



HANDS-ON EXPERIMENTS

SOIL PH TESTING



Plants need specific soil conditions to grow. pH is the measure of how acidic a substance is, and can be measured using an indicator; a chemical that changes colour in different pH conditions. Red cabbage contains anthocyanin, which we can extract using hot water to make a purple-blue solution. In acid (vinegar, lemon juice) it turns pink-red, and in alkaline (chalk, bleach) it turns green-yellow. As the pH depends on the chemicals within the rock the soil was made from, we can work out what the soil is made of.

Procedure

You will need a kettle, a tea strainer, a red cabbage, two beakers, test tubes, test tube rack, some soil samples, and some household liquids

- Chop up the red cabbage, place it in a beaker and pour over some boiling water, then leave this to cool to room temperature before straining into the second beaker. Make a note of the colour of this solution.
- Fill six test tubes to a level of 4 cm with the cooled red cabbage solution.
- Add acidic vinegar to one test tube and alkaline bleach to another test tube and note the colour of each to better understand the colour range.
- In the remaining test tubes, add one spatula of soil from four different areas outside and note the colour change.

Investigation

- what colour does your indicator solution go?
- - what does this tell you about the soil you have tested?
- - what rock type could this soil have come from?
- - what colour would you expect volcanic soil to turn and why?

VIDEOS FOR THIS RESOURCE AT:

INTRODUCTION:



Clickable Link:

<https://youtu.be/Fg1bJ1K-48Q>

CONCLUSION:



Clickable Link:

https://youtu.be/jNn4DHXV_7Q

