

# What do seeds need to germinate?

Year 2 - Plants - OS2B005

National Curriculum Statutory Requirements

KS1W3 - performing simple tests; KS1W6 - gathering and recording data to help in answering questions;

2B2 - find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.



### Learning Objective

I can investigate what seeds need to germinate.

Me: 

Teacher: 

## Germination

Germination is when a seed begins to grow into a plant. We can see when a seed is germinating because roots and shoots begin to appear.

Seeds don't start to germinate as soon as they are made by the plant. They can remain as seeds for a long time before they germinate. In fact, scientists recently found some seeds which were over **1000 years old** and managed to get them to germinate!

## Scientific question

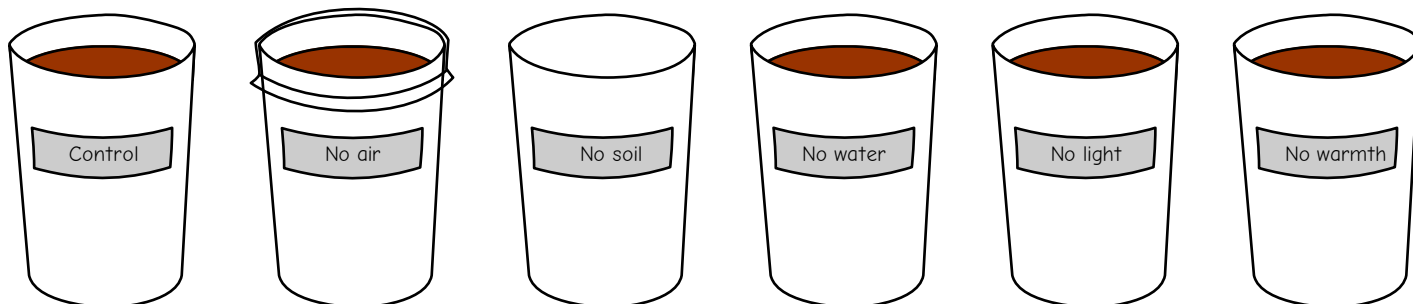
What causes seeds to germinate?

## You will need:

- 12 seeds (broad beans are ideal)
- 6 pots
- 6 labels
- Water
- Cling film
- Soil

## Method

Set up your pots as shown in the diagram, then place two seeds in each pot.



**Label: Control**  
Contains **soil, water, warmth, air** and **light**.  
Place this pot on a sunny windowsill.

**Label: No Air**  
Contains **soil, water, warmth**, and **light**.  
Place cling film over the top of this pot. Place it on a sunny windowsill.

**Label: No Soil**  
Contains **water, warmth, air** and **light**.  
Place this pot on a sunny windowsill.

**Label: No Water**  
Contains **soil, warmth, air** and **light**.  
Place this pot on a sunny windowsill.

**Label: No Light**  
Contains **soil, water, air** and **light**.  
Place this pot in the fridge.

**Label: No Warmth**  
Contains **soil, water, air** and **light**.  
Place this pot in the fridge.

We are only changing one thing: the one thing that each pot is missing. We are trying to keep everything else the same. This makes our test more fair.

Set up your pots, make your predictions, and **after 1 week**, see if you can answer the question: **What do seeds need to germinate?**

## What do seeds need to germinate?

### Control

#### Prediction

What does this pot contain?

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What is missing? \_\_\_\_\_

Do you think that the seeds in this pot will germinate? \_\_\_\_\_

Why? \_\_\_\_\_

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### Results

Sketch of pot after 1 week

Did the seeds germinate? \_\_\_\_\_

Why do you think this happened? \_\_\_\_\_

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### No Air

#### Prediction

What does this pot contain?

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What is missing? \_\_\_\_\_

Do you think that the seeds in this pot will germinate? \_\_\_\_\_

Why? \_\_\_\_\_

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### Results

Sketch of pot after 1 week

Did the seeds germinate? \_\_\_\_\_

Why do you think this happened? \_\_\_\_\_

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## What do seeds need to germinate?

### No Soil

#### Prediction

What does this pot contain?

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What is missing? \_\_\_\_\_

Do you think that the seeds in this pot will germinate? \_\_\_\_\_

Why? \_\_\_\_\_

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### Results

Sketch of pot after 1 week

Did the seeds germinate? \_\_\_\_\_

Why do you think this happened? \_\_\_\_\_

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### No Water

#### Prediction

What does this pot contain?

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What is missing? \_\_\_\_\_

Do you think that the seeds in this pot will germinate? \_\_\_\_\_

Why? \_\_\_\_\_

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### Results

Sketch of pot after 1 week

Did the seeds germinate? \_\_\_\_\_

Why do you think this happened? \_\_\_\_\_

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## What do seeds need to germinate?

### No Light

#### Prediction

What does this pot contain?

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What is missing? \_\_\_\_\_

Do you think that the seeds in this pot will germinate? \_\_\_\_\_

Why? \_\_\_\_\_

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### Results

Sketch of pot after 1 week

Did the seeds germinate? \_\_\_\_\_  
Why do you think this happened? \_\_\_\_\_

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### No Warmth

#### Prediction

What does this pot contain?

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What is missing? \_\_\_\_\_

Do you think that the seeds in this pot will germinate? \_\_\_\_\_

Why? \_\_\_\_\_

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### Results

Sketch of pot after 1 week

Did the seeds germinate? \_\_\_\_\_  
Why do you think this happened? \_\_\_\_\_

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