

# Sprouting and Growing Beans

## Objective:

The goal of this challenge is to investigate how beans sprout, and whether different conditions will result in different outcomes for the beans. The tests include using water compared to coffee, using potting mix compared to paper towel/cotton wool, and comparing growing in light compared to growing in the dark.

If you wish to try some other test conditions, have a go, and let us know how you get on!

## Materials:

- Clear containers (plastic cups, jars, etc) - one for each test
- Packet of Broad Bean seeds
- Paper towel or cotton wool
- Potting Mix
- Water
- Coffee
- Box or cardboard to make block-outs
- Permanent markers (to record the test conditions for each container)



## Instructions:

Decide how many different tests you want to try, and divide up the students into groups to run each type of test. The more samples you have for each test the better.

The Day Zero team created the following 6 tests:

- Paper towel, in the light, water only
- Paper towel, in the light, coffee
- Paper towel, in the dark, water only
- Paper towel, in the dark, coffee
- Potting mix, water only
- Potting mix, coffee



Prepare your different test containers by adding either paper towel/cotton wool or potting mix, and writing the test conditions. Don't forget to write the date you start onto each container too.

Mix up the coffee mixture (either from a coffee machine, or a teaspoon of instant coffee dissolved in warm water) and let it cool.

**Paper towel/cotton wool tests:** push a bean down either side of the container (add more beans if you like and if they will fit).



**Potting mix tests:** push the beans down a few centimetres and cover back over.

**Tests in the dark:** make some block-out covers for the containers using cardboard, boxes or dark paper.

Now wet down each test well to get them started.

**Coffee tests:** add a little of the coffee mixture to the containers.



## Results:

The following sheet can be used to record your predictions and observations over time for each test. Have a go at drawing what the bean looks like, and maybe add a photo. Don't forget to make a note of the date of your observations.



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Test Description:		
Date	Drawings / Photos	Predictions / Observations (How long is the root? How long is the sprout? How is it going compared to the other tests?)