



KNOWLEDGE ORGANISER

SCIENCE: THE APPRENTICE GARDENER

YEAR TWO

KEY KNOWLEDGE:

QUESTION 1: How do seeds grow?

ANSWER

When seeds are planted, they first grow roots. Once these roots take hold, a small plant will begin to emerge and eventually break through the soil. When this happens, we say that the seed has sprouted. The scientific name for this process is germination.

QUESTION 2: What is germination?

ANSWER

After the seed has made it to a new location and is covered with dirt, it can begin germination. Germination is the process of seeds developing into new plants. First, the right conditions must trigger the seed to grow. Usually, this is decided by how deep the seed is planted, water availability, and temperature. When water is plentiful, the seed fills with water. The water activates proteins that begin the process of seed growth. First the seed grows a root to access water underground. Next, the shoots, or growth above ground, begin to appear. The seed sends a shoot towards the surface, where it will grow leaves to harvest energy from the sun. The leaves continue to grow towards the light source.

Germination (How a plant grows from a seed)



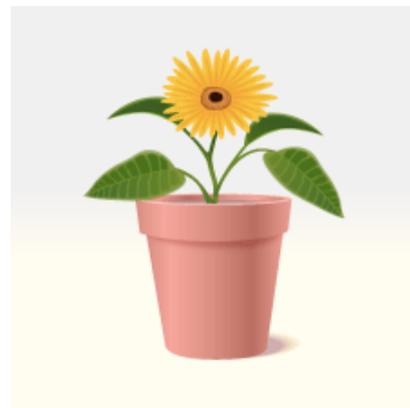
QUESTION 3: What do plants need to be healthy?

ANSWER

A plant needs these things to grow well:

- air
- light
- warmth
- water
- nutrients

A healthy plant is upright with green leaves.



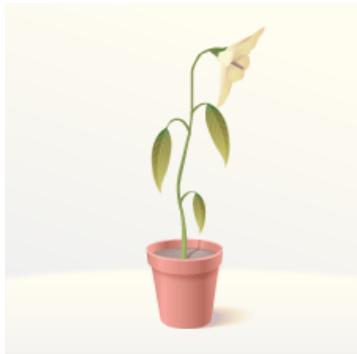


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A seed will not produce a plant at all if it is kept too cold. The seed needs **warmth** to germinate (develop from a seed into a plant) and start to grow into a healthy plant.



A plant that is kept in a **dark place** will grow tall and spindly in search of light and then become weak and die.

A plant that is **not watered** will have a weak stem and dried up leaves and will eventually die.