

JOURNEYS THROUGH NATURE

Pollution solution

About this activity

When we look around, we do not usually see the 'air' so it is easy to assume that our air is clean. In reality, the air and the pollution in it are made up of mostly invisible gases. Many pollution particles are so small that we cannot see them. This means that it is hard to know if the air we breathe is clean or polluted. This experiment will help you discover how we can test for air pollution.

Time

1 hour

Kit list

- ✓ Bicarbonate of soda dissolved in water ("pollution")
- ✓ Red grape juice ("reagent")
- ✓ Droppers/spoons
- ✓ Beakers/cups (ideally white or clear)
- ✓ Sticky labels
- ✓ Paper
- ✓ Pen or pencil for recording ideas

Advance activity for teachers:

- ✓ Make 2 types of sample in large containers e.g. litre bottles: (A) neutral (just water) and (B) polluted (Add around 1-2 teaspoons of bicarbonate of soda per 500ml of water).
- ✓ Label the container of plain water (A) 'Park' and the water mixed with bicarbonate of soda (B) as 'Busy road'.

Instructions:

- 1 Your teacher should give you two containers of water. One labelled 'Busy road' and one labelled 'Park'
- 2 Make a hypothesis about whether a busy road or a park would be likely to be more polluted.
- 3 Use a teaspoon or pipette to add ten drops of the 'reagent' to each container.
- 4 Watch for a reaction to see if the reagent changes colour when it is added to the sample.

- 5 Which container has the 'pollution' and which one does not? Is the more polluted container the busy road or the park? Why do you think this? Was your hypothesis correct?
- 6 What do you think are the biggest causes of pollution in the UK?
- 7 Can you think of any solutions to air pollution? Try designing a vehicle that creates no pollution.

Next steps:

- ✓ Why not write a letter to your local MP with your thoughts about air pollution?

Use ClairCity's letter template: claircity.eu/2018/10/15/teachers-toolkit

- ✓ Make a poster about air pollution and what teachers and students can do to reduce it.
- ✓ Make a transport Top Trumps card game. You can make cards with existing transport options in your area and invent some futuristic ones too. Score each mode of transport on different attributes: Is it clean for the air? Is it fast? How expensive is it?
- ✓ This activity can be put towards a CREST Discovery Award and there are plenty more online activities you could try for free. For more information, follow this link: crestawards.org/crest-discovery

