

Taste Test – Hidden Pollutant Experiment



GREEN-SCHOOLS
STAY HOME - WATER

Often our rivers, lakes and oceans are polluted with chemicals that we can't see. Whether it's from industry, agricultural run-off, wastewater or domestic waste like artificial cleaning products, these chemicals can have a severe impact on aquatic plants and animals.

In this experiment you will be setting up six glasses of what appears at first glance to be water - but your volunteer(s) will have to use their senses of smell and taste to work out what the hidden "pollutants" are! This experiment is a fun way of highlighting important issues around water pollution.



Set up time: 15 minutes Wait time: None

What do you need?

1. About 6 x clear glasses, preferably the same size and shape
2. Cotton buds (paper ones are more eco-friendly)
3. "Pollutant" ingredients: White vinegar, flavoured still waters (e.g. lemon & lime, and strawberry, or flat 7up), salt, sugar, peppermint and/or vanilla essence
4. Access to a tap
5. Pen and paper
6. Kettle (optional - ask an adult for help!)
7. 1 or more brave volunteers 😊

Warning! Make sure you check that your volunteers don't have any allergies to any of the ingredients you are using.

What do you do?

1. Make sure your volunteer is **not** in the room while you are setting up, make sure to hide any evidence of “pollutants” (e.g. vinegar bottle) before they come in.
2. Set up your six glasses in a row on a table – you can label them “a” to “f”. On your piece of paper write the numbers “a” to “f” in a column.



3. Fill each glass with one of the following (you don't have to fill them very high, just make sure they are all at the same level):
 - a. Water
 - b. Sugar water (see next page “Making Pollutants”)
 - c. White vinegar
 - d. Lemon & Lime water
 - e. Salt water
 - f. Water with a couple of drops of peppermint or vanilla essence



4. On your sheet of paper make a note of what you put in each glass (don't let your volunteer see!). All of the glasses of liquid should look more or less the same (like water!) – some “pollutants” like vanilla essence may show a slight colour, so only use one or two drops to minimise this.

5. When you're ready ask your volunteer to come and observe the experiment – ask them what they see? Do the glasses of “water” all look the same?
6. Tell your volunteer that they will be investigating the contents of each glass. Ask your volunteer to dip a cotton bud in Glass A and to smell and taste it. What do they think it is? What does it smell like? What does it taste like? Note their response.
7. Your volunteer then repeats Step 6 for all six glasses. **If you have several volunteers taking part, they should change cotton buds for each glass to ensure good hygiene.**
8. When they are finished reveal the answers and compare with their guesses.

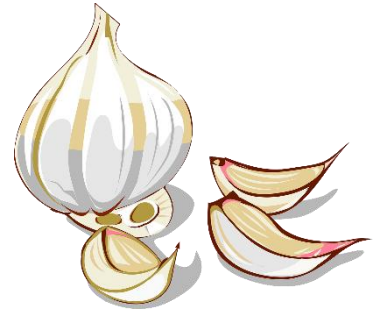


Questions

- How many did they guess correctly? Were they surprised by any?
- It's easy to see litter pollution but can you think of sources of water pollution that we can't see? What other kinds of environmental (not just water) pollution are there that we can't see?

Making Pollutants

- To make **sugar water** or **salt water** it's best if you start using warm water (it doesn't have to be boiling), as this allows the sugar/salt to dissolve more easily. Just add a teaspoon or two of the sugar/salt to the hot water and give it a good stir to dissolve, then allow it to cool before the experiment.
- The "pollutants" used in this experiment are just a sample - Can you come up with any others? For example, you can make garlic water by putting a couple of peeled garlic cloves in warm water over night....mmm tasty!



Find out more about water pollution:

<https://www.worldwildlife.org/threats/pollution>

<https://www.epa.ie/irelandsenvironment/water/>

<http://www.swanireland.ie/threats-to-our-waters>

Make your own natural cleaning products:

<https://greenschoolsireland.org/resources/cleaner-cleaning-products/>

<https://littlegreenshop.ie/2018/10/homemade-cleaning-recipes-and-tips/>

