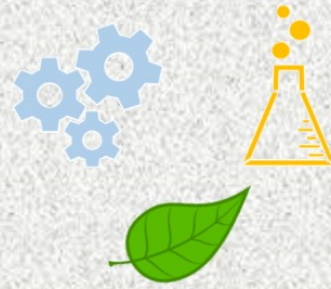


SIMPLE SCIENCE

Little investigations for big ideas.



Plants fill our world and grow in difficult places. From hot, dry deserts to cold and snowy mountains, plants are everywhere.



Take a minute: How do new plants grow?



What do seeds grow? What do they need to grow healthy new plants?



Lets begin by looking at seeds we see often. Look at a tomato, a cucumber or an apple. Where are the seeds?



Science: It's simple.





Little investigation #1


- Make three newspaper plant pots, following the [instructions](#). Yoghurt pots with a hole in the bottom or even egg boxes work well too.
- Fill each with soil or compost. Leaving about 2cm left at the top. Label the pots: 1) No light, 2) No water, 3) Water + Light.
- Plant 3 seeds into each pot and cover with about 1cm of soil.
- Water pots 1 and 3 but not 2.
- Place pots 2 and 3 in a bright windowsill.
- Place pot 1 into a black bin bag and tie the end.
- Leave until shoots develop. Keep watering 2 and 3 so they don't dry out.



Black bag

Newspaper

Seeds (beans, tomatoes, cucumber cress and pepper work well)




The big idea

Seeds need water to grow. The dry seeds do not **GERMINATE** (begin to grow). The seeds without light begin to grow but are thinner and pale. They will soon die unless they have light too. This is because the plant makes its own food using light.

Little investigation #2

- A day before you start, soak a few dried beans in water overnight.
- Scrunch up some kitchen towel into balls and soak in water.
- Place the balls into a jam jar.
- Place a bean into the jar between the balls and the glass so you can still see it. Repeat with two more jars.
 - Photo the bean each day and make notes about what happens, below.




Dried beans

Clear jars or containers

Kitchen paper

Camera




The big idea

We can see that the bean **GERMINATES** quickly but it first grows **ROOTS** downwards to find more water. If it can't find more water it will die. After it has found water, the roots suck this up and the green **SHOOT** grows looking for light, to make food. More roots grow.

My Science Journal

The Bean Experiment #2



Little investigation #3

- Fill two newspaper pots with soil to about 2cm below the top.
- Gently remove two good examples of the bean plants from #2. Leave at least one in a jar.
- Make a small hole in the soil with a pencil and place one plant in each pot.
- Gently firm the soil around the plant.
- Make another newspaper pot but this time cut small hole in the side, about the size of a 10p.
- Place this pot on top of one plant as a cover and tape into place.
- Make sure the soil and kitchen paper stay moist and place in a sunny windowsill. Photo daily and make notes below.



- Sticky tape
- Soil
- Newspaper
- Bean plants from #2



The big idea

The beans all continue to grow. However, the one in the jar soon stops growing as there are no **NUTRIENTS** in the paper for it to feed upon. The uncovered one grows well and straight. The covered one bends toward to hole where there is light. It grows poorly at first, as it can't make much food but soon becomes strong and green once the leave reach the light.

My Science Journal

The Bean Experiment #3

