

Key Facts

Plant:

One of a large group of living things that use sunlight to make their own food. Most **plants** have leaves, stems, roots and either flowers or cones.

Plants grow from seeds, bulbs and tubers, the seed germinates, grows into a seedling and then a mature plant. Flowers become seeds, berries, fruit and vegetables. Plants need space, the correct temperature, water and light.

Germination:

Germination is the process by which an organism grows from a seed or similar structure. Seed germination happens in a predictable sequences. There are two types of germination that occur, epigeal and hypogeal. In epigeal germination the roots are pushed above ground and the seed leaves emerge from them, followed later by the first true leaves. In hypogeal germination the roots stay below ground and the first leaves emerge from the stem.

Children will observe that seeds do not all germinate in exactly the same way, but at this stage in their learning focus only on the common features of a radicle emerging first and growing into root, followed by the shoot which grows the first leaves.



Science Year 2 Spring 2 The Apprentice Gardener



Vocabulary

Word	Definition
Bulb	A dormant stage of a plant that is formed underground and consists of a very short stem with one or more flower buds surrounded by special thick leaves.
Gardener	A person who works in a garden.
Leaves	Leaves produce food for the plant through a process called photosynthesis.
Root	A root is a part of a plant that is usually hidden underground. They hold the plant in the ground and keep it upright.
Seedling	A young plant grown from seed.
Seeds	The small part of a flowering plant that grows into a new plant. We planted seeds in the garden.
Shoot	The new growth from seed germination that grows upward is a shoot where leaves will develop.
Unhealthy	When a plant is suffering from being malnourished, under watered or not enough sunlight.
Wilting	To lose freshness and become limp.

Common misconceptions:

Plants are not alive.

Plants are alive, even though they are different from animals and humans in many ways.

Trees, grass, vegetables, and weeds are not plants.

Plants have many different characteristics. There are many different types of plants throughout the world. Not all plants have the same structures (stems, leaves, flowers, roots).

Knowledge and Understanding:

Children will learn:

- Seeds do not need soil for germination to occur; any medium that holds water is suitable, although as the seedlings develop they need anchorage for their developing roots.
- A bulb is an underground structure produced by perennial plants, which becomes dormant in the soil after the plant has flowered.
- A bulb is similar to a seed because it needs water to begin to grow, and it grows roots and then a shoot. A bulb is different from a seed because it can be left in the ground and the same plant will grow back again the following year
- Roots and shoots are sensitive to gravity so, no matter what orientation the seed is planted in, the root always grows downwards and the shoot upwards.

Key skills and concepts:

Children will be able to:

- To observe closely to find **similarities and differences** of different plants, seeds and bulbs.
- To **record data into a table** to help **group and classify**. Children will be **observing** changes and **patterns** within plant growth.
- To decide **what to do with more independence** in order to answer questions.
- To **make observations over time** to help answer questions. How long does it take a plant to grow if planted without soil, at different levels of the soil.
- Provide an opportunity for children to **apply** what they have learned in classroom investigations in real context.
- They are also introduced to growing plants from bulbs and from seeds, learning the **sequence** of germination, and **comparing and contrasting** the requirements of germinating seeds with those of mature plants to maintain healthy growth.

Key Questions

How have our seeds changed overtime?

What will the seeds grow into?

How should we plant seeds?

What do plants need to grow?

What changes can we observe?

What changes can we observe?

What do plants need to grow?

