

GROWING SEEDS

Why is water so important to plants? Watch how seeds sprout and grow in this activity.

Overview



Have you ever wondered what happens to seeds when we add water to them? Do you know what seeds look like as they start to grow underneath the soil? To observe this, all you need is a clear freezer bag, paper towel, staples and some seeds.

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What you'll need

- A clear, plastic freezer bag- any size is fine
- One sheet of paper towel
- A stapler and staples
- Seeds

Duration

10 minutes or so plus growing time

Suitable for...

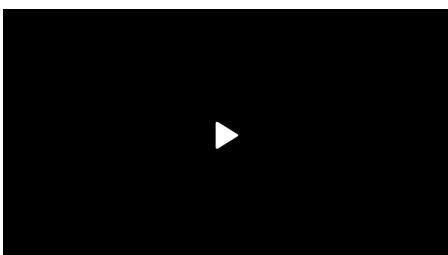
Age 3 and up

Safety notes

You know your children better than anyone, and you should judge whether the activity is suitable for them.

What to do

Step 1



Before you start, you may want to listen to the story on the left called Little Cloud by Anne Booth. It is a great introduction to the water cycle and to understanding why water is so important for plants and animals to grow and survive.

they're ready for this activity. You might want to think in particular about:

- The activity involves small items (seeds and staples) so there's a choke hazard.
- The activity involves a plastic bag so there's a suffocation hazard.
- Smaller children may put seeds and staples up their noses and in their ears.
- Watch out for fingers when using the stapler!

Careers link: The Meteorologist

Meteorologists need to know what the weather is doing now, calculate how this will change in the future and use their expert knowledge to refine the details.

Meteorologists:

- Observe and record the weather 24 hours a day across the globe and combine this with satellite pictures to see how the Earth's atmosphere is behaving: in terms of temperature, precipitation, air pressure and cloud cover.
- Use thermometers

Step 2



Take your sheet of paper towel and place it inside your plastic bag. Try to get it as flat as possible.

Step 3



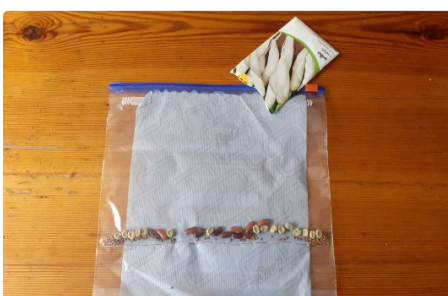
Place your plastic bag on your stapler, with the bottom of the bag as near to the hinge as possible. Put a staple in the bag as near to the edge as you can.

Step 4



Put staples all of the way across the bag. Try to get the staples as close together as possible. This will make a ledge for the seeds to grow on. The roots should grow downwards underneath the staples and the shoots should grow upwards.

Step 5



Carefully sprinkle your seeds onto the staples. Make sure the seeds are all on the same side of the paper towel and that they are spread evenly across the bag.

Step 6



Add a small amount of water to your bag. This should all be absorbed by the paper towel.

Step 7



Put your seed bag in the light and observe the seeds each day. You could use magnets to stick your bag to your fridge or sticky tape to stick your bag to the window. Check to make sure that your paper towel remains damp.

Things to discuss

- Have the seeds changed? How have they changed?
- Can you see any shoots or roots?
- Which direction are the shoots growing in? What about the roots?
- Why do you think we need to keep the paper towel wet?
- Why do you think we need to put the bags in the sunlight?
- What else do you think the seeds need to grow?

How it works

to measure temperature, barometers to measure air pressure and anemometers for measuring wind speed.

- Use weather balloons to measure temperature, air pressure, wind speed and wind direction in the troposphere, the lowest layer Earth's atmosphere and where almost all weather conditions take place.
- Feed the weather data collected into a supercomputer that performs complex equations to create models that predict the future weather.
- Check their models to make sure their forecasts are going to plan and adjust them where necessary.

Did you know that some weather presenters on television and radio are meteorologists?

In order for a seed to grow, it needs to **germinate**. For germination to happen, a seed needs water.

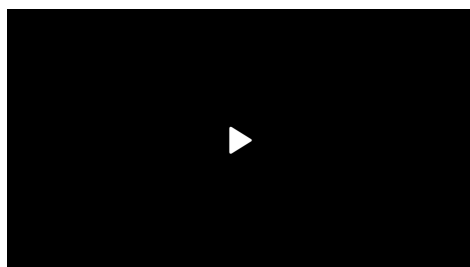
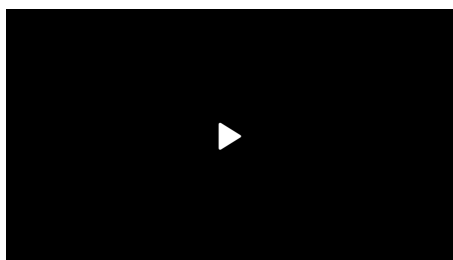
A seed contains an **embryo**, a young plant waiting to be activated to grow, and a food source, where the embryo gets its energy to grow. These are surrounded by the seed coat to protect them.

A seed is **dormant** or not active until conditions are just right for germination and for the plant to survive.

When a seed gets wet, it soaks up the water and this activates the release of energy from its food store. The embryo swells and gets longer.

Next, the embryo breaks through the seed coat. The root is activated and pushes downwards, then the leaves break out and the shoot is activated.

Watch the clips below to watch this happening.



Other things to try

Where is the best place for seeds to grow?



Why not investigate growing seeds in different parts of your home? You could try putting your seeds on a window or in a room at the front and at the back of your home

and record which seed bag grows fastest or which shoot grows taller. You could investigate what happens if you put your seeds in a dark cupboard. How about if you put your seed bag in the fridge or in the bathroom?

Observing clouds



You will need:

- A cloudy day
- Something to draw with (white or grey chalk is great but pencil or crayon would work too)
- Something to draw on (blue or dark coloured paper works well, but any paper or the paving works too)
- Pictures of different clouds. You can download our [cloud identification guide here](#).

What to do:

Stand, sit or even lie down on the floor and look up into the sky and carefully draw the clouds you see. You could ask:

- What colours are the clouds?
- Are the clouds moving or still?
- What do you think is moving them?
- Can you see any shapes in the clouds?
- What do you think the clouds would feel like if you touched them?
- Do you think it is going to rain? Why?

Use the cloud guide to identify the clouds you can see. Cumulonimbus and nimbostratus are rain clouds. Do you think it will rain today?

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You could also compare the drawings made of clouds on different days or make a cloud diary and record whether it rained or not that day.