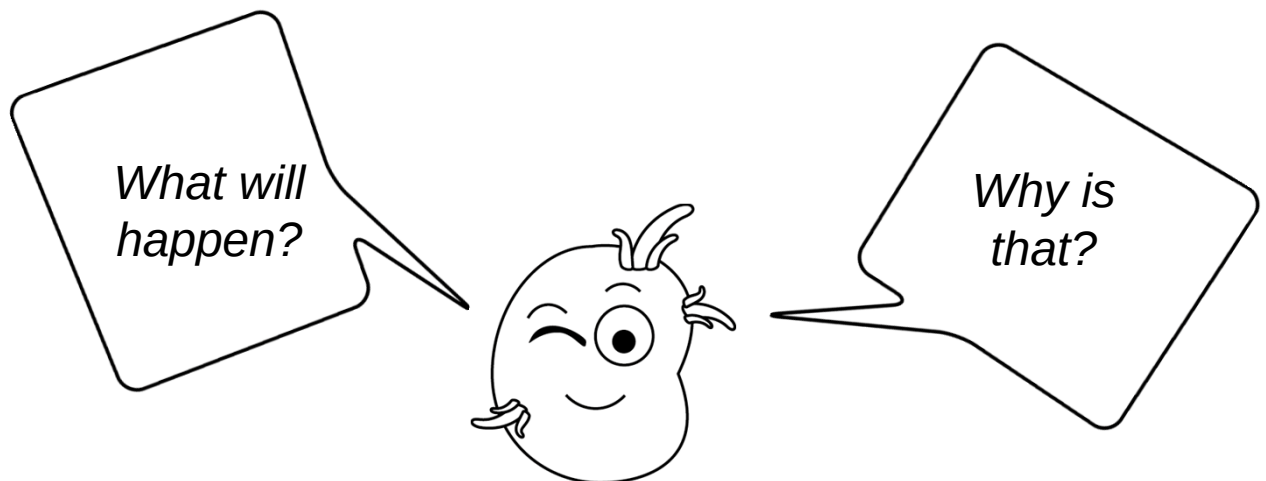




Scientific explanation

One or two?

The radish seedling is similar to the bean seedling. The maize seedling, however, is different to both of them.



Beans and radishes belong to the genus of plants having two seed leaves (dicotyledonous plants) because their seed is made up of two halves (comp. Growth experiment 1).

The seed consists of a plant embryo, a food store and a protective seed coat. What is inside the food store varies according to the type of plant.

In the angiosperms (plants with pericarp) the embryo consists of either one or two seed leaves (cotyledons) and an embryonic root (radicle). This distinction continues during germination. Seeds with only one cotyledon in the seed will have only one leaf when germination starts. There are further differences. The petals of plants with one cotyledon (monocotyledons), such as maize or lilies, always appear in threes. They have no sepals. Their leaves lack a leaf stalk (sessility) and are usually shaped like a simple spearhead (lanceolate) or egg, with parallel leaf veins. All of their roots develop directly from the plant (hypocotyl).

Plants as diverse as roses, primroses and nettles have two seed leaves and are known as dicotyledons. Their flowers usually have four or five petals and small, greenish sepals. Their leaf veins are normally netlike, and the leaves may be made up of several parts. The root usually consists of a main root that develops into several lateral roots.