

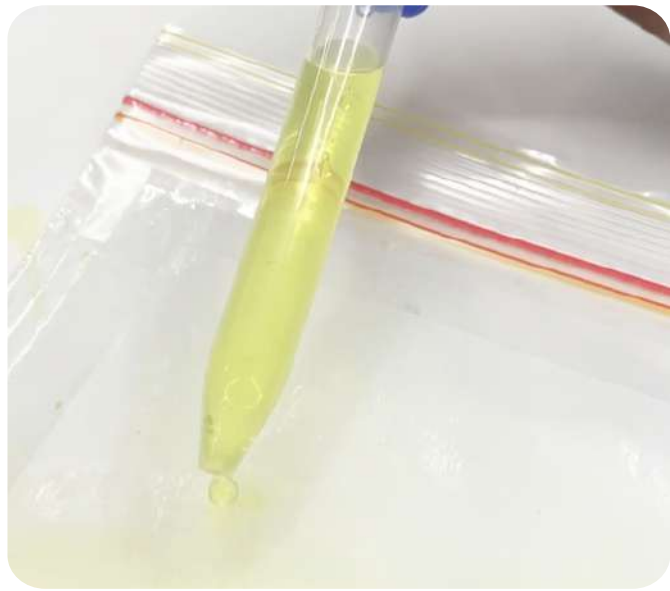


SUPER ABSORBER CHALLENGE

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

Mission Question

How many drops of water can a super absorber hold before it reaches its limit?



? Wonder & Predict

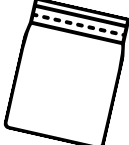
I PREDICT THAT.....

- ☐ Less than 20 drops
- ☐ 20-50 drops
- ☐ 50-100 drops
- ☐ More than 100 drops

There are no wrong predictions.

WHY DO YOU THINK THAT?

What you will need

- 
 - Zip-lock bags
- 
 - Instant snow powder
- 
 - Permeable cloth
- 
 - Tape
- 
 - Dropper & water

Investigate

Follow the steps carefully while observing.

- 1

Build Your Absorber
 - Place a tablespoon of super absorber powder inside a zip-lock bag.
- 2

Create the Test Window
 - Cover the powder with a square of cloth and secure it with tape.
- 3

Begin Testing

Use a dropper to add coloured water one drop at a time.
- 4

Count Carefully

Keep track of how many drops are absorbed.

Drops absorbed: _____
- 5

Gather Evidence

What did you notice?

☐ Water seemed to disappear.☐ The powder grew larger

☐ The absorber felt cool.☐ The surface stayed mostly dry
- 6

Solve The Mystery

Where did the water go?

My explanation:

Observe & Record

What clues did you discover?

- ☐ The powder expanded
- ☐ Water disappeared into the absorber
- ☐ The material became fluffy
- ☐ The absorber felt cool
- ☐ The bag became heavier
- ☐ Something surprised me



Scientist's Evidence Sketch

Draw your final absorber and label what you noticed.



What happened?

Fill in the sentences using words from the box.

polymer | gel | expanded | absorber | evidence | water

1. The special _____ soaked up the coloured water during the investigation.
2. The _____ seemed to disappear into the powder instead of staying on the surface.
3. As more liquid was added, the material _____ and became much larger.
4. The powder changed into a soft, fluffy _____ that could hold lots of liquid.
5. Scientists collect _____ by observing carefully and recording what happens.
6. The secret ingredient inside instant snow is a superabsorbent _____.



The science behind it

Where did the water go?

The white powder you used is called a superabsorbent polymer. When water touches the powder, the tiny particles soak it up and swell into a soft gel. That's why the powder grew larger and the water seemed to disappear. The water didn't vanish — it became trapped inside the polymer.

Why did it feel cool?

Some students notice the absorber feels slightly cool. As the polymer soaks up water, it releases a small amount of energy, but feels cool due to the water being cold.

Real-World Science

Superabsorbent polymers are used in: Baby nappies, Gardening products and Spill clean-up materials



Take it further - Investigation Extension

Absorber Power Challenge

Scientists often change one variable and observe what happens.

Your mission is to investigate: **Does the amount of absorber powder affect how much water can be trapped?**

- ☐ 1 teaspoon
- ☐ 2 teaspoons
- ☐ 3 teaspoons

My prediction

Professor
Picklebottom
Explorer of
Everything



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