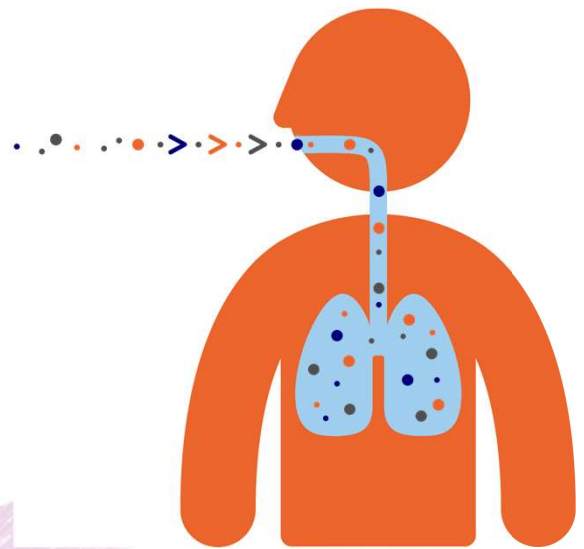


 Freedom to breathe

But what is air pollution? What things might make it polluted?

Air pollution is in the air that we breathe in. It enters our bodies and can damage our health and physical and mental development.

Air pollution can be indoors and outdoors....



 Freedom to breathe

Can you remember some causes of indoor air pollution?

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



Chemicals in cleaning products or craft materials, that are released into the air. These harmful gases are called volatile organic compounds (VOC).



Personal care products like shower gels and body sprays.



Dust, mould and bacteria.



 Freedom to breathe

For more information on **indoor air pollution in the UK** see the Royal College of Paediatrics and Child Health resource/report “The inside story: **Health effects of indoor air quality on children and young people**”

<https://www.rcpch.ac.uk/resources/inside-story-health-effects-indoor-air-quality-children-young-people>

For more information on **where air pollution comes from in the UK** – please visit: <https://www.cleanairhub.org.uk/where-does-air-pollution-come-from>

Can you remember some causes of outdoor air pollution?

Vehicles such as cars, vans, trains, ships and planes release gases and tiny particles (in soot) into the air.



Factories that make things such as food, clothes and toys and **power stations** that generate energy by burning fossil fuels.



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



Burning fuel such as wood and coal to heat homes.



 Freedom to breathe

For more information on where air pollution comes from in the UK – please visit:
<https://www.cleanairhub.org.uk/where-does-air-pollution-come-from>

The particles in the air are called particulate matter (PM)

The air carries some **tiny tiny tiny tiny** particles, so we can't always see them!

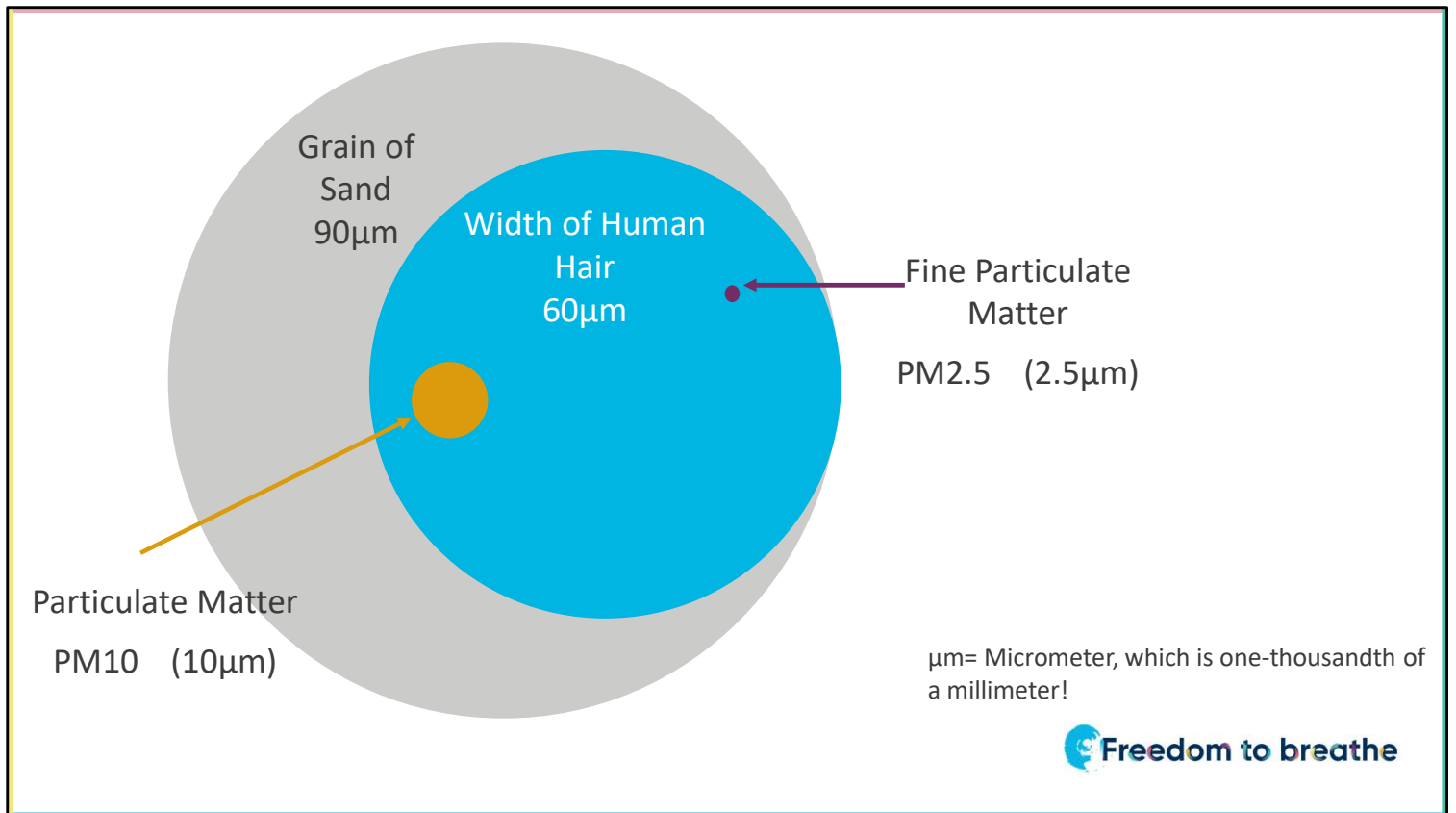
Some particles, known as **PM10**, are **10 times smaller** than a grain of sand!!

Even smaller are **PM2.5**, which are **40 times smaller** than a grain of sand!

PM = Particulate Matter



Draw attention to air pollution often being invisible



Micrometre, one-thousandth of a millimetre!

Nose hairs and lungs act as our natural filters - particle traps but the smallest sneak through to our blood stream – again reiterate air pollution isn't always visible

Particles all around us?

Examples of PM10

Sea Salt
Pollen
Heavier dust
Mould
Bacteria



These are quite irritating! They can cause hay fever, sneezing and coughing.

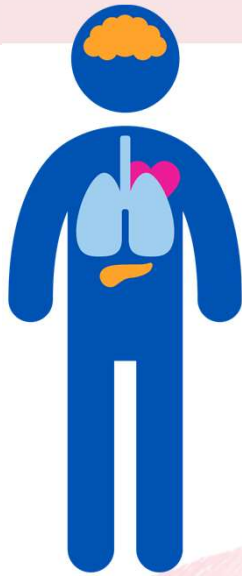
Examples of PM2.5

Soot
Cat allergens
Viruses
House dust mite
Tobacco smoke

These can seriously damage our health and physical and mental development – especially our brains, hearts and lungs!



Particles can be indoors and outdoors



Any amount of air pollution can be damaging to our health and physical and mental development, but the more that you are exposed to, the bigger the risk and the larger the impact it can have.



Read slide

Air pollution is often very small and most of the time, you can't see it at all. It's smaller than a single piece/strand of your hair!

In London...

- Children are exposed to 5 times more air pollution on their way to school (compared to other parts of the UK).
- 1/5 primary schools are by major roads.
- 240,000 children are diagnosed with asthma.
- The amount of PM 2.5 in the air is high.



 Freedom to breathe

Air pollution can affect everybody!

Average levels of PM 2.5 in London (2019) - $11.4\mu\text{g}/\text{m}^3$ (micrograms per one cubic meter of air) which is higher than WHO target for PM2.5 at $10\mu\text{g}/\text{m}^3$

The PM 2.5 levels are also high in other cities like these.
Do you think that is good or bad? Why?



Beijing, China

42.1µg/m³



Delhi, India

98.6µg/m³



London, UK

11.4µg/ m³



Los Angeles, USA

12.7µg/m³

µg/ m³ = micrograms per one cubic meter of air

The safe limit is 10µg/ m³.



Additional links / information for teachers:

<https://www.bbc.co.uk/news/uk-england-london-55330945>

In 2019, it was recorded that there PM2.5 levels were at 11.4µg/ m³ (micrograms per one cubic meter of air) in **London**. The World Health Organisation's target is 10µg/ m³.

Other cities (Beijing, Delhi, LA) also have high levels of air pollution:

In Los Angeles, USA, 12.7µg/m³

**1/10 children are diagnosed with
asthma.**

In **Beijing**, China, $42.1\mu\text{g}/\text{m}^3$

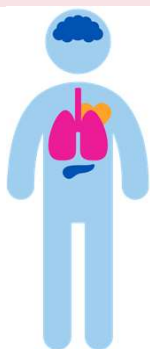
A 2009 study found that 6.3% of urban children were diagnosed with asthma and 7.2% wheezing symptoms.

Schools have also been ordered to keep children indoors to avoid high levels of air pollution.

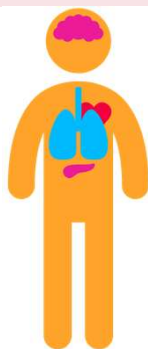
In **Delhi**, India, $98.6\mu\text{g}/\text{m}^3$

A report showed that about half of the 4.4 million children who reside in the city have damaged lungs.

How does air pollution affect us?



Air pollution can damage your **lungs**. It can impact your breathing, can cause respiratory diseases (e.g. asthma) or make symptoms worse.



Exposure to air pollution can affect your **brain** and therefore your ability to **learn** and your **mental health**. There is also emerging evidence on the link between air pollution and worse cognitive functions, such as memory, and increased risk of dementia.



Air pollution can impact your **heart**. It causes heart disease and other coronary (heart) related problems. Every year, air pollution is estimated to contribute towards up to 36,000 deaths in the UK .

 **Freedom to breathe**

Additional information:

Polluted air is the number one environmental risk to humans. It affects all bodily functions / organs and therefore physical and mental health and development. Children's bodies are more susceptible to this as they are still growing. Breathing in clean air is vital to help children live long healthy lives and realise their full potential.

What can we do to
make sure we have
cleaner air?



We can all play a role to make sure we have cleaner air!

Activity: Let's play 'match your sentences'!

- You will each be given a sentence.
- **Your aim** is to **find your partner** who has a sentence that connects to yours.
- If you have a sentence which begins with '1', you are looking for a sentence that begins with '2'.



Use air quality sentence matching game - needs to be printed and cut up in advance

This activity will help students identify actions they can take to make sure we have cleaner air.

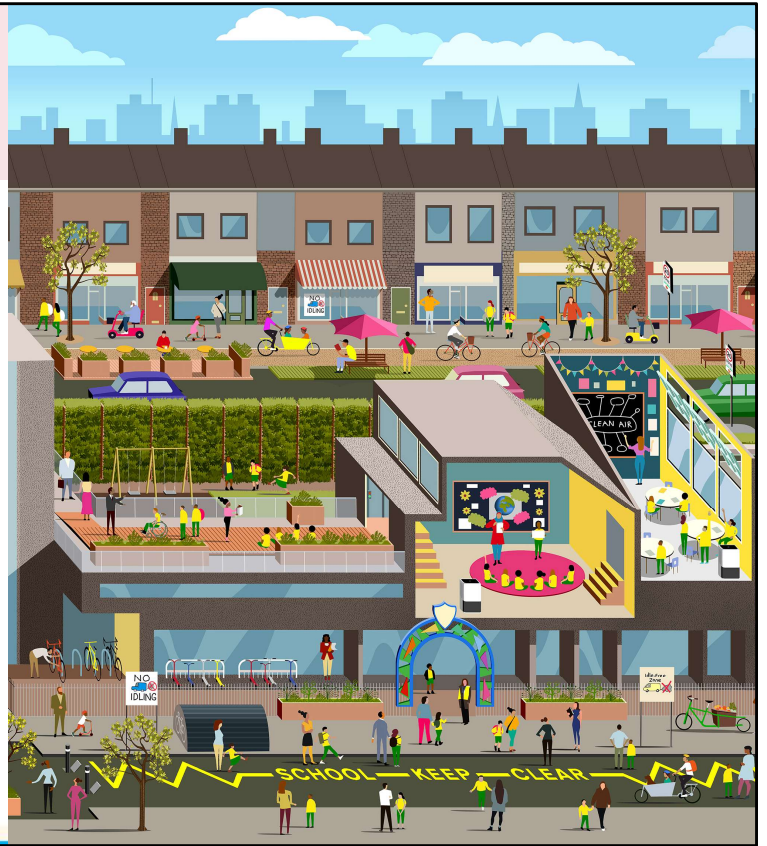
What did we find out?

- Listen closely to your classmates, to find out what we can do to make sure we have cleaner air.

(This will also help you with your next activity!)

Activity

Create a vision of your Clean Air School!



You will now draw and design your clean air school


What do we want?

A world where every school is a clean air school.

The student voice has the power to create real change.



 Freedom to breathe



What could your
Clean Air School
have?

 Freedom to breathe

Think about some of the ideas from the sentence matching game and other ideas you might have...

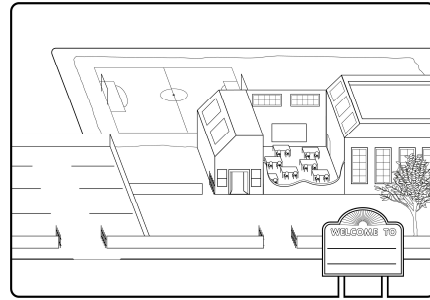
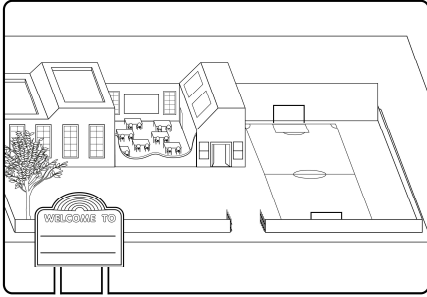
- How can you encourage others to think about how they travel?
- What can you do to support people if they are using different ways of travelling?
- Don't forget about indoor air pollution! What could you do to help avoid this in classrooms? Think about some things you might use (arts and crafts materials, adults who use cleaning products etc). Also, what can you do to improve air circulation? (e.g. opening windows that are away from roads with heavy traffic)
- How can you raise awareness about air pollution in your school and local community? What might your Clean Air events involve?

These questions might help you come up with more ideas for your Clean Air School

- What can you do to support people to use different methods of travelling?
- Don't forget about indoor air pollution! What could you do to help avoid this in classrooms, or at home? What could you do to improve air circulation?
- How can you raise awareness about air pollution in your school and local community? What might your Clean Air events involve?

Your task: to design your dream Clean Air School!

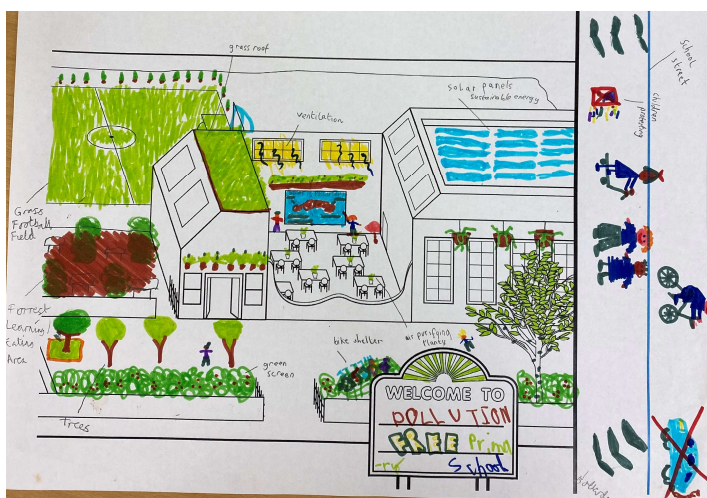
- Use the ideas on the mind map and the sentence matching game.
- Label your ideas and use colour!
- If you prefer you can draw your own too.



What could you do with your clean air school vision?

Here are a few ideas:

- Share your designs with your teachers, headteachers, families or your local MP – ask them to help with some of your ideas where possible
- Present them at assembly or school event– let others know why clean air and your ideas are so important
- Put them on a notice board at your school – help others learn more about clean air
- Ask your teacher to email them to Global Action Plan – we can help bring together yours and other children's ideas to share with the UN (we'll explain more about this later!)



Y5/6 Double G (SDGs) and Rights Respecting Committee members - Haimo Primary School, Eltham



Students to start thinking about ways they can amplify their own voice using the designs they have created as a tangible example – enabling and empowering them to see that they can have agency and have a powerful voice

You can share your students' work with us at freedomtobreathe@globalactionplan.org.uk.

Please ensure any work shared does not contain images of people and students are only identified by their first name / age e.g. Luke, age 7, London or primary school student, age 10, London.

**Together, we can work
towards having cleaner air.**

Let's think about how else we
can do that...



Who would you talk to if you needed help...

- At school?
- About something in your local community?

Here are a few ideas:

Friends, teachers, headteacher, parents, other adults you know and trust (e.g. a sports coach or a religious leader)

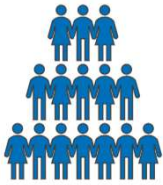


 Freedom to breathe

Get students thinking about gaining support from trusted adults

Safeguarding / H&S note – remind children that they shouldn't be approaching adults they don't know, without support/guidance from a trusted adult such as their school teacher or parent/guardian

With other people...



- We can raise awareness by telling others why clean air is so important.
- If we all told at least one other person, and they tell one other person, think how many people we can spread this message to!
- We also need to make sure the right people know about clean air, e.g. headteacher, local council, local MP, the UN...

What can we do as a class?



- Could we change some of the things we do as individuals?
- Could we help other children find out more about clean air?
- Could we organise an assembly? Or a school event?
- Could we work together with our teachers and trusted adults, to make sure the right people listen to us?



Get students thinking about how their voices can be amplified with the support of those trusted adults

One important thing we can do is to make sure that Clean Air becomes an explicit right!





The UN are a big and important organisation who

The UN says that children should have access to hospitals, clean water, healthy food, a good and clean environment and education.

But they do not clearly say clean air is a right!



The UNCRC does not explicitly state Clean Air should be a right.

- Do you think it should?
- Raise your hand if you agree.
- Your teachers will make sure that the right people know you think clean air should be a clear right, by adding the number of children who voted 'yes' to <https://www.blueair.com/gb/freedomtobreathe.html>



Raise a hand if you think it should - call to action and explain the campaign (see next slide for more notes)

What happens next?

- 20,000 children calling for the Right to Clean Air all over the world – starting in Beijing, Delhi, London & Los Angeles!
- Event in November bringing together the children's voices to the UN
- Your ideas are really important – we'd love to know what they are so we can help you share them with the UN! Examples might include:
 - Stories, poems, letters, songs
 - Artwork
 - Videos or photography (of actions and places, not people)

Please ask your teacher to share your work with us via email:
freedomtobreathe@globalactionplan.org.uk.



Freedom to breathe aims to gather the support of 20,000 children from four target cities (starting with Beijing, Delhi, London, Los Angeles) - in support of a call to the UN to acknowledge Children's Right to Clean Air. Students will have the opportunity to join a virtual event in November to hear the response from the UN.

Please ensure any work shared does not contain images of people and students are only identified by their first name / age e.g. Luke, age 7, London or primary school student, age 10, London.



Freedom to breathe