



Acid Attack

5-12 yrs | 10 min setup | Stage 2-3



Chalk fell into vinegar!

What happens when chalk soaks in a weak acid (vinegar)?

? Wonder & Predict

I PREDICT THAT.....

- Nothing will happen
- The chalk will change a little
- The chalk will change a lot
- Something else: _____

There are no wrong predictions.

WHY DO YOU THINK THAT?

What you will need



• Chalk sticks



• Vinegar



• Water



• Two cups



• kitchen scales



• ruler

Investigate

Follow the steps carefully while observing.

1 Record Your Chalk

Draw or describe your chalk before the experiment begins.

2 Measure

Measure the mass of each piece of chalk with kitchen scales or its length with a ruler.

3 Set Up

Place one piece of chalk in vinegar and one in water.

4 Which do you think will change the most?

- Water Vinegar Both the same

5 Observe

Look carefully after 1 hour and again after 24 hours. Do you notice bubbles, changes in colour, or changes to the chalk?

6 Compare

Measure the chalk again and compare it to your first measurements. Which piece changed the most?

Observe & Record

What clues did you discover?

- Bubbles appeared on the chalk
- The vinegar became cloudy
- The chalk became smaller
- The chalk became softer
- A sediment appeared at the bottom.
- The chalk in vinegar changed more.
- Something surprised me



What did you observe?

Write or draw what happened to your chalk after 24 hours.



What happened?

Fill in the sentences using words from the box.

acid | bubbles | chalk | vinegar | gas | reaction

1. The chalk was placed into _____.
2. Tiny _____ formed on the surface.
3. The vinegar is a weak _____.
4. The chalk and vinegar underwent a chemical _____.
5. The bubbles were made of a _____.
6. The chalk and vinegar created a chemical _____.



The science behind it

Why did bubbles appear?

When vinegar touches chalk, a chemical reaction begins.

One clue is the bubbles you observed.

The reaction slowly changes the chalk and produces bubbles of gas.

Over time, the chalk becomes smaller as the reaction continues.

What does this have to do with acid rain?

Rain is usually only slightly acidic.

However, over many years, acidic rain can slowly react with some types of stone.

Scientists study this process to understand how buildings, statues and monuments change over time.



Take it further - Investigation Extension

Acid Challenge

Scientists often change one variable and observe what happens.

Which of these do you think would make the chalk change the fastest?

- Cold vinegar from the fridge
- Room temperature vinegar
- Warm vinegar (adult help required)

My prediction

Professor Picklebottom
Explorer of Everything



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Professor Picklebottom
EXPLORER OF EVERYTHING



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Could a weak acid really change a statue?

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Great investigations start with great questions.