

# Grades 7 and 8 Science / Geography 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).
- See the slides' notes section for **additional information and guidance**
- To register your **student's voice**, visit: <https://www.blueair.com/in/freedomtobreathe.html>
- Send us all your **school entries** to paryavaranmitra@ceeindia.org by 15<sup>th</sup> October 2021. (e.g. poems, stories, drawings, letters etc.). Remember to anonymise this for safeguarding and GDPR reasons

The Freedom to breathe campaign 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 EVS, Science, Social Science, along with links to Languages and Art & Craft aimed at grades 5 to 8.

# Grades 7 and 8 Science / Geography Lesson

## Notes for teachers

### Freedom to breathe:

Campaign 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.

**Take the children's calls to the UN (that's you!)** - everyone involved will be invited to attend a virtual event in November, to hear the response from the UN.

### How it works:

- Introduce students to the campaign and tell them that session is about the campaign
- Students will learn about the state of air quality, the benefits of cleaner air to children's health and development, and the United Nations Convention on the Rights of the Child, noting the absence of the explicit "right to clean air" (article 24).
- After session, invite students to participate in exciting follow up activities.

### What you'll need to do after:

- Submit work done by students as part of activities – selected entries will be shared with the UN and make your calls louder!





Freedom to breathe

# Lets begin.....

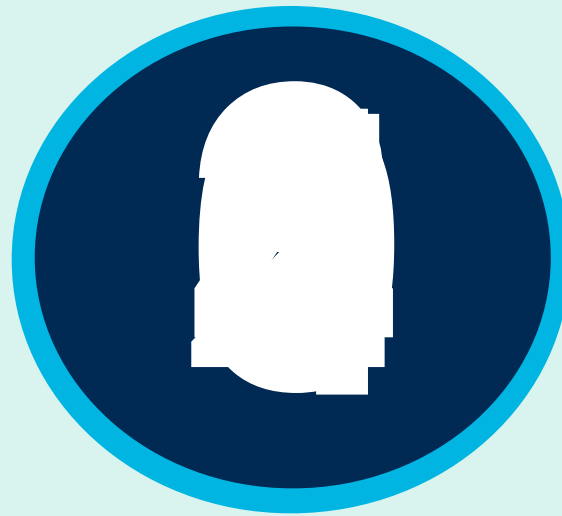
To get most out of the session today, be ready with...

- A pen/pencil and some scrap paper to hand
- Listen carefully to the session
- Respond to questions using scrap paper or chat feature
- Understand follow up activities to work in team and at individual level
- Don't hesitate to ask questions and to share your ideas

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

PAUSE POINT

**30 seconds**



**Food**

**Clean  
Water**

**Sleep**

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

**Warmth**

**Shelter**

**Fun!**

**Exercise**

**PAUSE POINT**

 **Freedom to breathe**



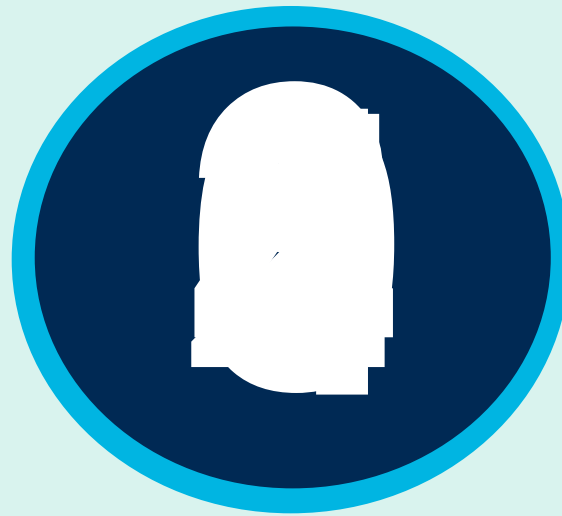
# How about clean air?

**What do you  
know about  
air pollution?**



**PAUSE POINT**

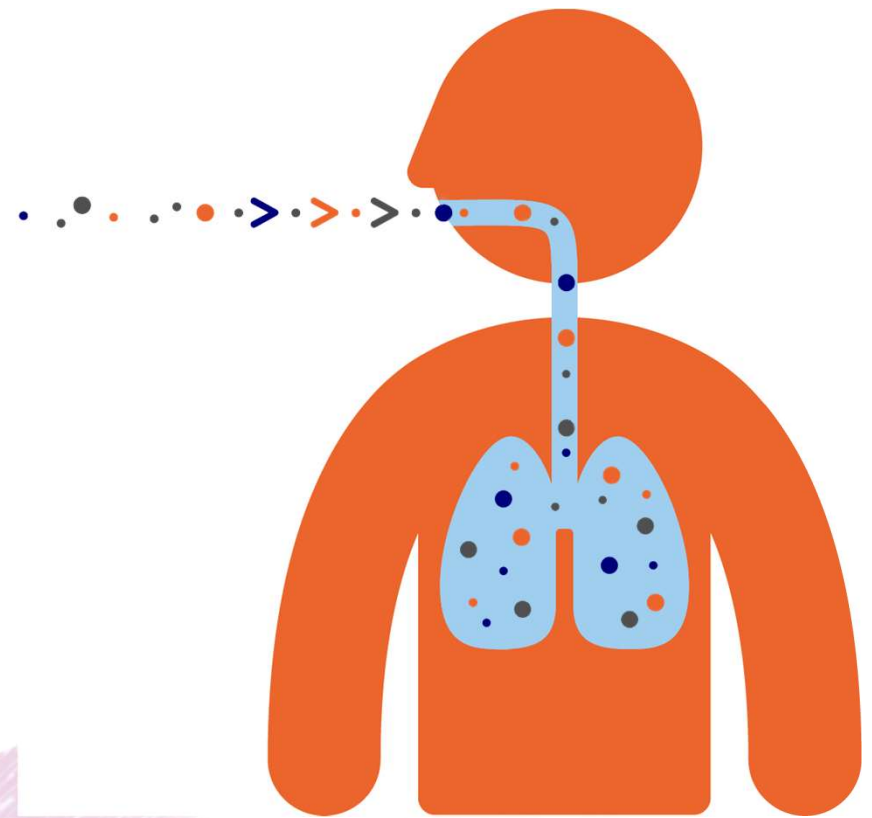
**30 seconds**



Air pollution is in the air that we breathe in.

The particles and gases enter our bodies and can damage our health and physical and mental development.

Air pollution 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.

# Can you guess where air pollution comes from?

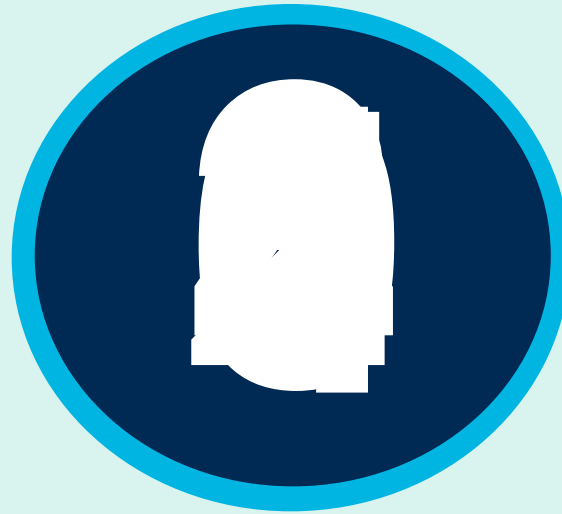
Try to finish the sentences:

- **Indoor** air pollution is caused by things like....
- **Outdoor** air pollution is caused by things like....

PAUSE POINT

**30 seconds**





# Indoor air pollution is caused by...

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



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



Release of smoke from things that are burnt in the home e.g. cigarettes and incense sticks.



Dust, mould and bacteria.



# Outdoor air pollution is caused by ...

**Vehicles** such as cars, vans, trains, ships, planes release nitrogen dioxide & carbon monoxide & particulate matter into the air.



**Factories** and **power plants** that generate energy/electricity by burning fossil fuels, release harmful gases and particulate matter.



**Agricultural practices** like stubble burning emits fine particulate matter (PM2.5). Fertilisers & pesticides (chemicals) can cause pollution.



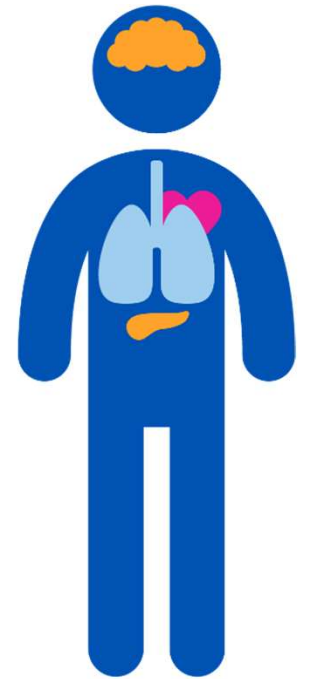
**Burning of waste, plastic, painted or treated wood** release toxic chemicals in the air



**1. Do you think air pollution affects us?**

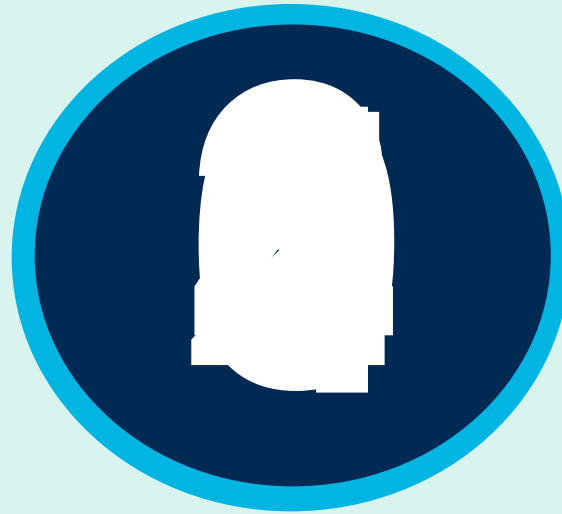
**2. Why? Why not?**

**3. If yes, how do you think it affects us?**

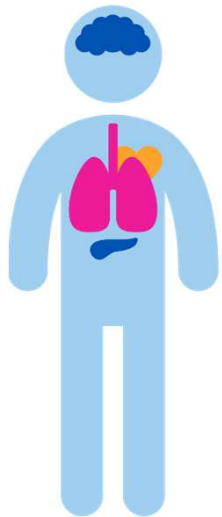


**PAUSE POINT**

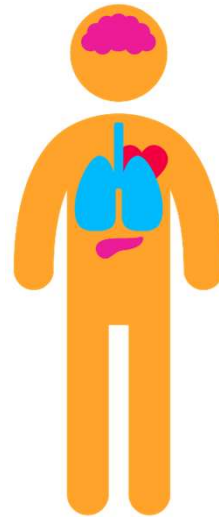
**30 seconds**



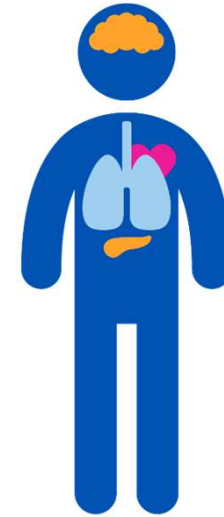
# How does air pollution affect us?



Air pollution can damage your **lungs** and impact your breathing.



Exposure to air pollution can affect your **brain** and therefore your ability to learn and your mental health.



Breathing in air pollution can impact your **heart** and cause future heart problems.

**PAUSE POINT**

# New Delhi

- Daily levels of toxic air in Delhi schools, which are often close to roads, are more than 10 times worse than acceptable standards.
- About half of the 4.4 million children who live in Delhi have serious lung damage.
- Recent lung tests conducted on 5,718 students in Delhi show that 43.5% suffer from “poor or restrictive lungs”.





# What do you notice about PM 2.5 levels around the world? Why does this matter?



## Beijing, China

42.1  $\mu\text{g}/\text{m}^3$



## Delhi, India

98.6  $\mu\text{g}/\text{m}^3$



## London, UK

11.4  $\mu\text{g}/\text{m}^3$



## Los Angeles, USA

12.7  $\mu\text{g}/\text{m}^3$

$\mu\text{g}/\text{m}^3$  = micrograms per one cubic meter of air

The safe limit is 10  $\mu\text{g}/\text{m}^3$ .

## Slide 25

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**HB7** need to change the ppt notes on this slide so it's delhi focused?  
Hannah Battram, 16/06/2021

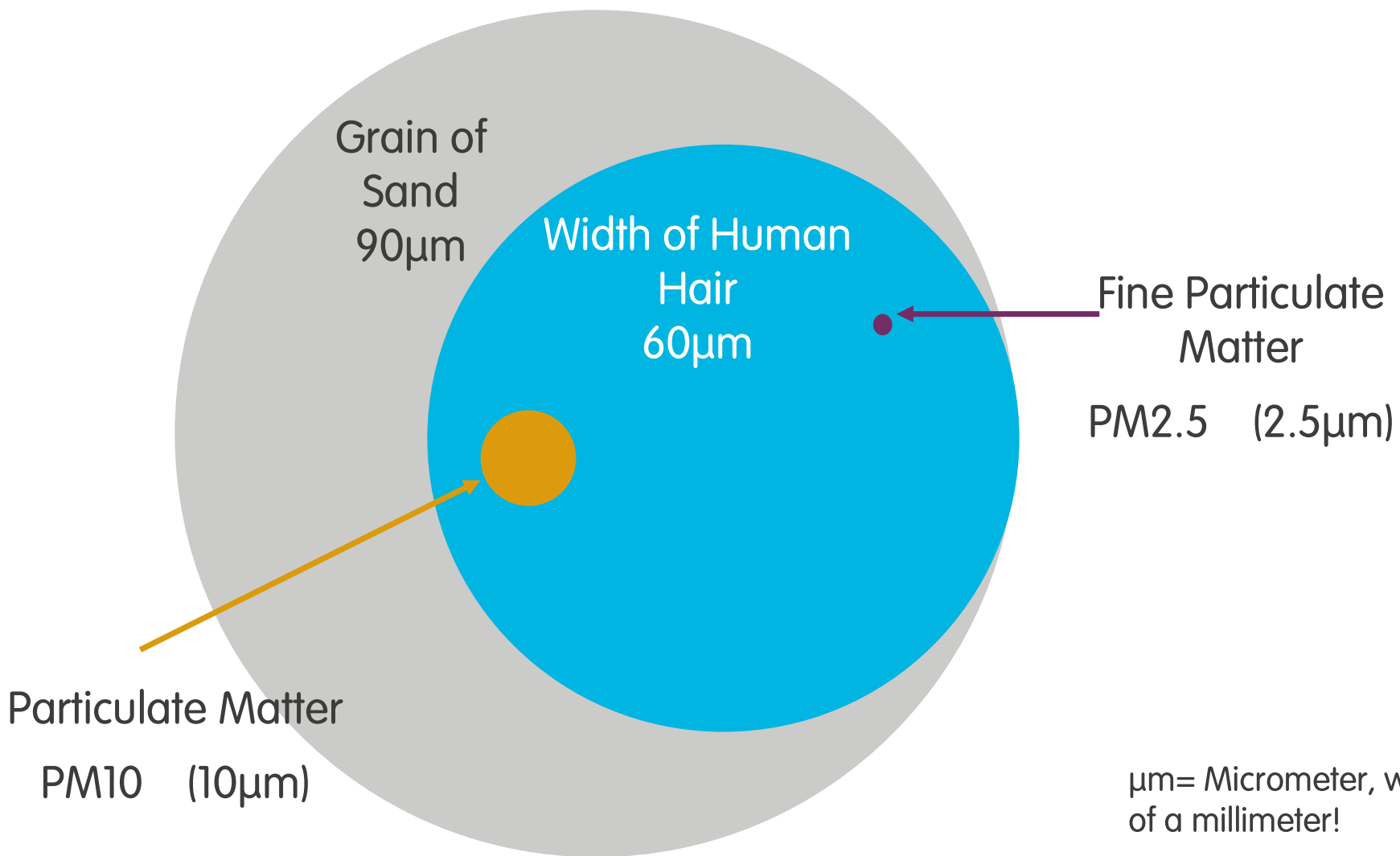
# The particles in the air are called particulate matter (PM)

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**



$\mu\text{m}$  = Micrometer, which is one-thousandth of a millimeter!

# 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 development

**We can all help to make sure the air around us is cleaner.**

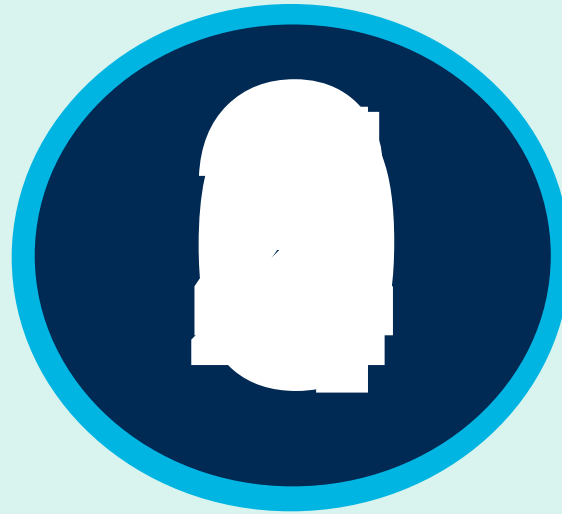
**What could you do?**

Hint: think about things you've done over the last week (e.g. at home/school, your journeys, your activities):

- Could you have done anything differently?
- Are you already doing something to help?

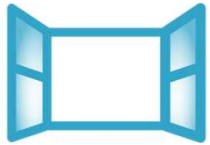
**PAUSE POINT**

**30 seconds**





## At home



- Keep your windows open to let the fresh air in – especially when cooking or cleaning



- Switch to environment friendly or low VOC generating household cleaning and personal care products



- Talk to friends and family to create awareness on how some of our actions (like burning things, smoking) can affect indoor air quality

## When travelling to places



- Walk, cycle, scoot or take public transport whenever you can instead of using your car



- Car pool with your friends



- Don't idle – ask your parents/adults to turn off their engines when the car isn't moving

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

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

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

## Activity 1: What solutions do you choose?

You are going to have creative problem solving activity to help you find out more about different types of solutions that exist around the world!

- What is the most effective way of making sure your city has cleaner air?
- Which action(s) will you prioritise? Why?

**What are the best actions? Why?**  
**Which solution(s) can you influence? How?**

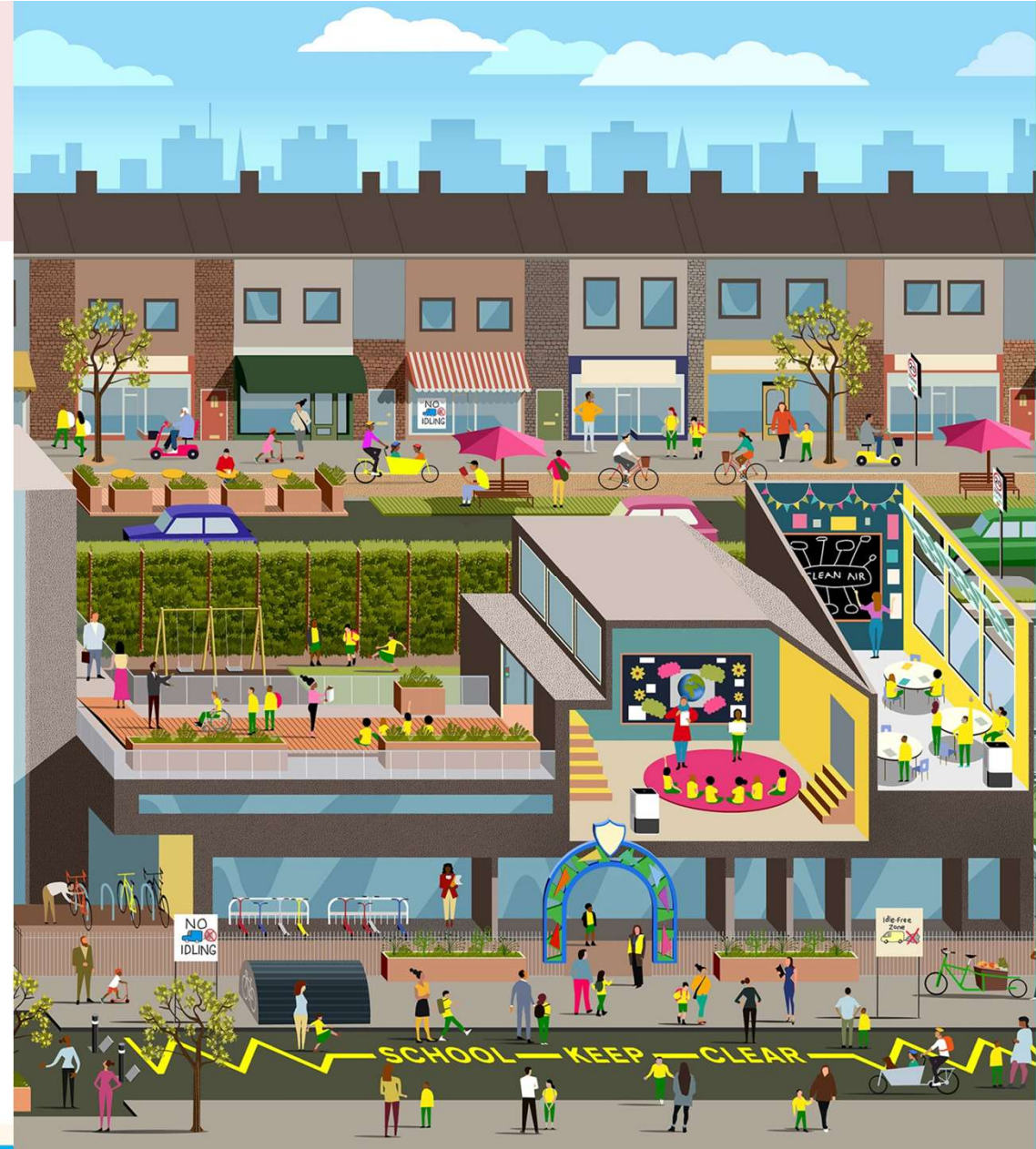


## Deliberating Solution

- Each one of us could be change maker who could contribute in improving air quality of you city.
- Any one topic is allotted to each one of you from previous slide. You could work together in team with same topics.
- Discuss your topic to identify various steps/actions that will be best for your city.
- Your group could decide, how you want to present your thoughts – presentation, debate, skit, etc.
- Persuade your class by explaining why you think this is the best action for a city to take.
- Listen closely to others and their ideas, they might persuade you!

## Activity 2 – My Vision

Create a vision  
of your Clean Air  
School/  
Neighbourhood




# What do we want?

A world where every school/neighbourhood is a clean air school/neighbourhood.

The student voice has the power to create real change.







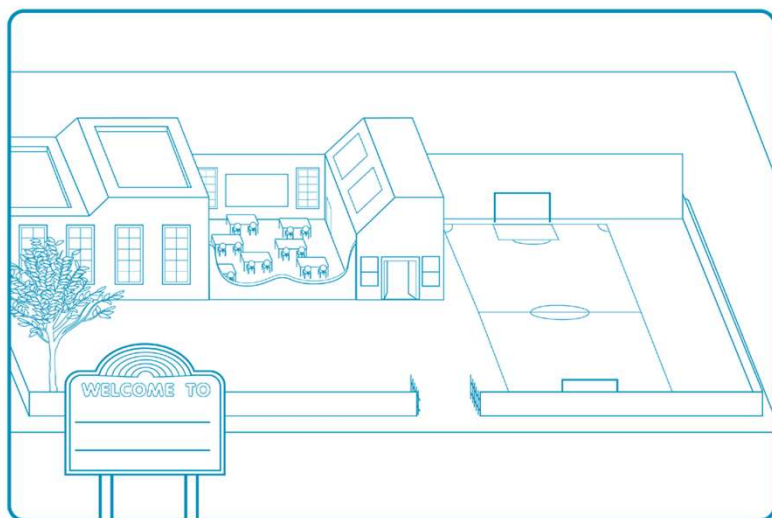
What could your  
Clean Air School  
or Neighbourhood  
have?

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

- 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/Neighbourhood

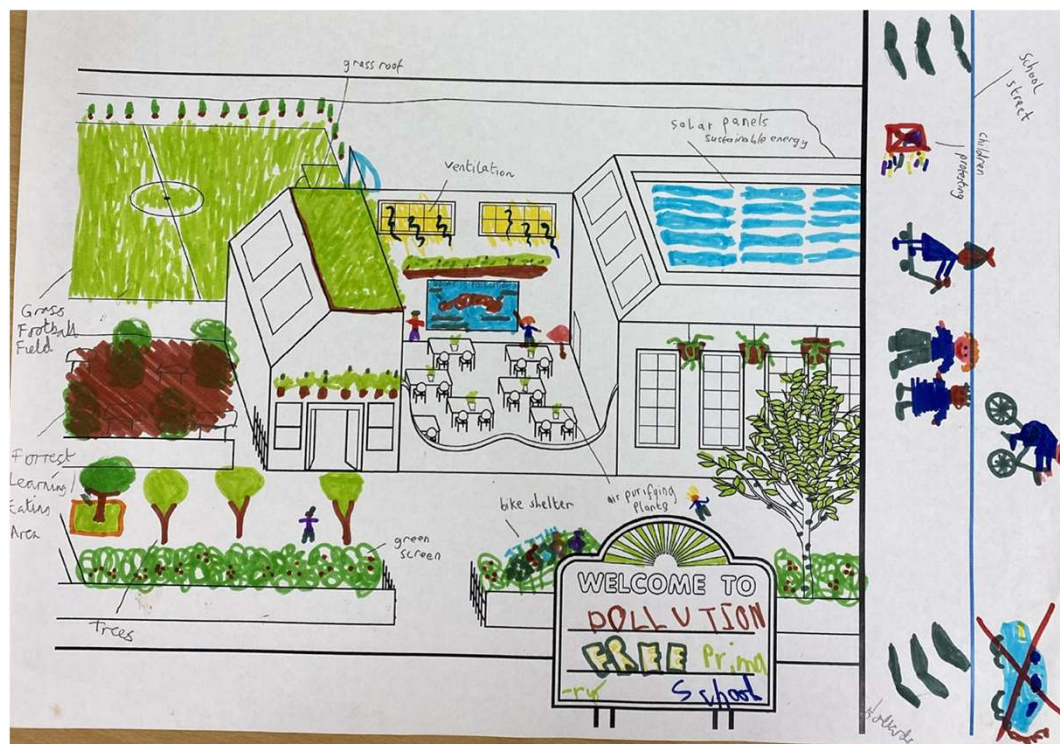
- Use the ideas emerged through discussion.
- Label your ideas and use colour!
- If you prefer you can draw your own too.



# What could you do with your clean air school/ neighbourhood vision?

Here are a few ideas:

- Prepare and share your designs with teacher, parents and others.
- Present them at assembly or school event– let others know why clean air and your ideas are so important.
- Display them on a notice board of your school – help others learn more about clean air.



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

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

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

# What is a right?

Rights are important things which we **need** to live a happy and healthy life.

We talked about some of these earlier...

PAUSE POINT

**Clean  
Air**

**Food**

**Clean  
Water**

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

**Warmth**

**Shelter**

**Fun!**

**Sleep**

**Exercise**

**PAUSE POINT**

 **Freedom to breathe**

# Needs and wants

What is the difference?

Need:

Something we must have to live a happy and healthy life

Want:

Something we like but we don't need



# Need or want?

What is the difference?

Mobile Phone  
Clean water  
Netflix  
Chocolate  
Hospitals  
Education

Clean Air?

PAUSE POINT

A young girl with curly hair, wearing a striped shirt and blue shorts, is smiling and looking towards the camera. She is standing on a colorful playground with red, blue, and yellow sections. The text "The United Nations Convention on the Rights of the Child (UNCRC)" is overlaid on the left side of the image.

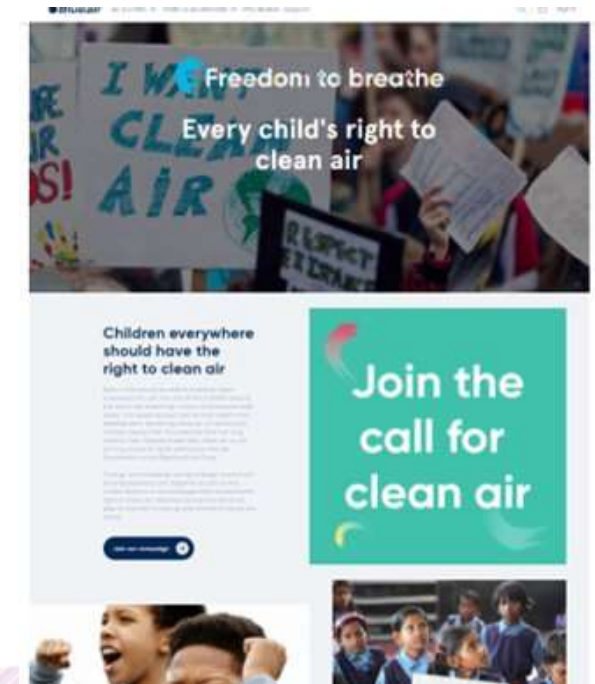
The United  
Nations  
Convention on  
the  
Rights of the  
Child (UNCRC)

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 that 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 voice will be shared along with other children from Delhi, London, Beijing and Los Angeles to tell right people know you think clean air should be a clear right.



Visit: [www.blueair.com/in/freedomtobreathe](http://www.blueair.com/in/freedomtobreathe)

Follow us on Twitter: @Join\_Ftb #Freedomtobreathe



# 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 – express yourself creatively using any of the methods:
  - Stories, poems, letters, songs, dance
  - Artwork – paintings, posters
  - Videos or photography (of actions and places, not people)



Freedom to breathe