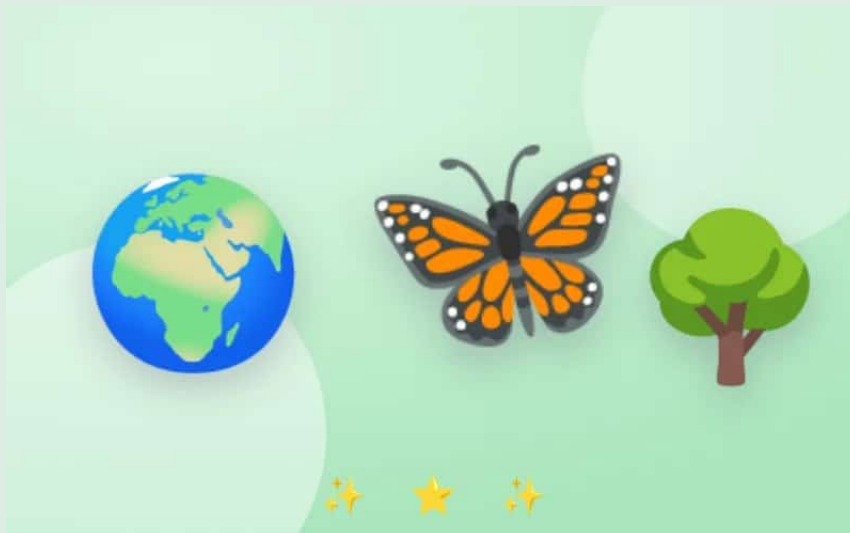




WEEK 1

Ages 12+ · Class 7–8

Science & Our World

Acids, Bases and Indicators

Big question of the week: How can a cabbage tell an acid from a base?

पत्तागोभी अम्ल और क्षार में अंतर कैसे बताती है?

Investigate — question, hypothesis, test, conclude.

THIS PACK BELONGS TO

Name: _____

Age: _____

Class: _____

WHAT YOU WILL LEARN

- ★ Big question: How can a cabbage tell an acid from a base?
- ★ Guess, try it at home and find out why
- ★ New words: acid, base, indicator, neutralisation, pH

WHAT'S INSIDE

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| 1 This week's big question | 5 New words |
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| 4 ★ Find it around you | |





FOR GROWN-UPS

Let your child plan the test: what will change, what will stay the same and what will be measured. Help only with safety, and discuss the results together.

1 This week's big question



Big question: How can a cabbage tell an acid from a base?

पत्तागोभी अम्ल और क्षार में अंतर कैसे बताती है?

Small questions to wonder about:

Why does a bee sting hurt and baking soda help?

What is neutralisation?

My guess: Hypothesis: lemon juice and vinegar will turn red-cabbage juice pink; soap and baking soda will turn it green.

Draw or write what you think will happen

How did I do?



Grown-up's note: _____





2

Let's find out: Natural indicator test



You need:

- red cabbage juice (boil chopped leaves with a grown-up and strain)
- lemon juice, vinegar, baking-soda water, soap water, plain water
- six transparent cups and a spoon

- ☐ 1. Pour the same amount of cabbage juice into each cup (control: plain water).
- ☐ 2. Add one spoon of a test liquid to each and stir.
- ☐ 3. Record the colour and classify: acid, base or neutral. Then mix vinegar into the baking-soda cup and watch.

With a grown-up: A grown-up handles boiling. Do not taste the solutions; never use strong cleaners or toilet acids.

Fill in what you saw:

	Colour	Acid / base / neutral
Lemon		
Vinegar		
Baking soda		
Soap		
Water		

How did I do?



Grown-up's note: _____





3

Why did it happen?



- The pigment in cabbage changes colour with acidity (pH).
- Acids taste sour and turn the juice pink-red; bases feel soapy and turn it green-yellow.
- Acid + base $\rightarrow$ salt + water (neutralisation): that is why antacids ease acidity.

Now tell it to a grown-up in your own words. Was your guess right?

DRAW IT HERE

Draw something you learned on this page.

How did I do?



Grown-up's note: _____





4

Find it around you



Find which home products are acids or bases from their labels.

Draw or write what you found

DRAW IT HERE

Draw something you learned on this page.

How did I do?



Grown-up's note: _____





5

New words

.....

acid

base

indicator

neutralisation

pH

Say each word and point to it in your home or in a book.

DRAW IT HERE

Draw something you learned on this page.

How did I do?



Grown-up's note: _____





6

What do you think — and why?

.....

Tick True or False.

1. Lemon juice is acidic.

True ☐False ☐

2. Bases taste sour.

True ☐False ☐

3. Acid and base neutralise each other.

True ☐False ☐

4. Litmus is an indicator.

True ☐False ☐

Choose one sentence and tell a grown-up WHY it is true or false.

DRAW IT HERE

Draw something you learned on this page.

How did I do?



Grown-up's note: _____





7

Think and tell



Why is acid rain harmful?

How do farmers correct acidic soil?

Why are strong acids dangerous?

What did you find out this week?

Was your guess right? Why, or why not?

What new question do you have now?

My own question this week

