

Big Pedal 2021

# Amazing air investigation

Level three worksheet page one



## Aim

- To discover what is causing air pollution around your school or local area.
- To predict the difference in air pollution in two different locations.
- To think about what modes of transport produce the most/least air pollution.

## Hypotheses

- Which mode of transport do you think you will see most in each location and why?
- Which mode of transport do you think you will see least in each location and why?
- Which location do you think will have the most air pollution and why?

## Method

Conduct a count in each of your two chosen locations. Carry out the count for the same amount of time in each location. If a bus passes by, try and count all the passengers as accurately as you can.

When you get back inside, calculate the emissions for walking, cycling, car and bus using the emissions data at the bottom of the next page.

Mode of transport	Location A		Location B	
	Count	CO2 Emissions	Count	CO2 Emissions
Person walking, jogging, running, scooting or using a wheelchair				
Person cycling				
Car or van				
Bus (number of passengers)				
Other large vehicle (eg tractor, lorry)				

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Level three worksheet page two



## Conclusions

Which mode of transport passed by most frequently during your investigation?

Which mode of transport do you think makes the most air pollution in each location?

Which of these modes of transport do you think is best for the environment?

Can you rank the modes of transport based on how much they are polluting in each location?

We based our bus emission calculations on emissions per passenger per mile. Why do you think we did that?

How would the picture have changed if you had looked at the emissions per mile per bus (rather than emissions per passenger per mile)?

## What's the best way to get to school?



Walking



Cycling



Train



Bus



Car share



Drive and park

**Most sustainable**



**Least sustainable**

Cars emit 0.30 kilograms of CO<sub>2</sub>/ mile.

Buses emit 0.18 kilograms of CO<sub>2</sub>/mile per passenger.

Trains emit 0.08 kilograms of CO<sub>2</sub>/mile per passenger.

Please note: Carbon emissions can vary according to specific types of vehicle, such as a small or large car. The figures used above are based on certain averages and you can use them as the starting point for further investigation.

Source: Department of Transport, 2020