



Day Two

Senior Classes (5th and 6th Class)

Science Activity Sheet

The following resources have been designed as an extension to the Food Dudes Week, senior level, day 2 video. This resource links with the science curriculum for 5th and 6th class pupils.

Video Message:

The senior level, day 2 video explains the different types of fruit and vegetables and where they come from.

These activities are linked to the following **curricular area**: Science: living things > plant and animal life > processes of life

Key Learning Outcomes:

5th and 6th Class Pupils should be enabled to:

- ✓ Understand some ways in which plants reproduce vegetatively: runners, tubers, bulbs

Teacher Guidelines:

The following information sheet can be printed for pupils.

Can you help Razz to understand how fruit and vegetables reproduce and grow?

Plants can be grown in large numbers by germinating seeds, or by growing bulbs or tubers. Cuttings can be taken from existing plants and can be grafted onto the stock of another plant.

Germination

Germination occurs when a new plant grows out from a seed. All seeds require three conditions for successful germination:

- ✓ **Water** allows the seed to swell up and all the chemical reactions involved in the growth of the embryo to take place.
- ✓ **Oxygen** is needed for respiration which provides the energy the embryo needs to carry out cell division and to grow.
- ✓ **Warmth** is required for the enzymes to carry out respiration and cell division.

WOW = Water Oxygen Warmth

As the new plant grows, it produces roots which take in water and minerals from the soil and produces leaves on its shoots which carry out photosynthesis to make food for the plant.

Vegetative Propagation

Many plants can produce genetically identical offshoots, or clones of themselves, which then develop into independent plants. This process is called vegetative propagation, or vegetative reproduction. One way in which vegetative propagation occurs is through fragmentation, a process in which a severed plant part can grow into a whole new plant.

Other modes of vegetative propagation include the production of specialised structures such as tubers, runners, and bulbs. The advantages to this kind of reproduction, which can occur either naturally or artificially, stem from the fact that it can occur more rapidly than seed propagation and can allow a genetically superior plant to produce unlimited copies of itself without variation.

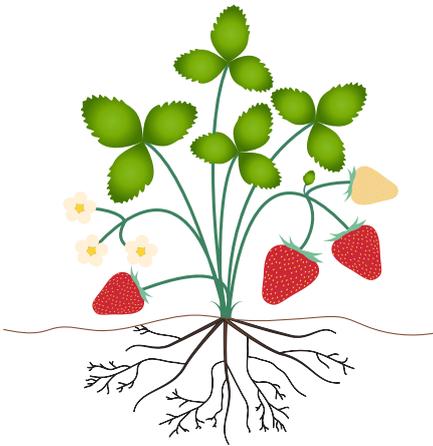


Tubers

Tubers, such as potatoes, are fleshy underground storage structures composed of enlarged parts of the stem. A tuber propagates as a result of the tiny leaves equipped with buds that grow on its surface. Each of these buds can form a new plant, genetically identical to the parent.

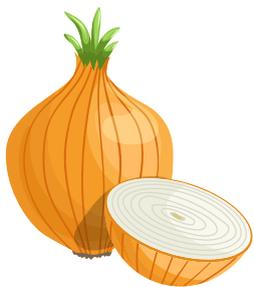


Propagating and Growing Plants



Runners

Runners, such as those found on strawberry plants, are slender horizontal stems that spread outward from the main plant. Entirely new plants can develop from nodes located at intervals on the runners; each node can give rise to new roots and shoots.



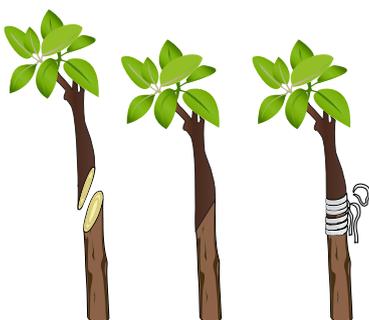
Bulbs

Bulbs, such as onions, are roughly spherical underground buds with fleshy leaves extending from their short stems. Each bulb contains several other buds which can give rise to new plants.



Taking cuttings

The simplest way to artificially propagate a plant involves taking a cutting. A branch from the parent plant is cut off, its lower leaves are removed, and the stem is planted in damp compost.



Grafting

A cutting from a plant is grafted (attached) on to the stem of another plant. The cut surfaces of the two plants grow together.



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Propagating and Growing Plants

Plant Reproduction Wordsearch

Name _____

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- BULBS
- CUTTINGS
- RUNNERS
- GRAFTING
- GERMINATION
- STRAWBERRY
- OXYGEN
- ONION
- WARMTH
- WATER
- POTATO
- TUBERS

Why not create your own mini word search and share it with your friends?

See who can find the most words within the word search, and who can complete it first!