

Root and stem

Setting the context

When Errol isn't helping save the Earth, he helps his friends, Josh, Jake and Jeannie, run the Green Scene Cafe. Their speciality is Surprise Salad: orange onions, blue radishes and red celery! Josh can never figure out how Errol manages to grow such odd coloured vegetables but, according to Errol, the secret is in understanding how plants 'work'.

"The really neat thing about plants," he explained "is that their four main parts work together to make food. Just like the four of us." Josh looked baffled. "Here," said Errol, giving Josh one of his wide, wide smiles, "let me show you."

The problem

How do plants make food?



Objectives

To learn about the part played by leaves in helping plants grow.

To know how roots anchor plants in place and help them take in water and minerals.

To understand the effects of light, air and water on plant growth.

Background information

A plant's life starts when primary roots push through the seed's outer coating. While the root grows down, the stem pushes up, towards the light. Once through the soil's surface, leaves and flowers begin to sprout. Most land plants have four important parts: roots, stem, leaves and flowers. Roots take up water and minerals from the soil. These are carried along the stem to tiny 'veins' in the leaves. We can see this in action when we dye the celery. Green leaves help convert light and water into food through **photosynthesis**. Flowers and fruit provide seeds, so the whole process can begin again.

You will need

Per group: plastic beaker; piece of celery with leaves (or white flowers, such as carnations); water; food colouring; spoon; marker pen.

Preparation

Prepare an A3, laminated copy of