



# BEAN IN A JAR!..... GERMINATION

Did you know you can grow a **bean in a jar**? All it takes is a little water!

## What is germination?

Germination is the sprouting of a seedling from a seed.

### What is needed for a seed to germinate?

#### Water

A seed absorbs water, it swells up, its outer coat breaks and roots start to grow.

#### Oxygen

Oxygen is needed for a plant to grow because seeds RESPIRE. In fact when seeds are planted too deeply into the soil they will not grow!

#### Temperature

Temperature can be important (warm or cold) depending on the type of seed.

### Is light needed for germination?.....NO!!

In this experiment we are going to grow a seedling in a jar. This is possible because the seed has all the nutrients required for sprouting stored within it. It can grow with or without light. In fact, to make the experiment more interesting, we will be preparing 2 jars; we will place one in a dark cupboard while the other we will leave in light.

Once the seedling has grown it must then be transferred into the soil as it would need to start taking nutrients from the soil. It must also be kept in sunlight since it would need to PHOTOSYNTHESISE (use sunlight to make its own food).

Roots grow downwards to anchor the plant in the ground and find nutrients and shoots grow upwards to find light and photosynthesise.



# HOW TO GROW A BEAN IN A JAR

## What you need:



Broad bean seeds  
(we used red  
kidney bean)



2 Jars



Kitchen roll or a  
napkin



Water

## Instructions:

1. Rinse the jar from the inside to make it damp.
2. Dampen the kitchen roll/ napkin and place in the jar.
3. Put the bean seed in the jar resting on the napkin against the side of the jar.
4. Do the above twice and place one jar in the dark while leaving the other exposed to light.
5. Wet the beans with some water every few days.

In both cases you should notice that roots have begun to sprout after a few days. This shows that light is not needed for germination.

Also appreciate that all the nutrients needed to grow these first roots and shoots are all contained within the seed itself!



# RESULTS



Day 1



Day 4



# RESULTS

Day 5 in the light



Day 5 in the dark



# RESULTS



Day 7 in the dark

Day 7 in the light