

The eggshell test

Years 5 and 6 · Lesson 3 · Demineralise, remineralise
Draft for the clinicians' review — honesty list H1, H9, H10, H23

Write the fair-test plan, record what you observed at 24 hours, classify the change, and name one thing this test cannot show us about teeth.

1. Our plan

We will change ...

We will measure ...

We will keep the same ... and ...

We think ... will happen because ...

2. What we saw at 24 hours

	Soft drink	Juice	Water (control)
Appearance			
Feel			
Mass (if scales)			

3. Reversible or irreversible?

☐ Reversible

☐ Irreversible

4. What this test cannot show us

Acidic liquids only. Do not taste anything. Wash your hands.

The eggshell test — answer key

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Block 1

Changed variable is the liquid; measured variable is the change in the eggshell, by appearance, feel or mass; controlled variables must be two of time, temperature, volume of liquid, size or source of eggshell.

Block 2

In an acidic drink, the shell softens, loses surface and may lose mass; in water it should be largely unchanged. Accept any accurately recorded observation, including a null result.

Block 3

Irreversible, because the dissolved shell does not come back.

Block 4, the block that matters

Any one of these is correct: there is no saliva in the jar; there is nothing putting minerals back; a tooth is not made of the same mineral as eggshell; a real mouth gets gaps between acid exposures; a tooth is not soaked for 24 hours without a break.

Do not accept "because it is not a real tooth" without a reason attached.

Rubric line

Plans a fair test and judges what it can show.

Working towards: names what will change and what will be measured.

At standard: names the changed variable, the measured variable and two held the same, and classifies the change correctly.

Above: does that and names a specific reason the test cannot stand for what happens in a mouth.

Label the jar

The jar is labelled "acid dissolving a calcium mineral", never "tooth decay". Eggshell is calcium carbonate; enamel is a calcium-deficient carbonated hydroxyapatite.