

OVERVIEW OF THE WOKINGHAM AIR QUALITY PROJECT

LESSON 2

- These resources have been developed by the My Journey Team Air Quality Officer for Key Stage 2 pupils
- Teachers can use these resources however fits in best with their pupils learning.

Main Science curriculum links:

Yr 4 Science

Recognise that environments can change and that this can sometimes pose dangers to living things

Compare and group materials together, according to whether they are solids, liquids or gases

Yr 6 Science

Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.

Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function

Further curriculum links

Maths Geography & PSHE.



For further information on the
Wokingham Air Quality Project please contact :
Kathryn Horsepool
Active Travel Officer - Air Quality
kathryn.horsepool@wokingham.gov.uk
www.myjourneywokingham.com/schools/air-quality/



Introduction – further information for teachers

- Please note that this workshop is a pilot – please pass on your comments and feedback to the Wokingham Air Quality Project Officer
kathryn.horsepool@wokingham.gov.uk
- Further information on My Journey Wokingham please visit <https://www.myjourneywokingham.com/>
- For further information on Wokingham Town Centre AQMA https://uk-air.defra.gov.uk/aqma/details?aqma_ref=1602
- For further information on Twyford AQMA https://uk-air.defra.gov.uk/aqma/details?aqma_ref=1601
- There are lot of resources for teachers on the My Journey Wokingham Air Quality page.
<https://myjourneywokingham.com/schools/air-quality/>
- For further education resources please visit <https://www.cleanairday.org.uk/schools>



**This is Ann and Ehan.
They are going to tell you all about
what you can do to reduce air
pollution in Wokingham Borough.**



Introduction – further information for teachers

- Please pass on any comments and feedback to the Wokingham Air Quality Project Officer kathryn.horsepool@wokingham.gov.uk
- Further information on My Journey Wokingham please visit <https://www.myjourneywokingham.com>
- For further information on Wokingham Town Centre & M4/A329M AQMA's https://uk-air.defra.gov.uk/aqma/details?aqma_ref=129#320
- For further information on Twyford AQMA https://uk-air.defra.gov.uk/aqma/details?aqma_ref=1601
- There are lots of resources for teachers on the My Journey Air Quality pages <https://myjourneywokingham.com/schools/air-quality>



Task 1 - Take the Recap Quiz

Over the next few slides there will be questions
about things you learnt in

Lesson 1 - What is Air Pollution?

Grab a pencil or pen and your notebook and write
down what you think the answers are!

Let's go



Guidance

The recap quiz is going through content from Lesson 1 – what is air pollution so please ensure you watch Lesson 1 first.

Further Information

Please use the teachers notes from **Lesson 1 – What is Air Pollution**.

Please copy and past this link into your browser for the **Lesson 1 - What is Air Pollution (Teacher Notes)**

<https://www.myjourneywokingham.com/media/3802/air-quality-lesson-1-what-is-air-pollution-teachers-notes.pdf>

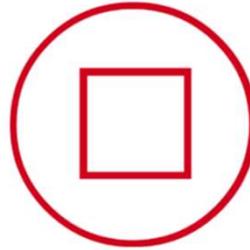
Ask them

What are the main causes of air pollution?

What are the main causes of air pollution in Wokingham?



Ehan says, "Stop the video after each question."



Teachers advice before using the recap quiz

- We advise that you pause the video after each but 10 seconds has been allowed at the end of each slide.
- The answers come up at the end of the questions on one frame.



Question 1



What is air quality?



Additional Information for teachers

- Air quality is a measure of how clean or polluted the air is.
- Monitoring air quality is important because polluted air can be bad for our health and the health of the environment.



Question 2

What causes air pollution?



Additional information for teachers

- Air Pollution comes from different sources such as
- **Transport**– such as cars, buses, planes, trucks, and trains
- **Industry** – such as power plants, oil refineries, industrial facilities, and factories and wood burning fireplaces.
- **Natural sources** – such as wind-blown dust, wildfires, and volcanoes



Question 3

**Write down one way
air pollution can affect
your health.**



Additional information for teachers

- Air pollution can be harmful to the heart
- Research has shown that air pollution can affect your heart and circulation by damaging the inside walls of your blood vessels, causing them to become narrower and harder.
- Restricting the movement of your blood vessels, can increase your blood pressure and add to the strain on your heart.



Question 4



Which harmful gas, which we are measuring at air quality schools, causes air pollution?"



ANSWER

- We are measuring nitrogen dioxide (NO₂) gas at our Air Quality Schools.
- Each Air Quality School has 3 diffusion tubes installed on the school site – one at the front gate, one at the main entrance to the school and one in the playground.
- The diffusion tubes are changed over every month and sent off to the laboratory so we can work out the concentrations of nitrogen dioxide gas around the school.



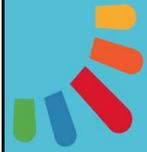
Answers

1. Air quality is the term we use to describe how polluted the air is we breathe.
2. Air pollution is produced when we burn fossil fuels, such as petrol and diesel used to power cars.
3. Air pollution can affect your lungs, especially if you have asthma, it can also affect your heart.
4. Nitrogen dioxide gas.



Additional information for teachers

- If you feel you students have a poor understanding of the topic please watch Lesson 1 again for recap.
- 1 mark can be allocated per question so max of 4
- Please copy and paste this link into your browser to watch **Lesson 1 – What is Air Pollution**
<https://www.youtube.com/watch?v=6-Z3UcS9avc>
- Please copy and past this link into your browser for the Lesson 1 - What is Air Pollution (Teacher Notes)
<https://www.myjourneywokingham.com/media/3802/air-quality-lesson-1-what-is-air-pollution-teachers-notes.pdf>



Ehan says, "You did great!"



- If a student gets full marks please tell them they are an **Air Quality Hero**



Ann says, "Time for a warm up task."

Individually, or in a pair, come up with a list of things you, your family or school does that causes air pollution outside?



The timer is set for five minutes. Please pause the video if you need longer.



Guidance notes

1. This slide will run for 5 minutes which has been already allocated in the video.
2. Please pause the video for longer if you need.

Teacher Guidance

Outside air pollution comes from:

- Fuel combustion from motor vehicles (e.g. cars and heavy duty vehicles)
- Heat and power generation (e.g. oil and coal power plants and boilers)
- Industrial facilities (e.g. manufacturing factories, mines, and oil refineries)



Ehan says, "Let's discuss your answers with the class."

The timer is set for five minutes. Please pause the video if you need longer.



Guidance notes

This slide will run for 5 minutes which has been already allocated in the video.

Please pause the video for longer if you need to.

Fact

- Air pollution across Wokingham Borough comes from transport, predominately private vehicles.
- As the borough is large in area and includes lots of small towns and villages (179 km²), many residents often travel around the borough using their own car rather than using public transport.
- This increases air pollution, especially in the hot spots which are Wokingham Town Centre and Twyford Crossroads.
- Many households in Wokingham Borough have more than one car.

Further questions

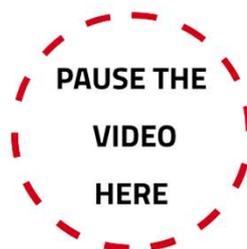
1. How many cars does your family have?
2. Why is using public transport better than using your car?
3. What part of the car does air pollution come out of in petrol & diesel cars?

ANSWER – air pollution comes out of the car exhaust



Ann says, "Let's take a break!"

- Step outside for some fresh air**
- Do some stretches**
- Jog on the spot**
- Star jumps**
- Or a mix of them all!**



PART 1

Ann wants to know, "What are the solutions to reducing air pollution?"

Can you think of any now?

Question

What are the solutions to reducing air pollution?

Answer

- In Wokingham air pollution comes from transport (cars and lorries).
- The best way to improve air pollution in Wokingham is to reduce the number of people travelling by car.
- The next section focusses on the benefits of using active travel.



One solution to reducing air pollution is using active travel instead of using the car.



Notes for teachers

Benefits of active travel

- Everyone benefits from active travel.
- It boosts physical and mental health
- Physical activity encourages healthy growth and development and helps to maintain a healthy weight, improving muscular strength, endurance and flexibility
- Travelling actively builds exercise into the daily routine. It is recommended that 5 – 18 year olds get 60 minutes of moderate or vigorous exercise every day
- <https://www.health.org.uk/evidence-hub/transport/active-travel>



**Ehan wants to know,
"What is active
travel?"**



Notes for teachers

- Active travel mean making a journey by being physically active rather than using the car.

Further information

- My Journey Wokingham works with schools to encourage safe, active and sustainable travel for children (and parents) to school, including walking, scooting, cycling, park and striding (parking at least a 5 minute walk away from your final destination) and public transport.
- <https://www.myjourneywokingham.com/schools/>



Active travel means making journeys by being physically active, like walking, scooting or cycling.



Notes for teachers

- Did you know that children who walk, cycle or scoot to school show higher performance, better concentration, increased wellbeing and self-esteem, and are exposed to less pollution than travelling by car?
- They are also more likely to choose sustainable travel options when they become independent.



Ann wants to know, "What is park and stride?"

Park and Stride is where parents park considerately in a nearby street, or car park close by, and then walk the short distance into school. This reduces air pollution and traffic congestion at the school gates.



Notes for teachers

- A park and stride is an informal arrangement where parents can walk their own children to school from a specific location e.g. a nearby car park.
- **For further information please see:**
<https://www.myjourneywokingham.com/schools/primary-schools/>
- <https://www.myjourneywokingham.com/media/3853/walking-bus-park-and-stride-start-up-guide.pdf>

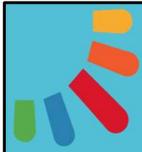


Ehan says, "Always remember, if you have to drive to
or from school then park and stride is best!"



How to set up a park and stride

1. Find out how many parents would be interested in using a park and stride.
2. Ask for their postcodes so that suitable start locations can be found.
3. Decide on a start location.
4. This should be a suitable place near the school where parents can park, normally within ten minutes' walk of the school. This could be a pub car park or village hall, for example.
5. Ask the owner of the start location for permission to use it for the park and stride.
6. Undertake a risk assessment of the route. (My Journey Wokingham can help with this).
7. Decide on a start date.
8. Promote the park and stride to parents.



Some schools have set up a walking bus to help more children walk to school!



What is a walking bus?

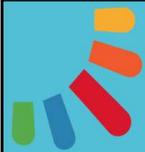


A walking bus is a group of children walking together, along an agreed route to and from school, accompanied by parents or school staff.



How to set up a walking bus

1. Identify how many parents would use the walking bus, and whether they might be available to help.
2. Ask parents for their postcodes so that a suitable start location can be found.
3. Find a suitable location, within ten minutes' walk of the school where parents can park. This could be a pub car park, or village hall, for example.
4. Ask the owner of the start point for permission to use it for the walking bus.
5. Undertake a risk assessment of the route. (My Journey can help with this).
6. Ask parents to register their children. This will ensure that the right number of adults can be there to supervise.
7. Set up a rota for adult volunteers if necessary.
8. Arrange DBS checks for volunteers.
9. Train your adult volunteers. (My Journey can provide training).
10. Purchase high vis jackets/vests for adults and children.
11. Choose a start date for the walking bus.
12. Promote the walking bus to parents.
13. Start the walking bus.



Ann says, "Why not develop a school travel plan to help increase the numbers of pupils walking, scooting and cycling to school?"

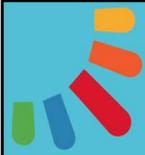


What is Modeshift STARS

To help schools promote sustainable travel among pupils, parents and staff, My Journey works with Modeshift to provide a step by step platform for creating and monitoring travel plans.

A travel plan is a strategic document that sets out how a school will promote sustainable travel. The Modeshift STARS online platform gives schools a simple to follow template for their travel plan.

For more information about Modeshift STARS, how to register and other helpful tips <https://modeshiftstars.org>



Ehan says, "The My Journey Wokingham Team can help you!"

We use the Modeshift STARS accreditation scheme to create your school travel plan."



Up to £2000 grant funding available to schools that earn at least bronze level accreditation, with more available as you progress through the levels.



What is Modeshift STARS

Modeshift STARS offers a nationally recognised system of accreditation.

There are five levels (Green, Bronze, Silver, Gold and Platinum).

The Council offers rewards for schools that achieve a new accreditation or reach the next level.

For bronze and above, schools can apply for up to £2,000 in grant funding for each level.

The funding must be used to promote sustainable travel.

- A champion is required to run the Modeshift STARS scheme in each school - this can be a teacher, parent or governor.
- If you would like to champion Modeshift STARS in your child's school, please talk to the school and/or contact us.



Ann and Ehan say, "It's competition time!"

Can you name five different ways we can actively travel to school?"

WALK



SCOOT



RUN



PARK & STRIDE



CYCLE



Notes for teachers

The questions and the answers on the slide have been slowed down deliberately to give pupils enough time to think about their answer.



In Summer 2021, we had an active travel challenge game, called Beat the Street, that many schools took part in.



What is Beat the Street?

Beat the Street turns towns into giant games.

Earn points, win prizes and discover more about your area by walking, running and cycling.

Pick up a Beat the Street card and swipe Beat Boxes across your community.

Wokingham had a successful game in Summer 2021 where 6,263 participants racked up 151,531 active travel miles! .

To find our more <https://www.beatthestreet.me/>

Beattie says, "Let's get moving before we start Part Two."

Please pause the video here.

Why not go outside and have a game of playground bingo?

Please paste the link for Playground Bingo into your browser.

<https://cutt.ly/UKKoL9L>

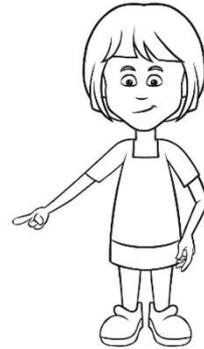
my Journey
HELPING WOKINGHAM GET AROUND

Here is the link to cut and paste into your browser for playground bingo

<https://www.myjourneywokingham.com/media/3768/playground-bingo.pdf>

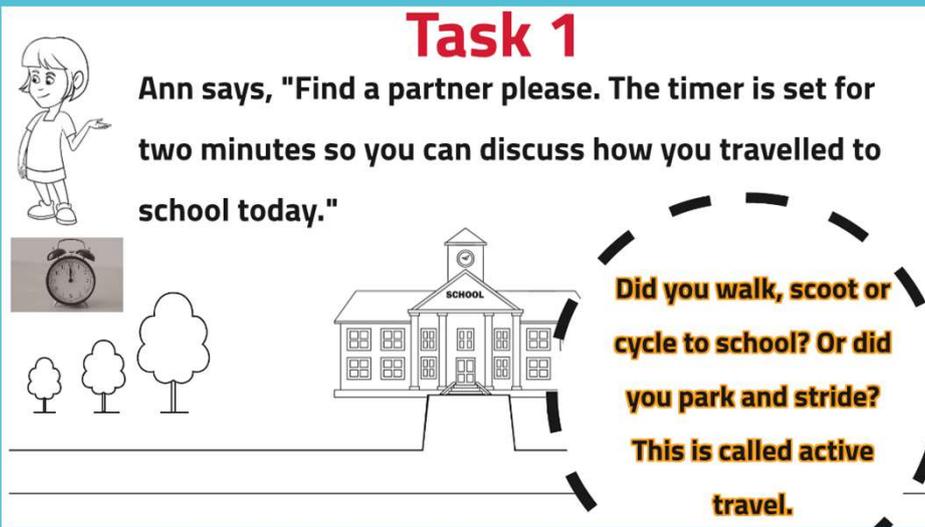


PART 2



Are you ready.....?





Task 1

Ann says, "Find a partner please. The timer is set for two minutes so you can discuss how you travelled to school today."

Did you walk, scoot or cycle to school? Or did you park and stride? This is called active travel.



Notes for Teachers Task 1

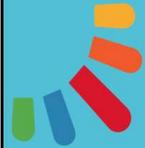
Discuss how you travelled to school

You may want to do a hand up survey with your class.

Please see a link to google forms travel survey you may like to use. Please contact myjourney@wokingham.gov.uk to access the results.

https://docs.google.com/forms/d/e/1FAIpQLScpe2-wZVoDCBIJe_otz0l-qJVGp_O_zyqEIB1bGHyzDliiQ/viewform?usp=sf_link

If you have a login for Modeshift there is a hands up survey under your school's travel plan section.



Task 2

Ehan says, "You have five minutes to think about these questions. Note down your answers on a piece of paper before discussing with the rest of your class."

- 1. How do you prefer to travel to school?**
- 2. Why do you prefer to travel this way?**
- 3. Would you like to travel this way more often?**
- 4. What is stopping you from doing this?**



Notes for teachers Task 2

- Get pupils into small groups (max 4) to discuss the four questions.
- The slide will run for five minutes to give them time to discuss their answers.
- If pupils need longer please pause the video here.



Further information for teachers on how to trees remove air pollution

- Trees and other vegetation planted in the right places can help improve urban air quality on a local scale by forming a barrier between people and pollutants.
- Tree absorb toxic gases through their leaves and effectively filtering the air.
- They also remove some particulate pollution from the air by catching the tiny particles on their leaf surfaces.
- Research has found significantly lower asthma rates among children aged 4-5 in areas with more street trees.
- As well as reducing air pollution, trees take carbon dioxide from the air, helping in the fight to limit further climate change.



Trees Help Fight Against Climate Change

Our natural environment is being damaged by the air pollution humans produce.

Planting trees helps us stop climate change, as trees suck up carbon dioxide gas.

Wokingham Borough Council has launched the Garden Forest Scheme to plant thousands of trees all over the borough.

Why not plant some trees at your school?



Further information on how trees help fight against climate change

- Trees absorb Carbon Dioxide (CO₂) through their leaves during a process called Photosynthesis.
- Therefore taking excess CO₂ out of the air can help remove some of the excess CO₂ from human activities e.g. burning fossil fuels.
- Something that schools can do, where they have space, is plant more trees.
- If you are interested in planting more trees at your school please get in touch with Freely Fruity.

 www.freelyfruity.org



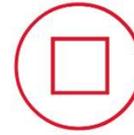
Ann says, "Let's take a break before we start Task 3!"

- Step outside for some fresh air
- Do some stretches
- Jog on the spot
- Star jumps
- Or a mix of them all!





Ehan says "Task 3 is to write a letter to your local Member of Parliament (MP)."



Pause the video here and use the template in the My Journey KS2 Eco Activity Pack, write a letter to your local MP.

Please copy and paste this link <https://cutt.ly/MKKQI3e>

Please include information on where air pollution comes from in Wokingham Borough.

Suggest solutions to reducing air pollution, such as using active travel and planting more trees.

Make sure you mention the benefits of using park and stride, if you live too far away to walk, scooter or cycle all the way to school!



ASK

What information do you need to include in your letter to your Member of Parliament (MP)?

Make sure you consider

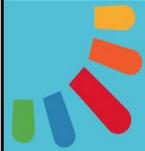
- What is the main source of air pollution in Wokingham Borough?
- What is the name of the gas that is harmful to our health?
- How does it affect our health?
- Suggest some different solutions to reducing air pollution.

Notes for teachers

Please cut and paste this link into your browser

<https://www.myjourneywokingham.com/media/3116/eco-activities-booklet-for-ks2.pdf>

The template for writing a letter to your MP is on the **last page of the KS2 Eco-activities booklet.**



**YOU
DID
GOOD**



Ann and Ehan say, "Well done Air Quality Heroes!"

You have completed Lesson 2 - Solutions to Air Pollution.

**Look out for Lesson 3, the last lesson, it will be about
creating an eco-travel group for your school."**



Notes for teachers

- Look out for **Lesson 3** which is the final lesson on air quality in Wokingham.
- This lesson will look at how to set up an eco or active travel group for your school.
- The purpose of setting up this group is to encourage more pupils to use active travel, to travel to school.



A special thanks to Mrs Donaldson for assisting with grammar and content and Stewart Turkington Photo & Video for helping put the lesson together.

THANK
YOU!

