ACIDS, ALKALIS AND INDICATORS

Can we make a rainbow using only clear liquids?



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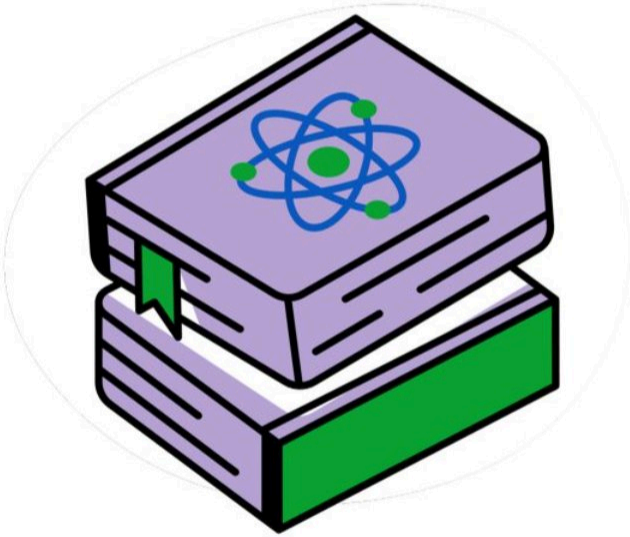
THINK, PAIR, SHARE



What sour or soapy liquids do you know at home?



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BIG IDEA

Acid plus alkali cancel out to make salt and water.

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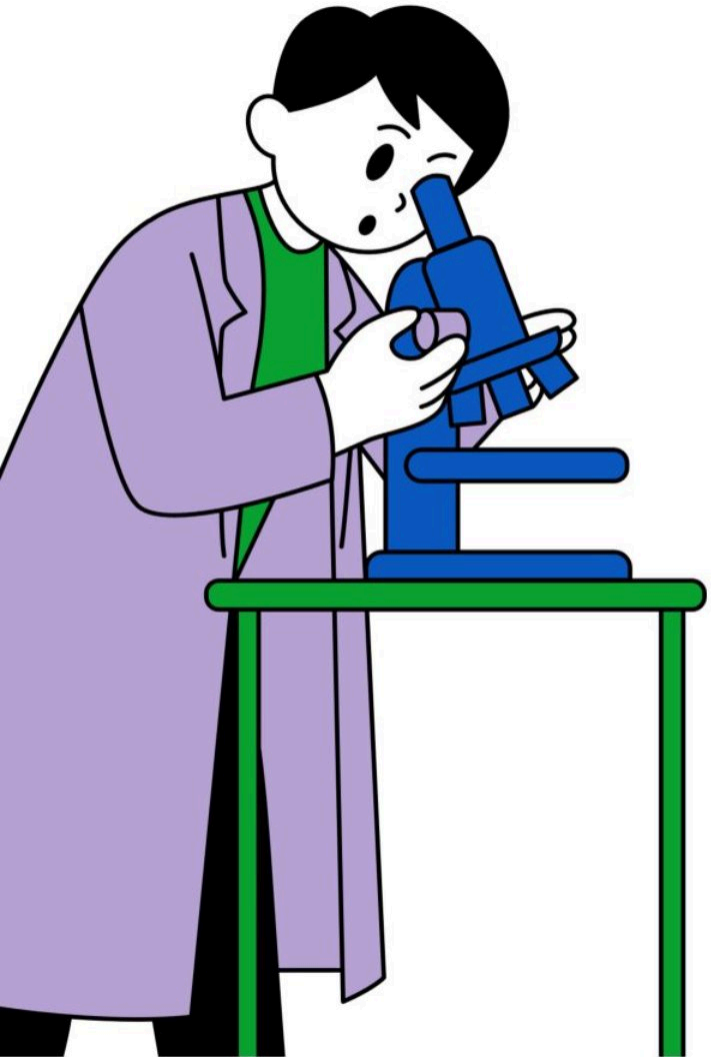
ACIDS AND ALKALIS AROUND YOU

- Lemon juice and vinegar are weak acids
- Vinegar contains ethanoic acid
- Liquid soap and shampoo are alkalis
- Oven cleaner is a strong corrosive alkali





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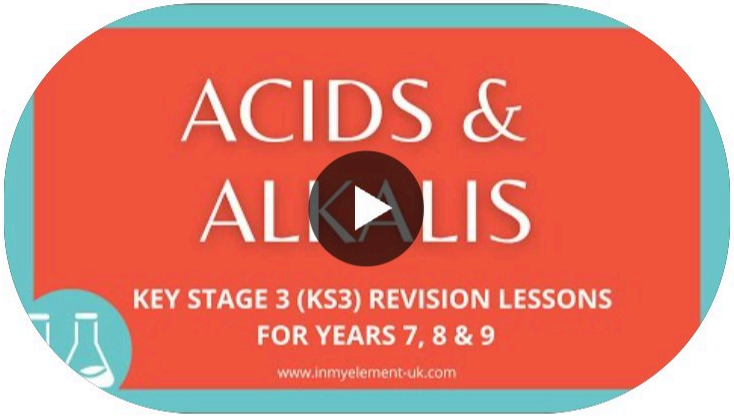
WHAT COULD THIS BE?

This liquid turned bright green with universal indicator. Acid, alkali or neutral?



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ACIDS, PH AND COLOURS



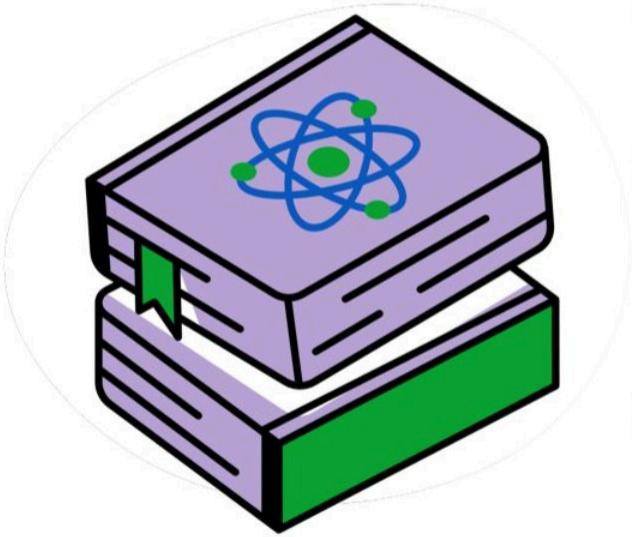
▶ 0:00 – 4:38

- Spot one pH number for acids and alkalis
- Spot one colour for acid, neutral and alkali



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THREE WAYS TO TEST



1. Litmus: red in acid, blue in alkali
2. Universal: red acid to purple alkali, green neutral
3. Natural: red cabbage, tea and rose petals change colour



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WHAT HAPPENS IN NEUTRALISATION?

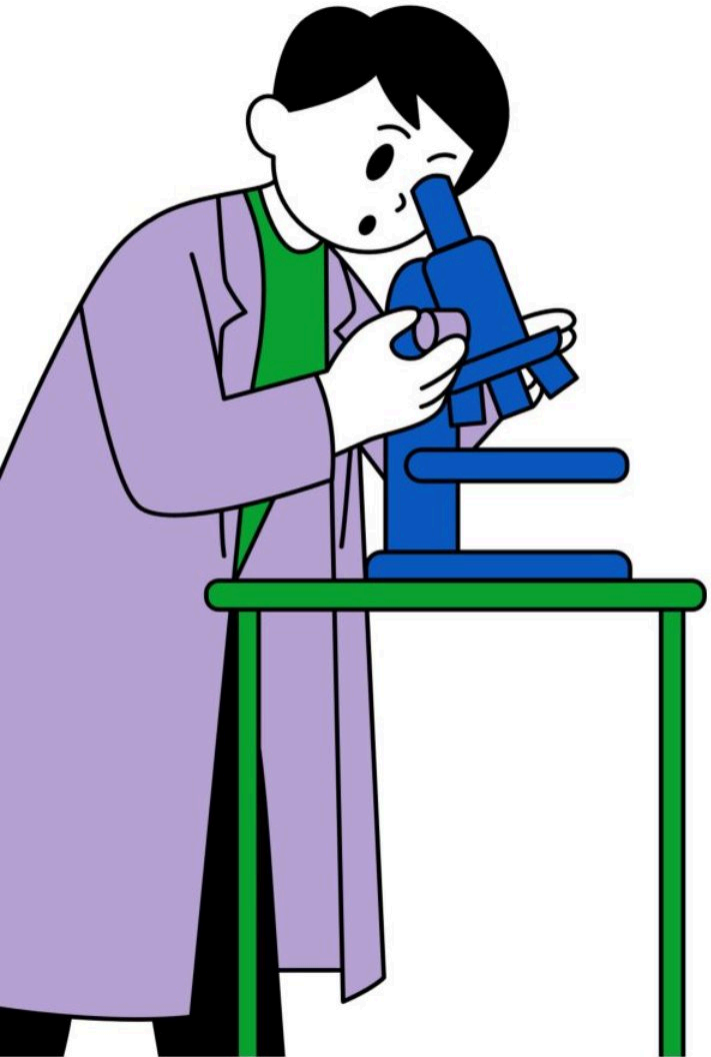


▶ 0:00 – 5:00

- Listen for the two products made every time
- Spot when you get a neutral solution



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YOUR TASK

Test five clear liquids and line them up from most acidic to most alkaline.

1. Predict acid or alkali, then add a few drops of universal indicator.
2. Record colour, match pH chart, decide acid, alkali or neutral.
3. Order tubes red-orange to green to blue-purple and write acid + alkali -> salt + water.

25 min

In pairs

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DID YOU KNOW?

Red cabbage juice is a real indicator.

It changes colour in acids and alkalis, just like tea and rose petals.

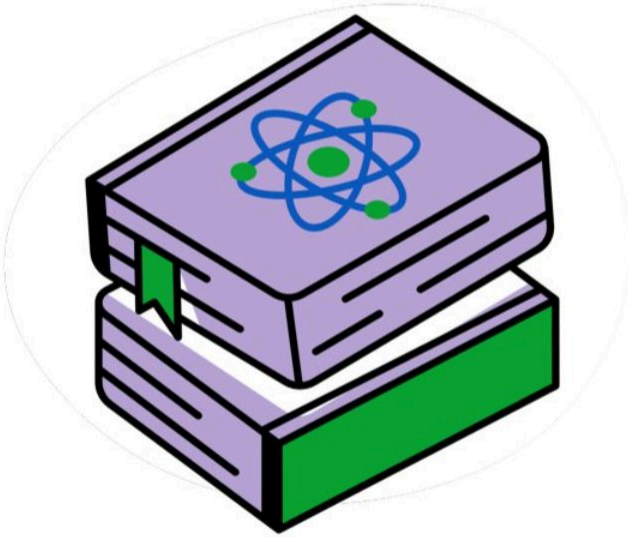


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WHICH INDICATOR FOR POND WATER?



You are testing pond water outside. Which indicator would you take?

- **A** Universal indicator paper
- **B** Litmus paper
- **C** Red cabbage juice

Vote with your hands, then explain why.

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TRUE OR FALSE?

All acids are dangerous and corrosive.

Universal indicator is green at pH 7.

Litmus paper tells you the exact pH number.

Acid + alkali -> salt + water.



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