

1 Investigating plant growth

1.1 Seeds

Seeds and fruits

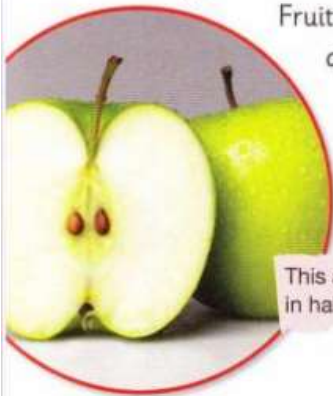
Words to learn

seed embryo
seed coat



Have you ever swallowed a **seed** when you were eating an apple or an orange? We find seeds inside fruits.

Fruits and seeds can be different sizes and shapes.



This apple has been cut in half to show the seeds.



An avocado pear has one large seed.

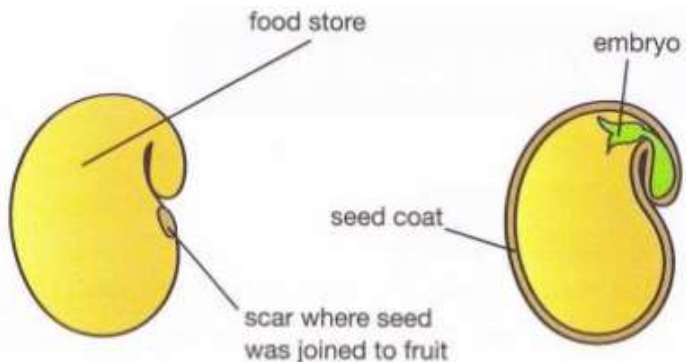


Bean seeds are found inside a pod.



A poppy's fruit contains the seeds.

Here is a bean seed with its parts labelled.



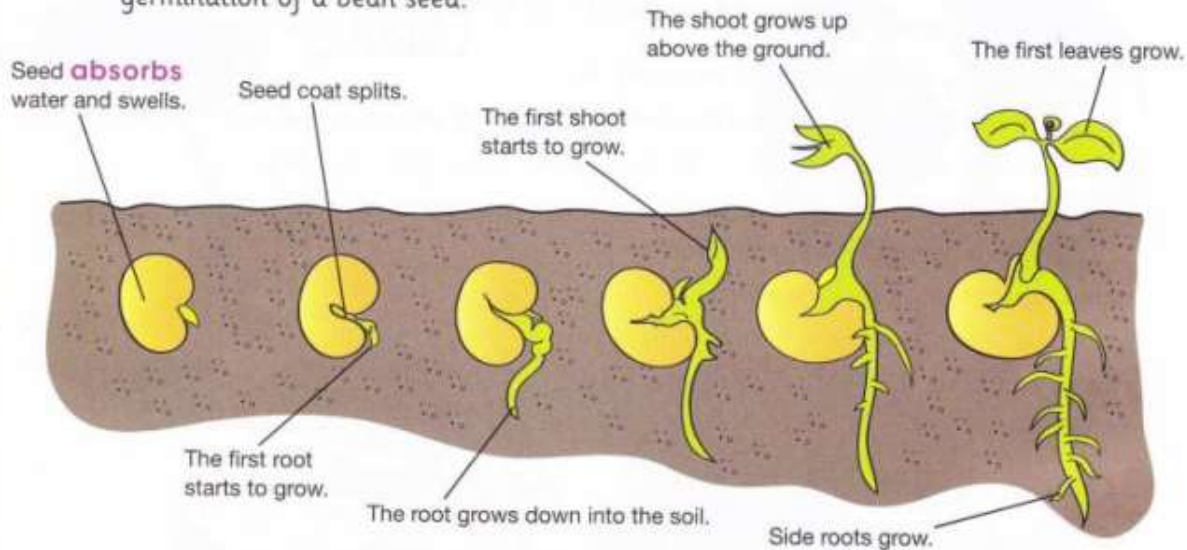
1.2 How seeds grow

Words to learn
germination shrivels
absorbs

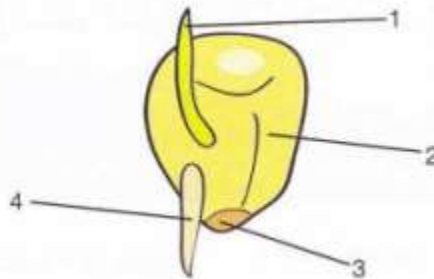


Germination

If a seed is given the right conditions, and the embryo is alive, it will grow. When a seed starts to grow, we say it germinates. This process is called **germination**. The seed uses its food store to give it the energy to grow. The seed **shrivels** and becomes small after germination. Here are the stages in germination of a bean seed.



Here is a picture of a germinating seed. Write down the names of parts 1 to 4.



1 Copy the two columns of words.

Match the words in column A with their meanings in column B.

Column A

1	seed
2	embryo
3	seed coat
4	germinate
5	environment

Column B

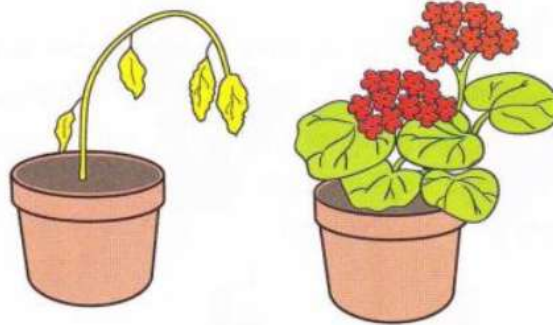
A	the outer cover that protects the seed
B	when a seed start to grow
C	everything around us
D	part of a plant that can grow into a new plant
E	part of a seed that grows into a new plant

1.4 What do plants need to grow?

Word to learn
factors



Plants need certain things from the environment to make them grow. We call these things **factors**. Without these factors, plants will not grow well, or they might even die. Look at these pictures. Which plant is healthy and growing well?



Identify the things that plants need to grow

- 1 Look at these sentences about the things that plants need to grow. Fill in the gaps using words from the box.

light water air warmth **factors**

- a We call the things that plants need to grow _____.
- b Plants need _____ so they can make food to help them grow.
- c Plants need _____ to give them strong stems and firm leaves.
- d Plants need _____, but they grow best when it is not too cold or too hot.
- e Plants need _____ because they are living things.

What you have learnt

- Plants need factors from the environment to make them grow.
- The factors plants need are light energy, air, water and warmth.

2 The life cycle of flowering plants

2.1 Why plants have flowers

Many plants have flowers. There are many different kinds of flowers.

Seeds form inside fruits. But where do fruits come from?

Words to learn
scent wither
reproduce



Why do plants have flowers? Is it to smell nice?



What job do flowers do?

No matter what the size, colour or **scent**, all flowers do the same important job. Can you think what it is?

Some flowers are big.



Some flowers are small.



Some flowers are colourful.



Some flowers are not brightly coloured.



Some flowers have scent. Others do not have scent.



What you have learnt

- ☺ Most plants have flowers, but not all do.
- ☺ Flowers can be big or small, colourful or non-coloured, scented or unscented.
- ☺ Flowers form fruits.
- ☺ Flowers help plants to reproduce.

2.2 How seeds are spread

A fruit has two jobs:

- to protect the seeds inside
- to help spread the seeds.

Have you ever found seeds stuck in your socks? Plants need to scatter their seeds away from themselves. We call this **seed dispersal**.

Words to learn

seed dispersal

seedlings



Why seeds must be dispersed

Why do you think seeds must be dispersed? What would happen if all the seeds grew next to their parent plant? What is happening to these seedlings?



Seedlings need room to grow. They also need light and water. Seedlings cannot grow to be healthy plants if they all have to share water and light in a small area. Plants disperse their seeds in different ways.

The pictures show how some plants disperse their seeds. Talk about how each seed is dispersed.

