Sangam SKM College – Nadi
Lesson Notes – Week 1
Year 10
Agriculture Science

Strand: Agronomy
Sub-strand: Horticulture

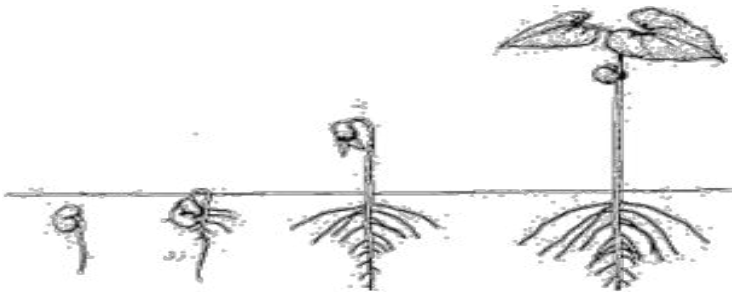
Content Learning Outcome

- Define sexual plant propagation.
- State their advantages and disadvantages
- Differentiate between monocotyledon and dicotyledon seed.

Notes:

Sexual Propagation

Sexual propagation is a process which involves seeds which have to undergo the process of germination in order to grow into a new offspring.



Adapted from *https://www.ndsu.edu/pubweb*

Advantages

- Produce a large number of plants in a short period of time
- Can handle large numbers easily
- Produces hybrids which have characteristics of both parents

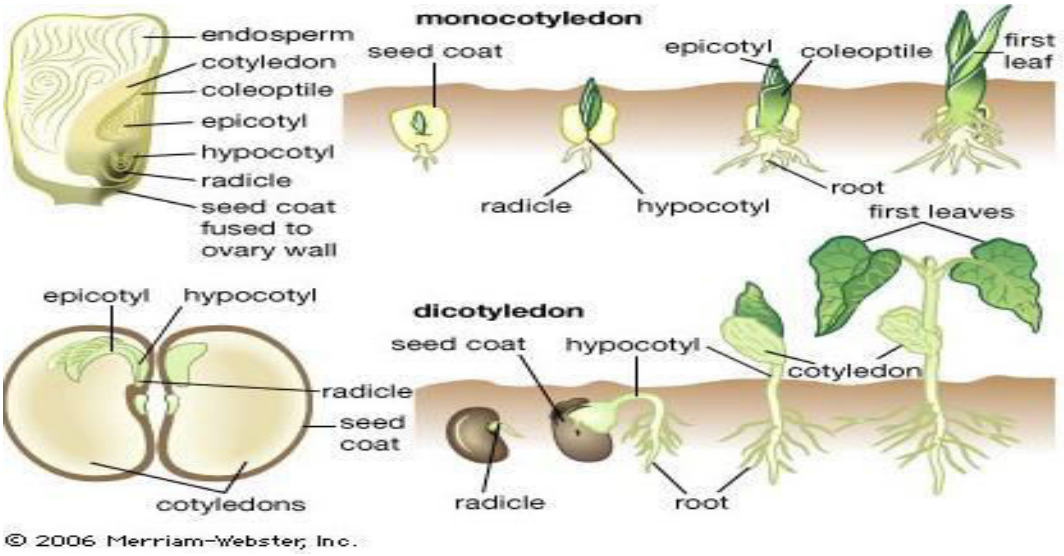
Disadvantages

- Some plants produce no viable seeds
- Some seeds are very difficult or slow to germinate
- Causes genetic variability due to production of hybrids.

Two types of seeds

- **Monocotyledon -** seeds that have only one cotyledon and the food is stored outside the embryo in the endosperm e.g. maize seeds, cereals and grasses.

- **Dicotyledon -** these seeds have two cotyledons attached to the embryo, which contain the reserve food.



Source: *Agriculture Science for Year 10*

Activity:

A. COMPLETE THE FOLLOWING SENTENCES

(i) _____ is the main part of the plant that is used in sexual propagation.

(ii) Sexual propagation will result is producing a totally new offspring which is usually referred to as _____.

B. Differentiate between monocotyledon seeds and dicotyledon seeds.

Reference:

Agricultural Science Year 10 Text Book, page 56-57

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Lesson Notes- Week 2

Subject: Agricultural Science Year: 10

Strand	Agronomy
Sub strand	Horticulture
Content Learning Outcome	• Define asexual plant propagation. • Identify some examples of asexual propagation. • State the advantages and disadvantages of asexual propagation.

Notes:

Asexual /Vegetative Propagation

Asexual propagation is the production of offspring from the vegetative parts of the parent plant.

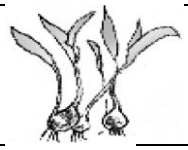
Advantages

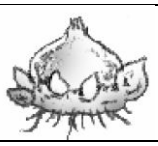
- All offspring are identical to the parents.
- Needed for plants that are impossible or hard to produce from seeds.
- Decrease time to flower especially grafting and budding.
- It takes short time to reach maturity.

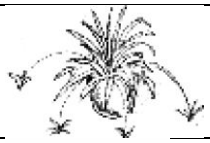
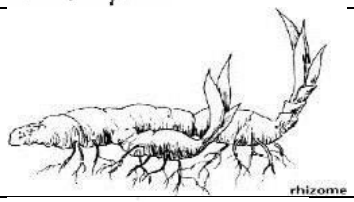
Disadvantages

- Can only propagate a few from each parent.
- It requires a lot of labour.

Examples of Asexual Propagation

BULBS Plants that are propagated by bulbs are: Tulips, Onion	
SUCKERS Plants that are propagated by suckers are: Dalo, Pineapples, banana	

CORMS Plants that are propagated by corms are: Dalo, Kumala	

STOLONS Plants that are propagated by stolons are: Strawberry, spider plant.	
CUTTINGS Plants that are propagated by cuttings are: Cassava, Kava, Sugarcane	
RHIZOMES Plants that are propagated by rhizomes are: Ginger, Tumeric	
ROOT CUTTINGS Plants that are propagated by root cuttings are: Breadfruit.	

Activity:

1. Differentiate between sexual propagation and asexual propagation.

2. State the planting material that is used to propagate:

a) tulips
b) banana
c) breadfruit
d) turmeric
e) cassava

2. Compare and state three differences between sexual plant propagation and asexual plant propagation.

Sexual Propagation	Asexual Propagation

Reference: *Agricultural Science Year 10 Text Book, page 58-59.*

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Lesson Notes- Week 3

Subject: Agricultural Science Year: 10

Strand	Agronomy
Sub strand	Horticulture
Content Learning Outcome	• List the common types of budding • Identify the types of plant suitable for budding and • List the steps in budding

Notes:

Definitions

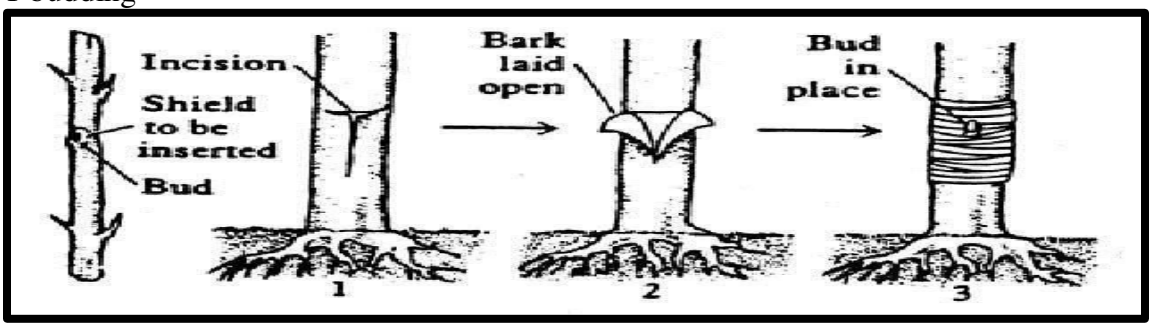
- Scion - the upper part of the plant which contain branches and leaves and has high quality fruits.
- Cambium - part of the stem and is the area of active growth and contains xylem and Phloem vessels.
- Root stock - the lower part of the plant that contains vigorous root system
- Budding - the growing of the bud of one type of plant (the scion) on the stem of another plant (root stock)

Types of plants on which budding is practiced in Fiji

- Citrus family (Oranges, Lemon, Lime)
- Guava
- Mango

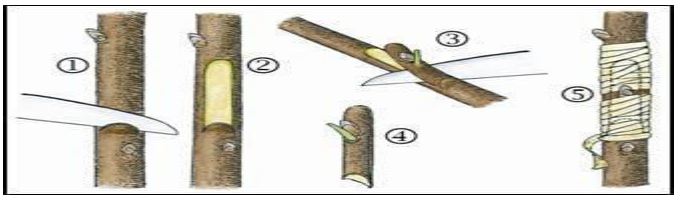
Common types of budding.

- T budding



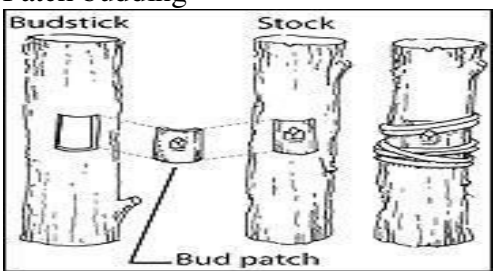
Source: https://www.researchgate.net

- Chip budding



Source : https://www.researchgate.net

- Patch budding



Source: https://extension.missouri.edu/publications/mg3

Principles of Budding

Step 1 A bud is removed from the bud wood.	
Step 2 An inverted 'T' cut is made on the root stock	
Step 3 Bud is inserted in the rootstock by gently lifting the bark and pushing the bark upwards along the vertical cut.	
Step 4 The union is then wrapped with a budding tape. The tape can be removed once the inserted bud begins to shoot, and also break the head of the rootstock.	

Activity

1. Differentiate between a scion and rootstock.
2. Define the term budding
3. State at least one type of plant that can be used for budding.

Reference: *Agricultural Science Year 10 Text Book, page 60-61.*