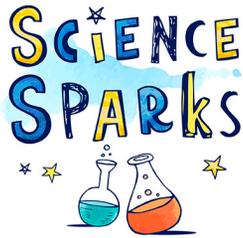
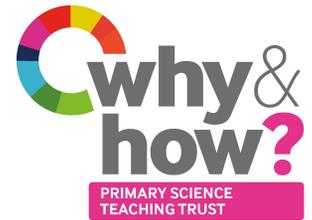


SCIENCE FUN AT HOME



Have some fun at home with these science activities from **Science Sparks** and the **Primary Science Teaching Trust**



BEFORE YOU START! Please read through this with an adult:

- * Make sure you have read the 'IMPORTANT NOTICE' on the back of this page.
- * If you have a space outside that you can use safely, then you can do the 'Try this outdoors' activity outside. Don't worry if not as you could still do it indoors.
- * Talk to your adult about sharing the science you have done and if they want to share on social media, please tag [@ScienceSparks](#) and [@pstt_whyhow](#) and use [#ScienceFromHome](#)

SCIENCE FOR CLEAN AIR DAY

1 TRY THIS INDOORS What a stink!

You need two people for this activity, one at each end of a room or corridor, with Person 1 holding some spray air freshener, deodorant or perfume. Person 1 sprays a small puff (**SAFETY NOTE:** always avoid spraying near anyone's face and especially eyes). Person 2 then walks slowly towards Person 1 until they sense the smell at which point, either mark the spot or measure the distance to Person 1. Or, Person 2 could stay still and use a timer to see how long it takes for the smell to reach them. Next try swapping Persons 1 and 2 over, or try using a different scent spray.

WHAT DO YOU NOTICE?

Things to talk about ...

Can you smell some perfumes, air fresheners or deodorants from further away than others? Can some people smell things from further away than others? What types of smell seem to travel fastest or furthest?

You will need

- * Spray perfume, deodorant or air freshener (choose something with a strong scent)
- * Measuring tape/ruler or timer
- * Magnifying glass for examining lichen (optional)



2 TRY THIS OUTDOORS ... Looking for Lichens

Look closely at the trees around you – can you see anything growing on the trunks or branches? If so, you might have spotted some lichen. There are many different types of lichen, but by identifying which species you have found, you can learn about the quality of the air nearby. Some types of lichen struggle to grow in polluted air, while others grow well.



WHAT DO YOU NOTICE?

Things to talk about ...

Which types of lichen did you find growing near roads? Which types of lichen did you find **not** near a road, or in green spaces like a park?



3

WHAT IS THE SCIENCE?

We can smell a scent from a distance because the particles of gases in the air and the scent spray are moving randomly. So the scent spray particles gradually spread out, moving away from where they are most concentrated to where it is least concentrated. This process is called **diffusion**.

Lichens consist of two types of organisms - a fungus and either an alga or a type of bacteria - that live together and depend on each other. The fungus makes the body that protects the alga/bacteria, and the alga/bacteria provides the food for the fungus. Common types to look out for: **Hypogymnia** has large, green-grey lobes, but it won't grow where there is air pollution; **Usnea** looks like a green beard and is usually found hanging from tree branches. It indicates a clean-air environment as it doesn't like the nitrogen found in polluted air; **Cushion Xanthoria** is bright-yellow or orange lichen. It loves nitrogen so it is an indicator of polluted air.

4 MORE ACTIVITIES YOU COULD TRY

MAKE A FAKE LUNG www.science-sparks.com/breathing-making-a-fake-lung/

FIND OUT MORE ABOUT LICHEN www.imperial.ac.uk/opal/surveys/airsurvey/

WATCH 'GASES IN THE AIR' – A SCIENCE SHOW WITH SOME EXCITING SUPRISSES!
www.pstt.org.uk/resources/curriculum-materials/citizen-science-air-pollution (to find the video, click on the tab 'Classroom Resources' and scroll to the bottom of this page)

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These activities are designed to be carried out by children working with a parent, guardian or other appropriate adult. The adult involved is fully responsible for ensuring that the activities are carried out safely.