Erasmus+
2020-1-SK01-KA201-078297

ALIVE

Reproduction of plants

WORLD OF PLANTS

HOW TO KEEP SORTS OF PLANTS FOR GENERATIONS?

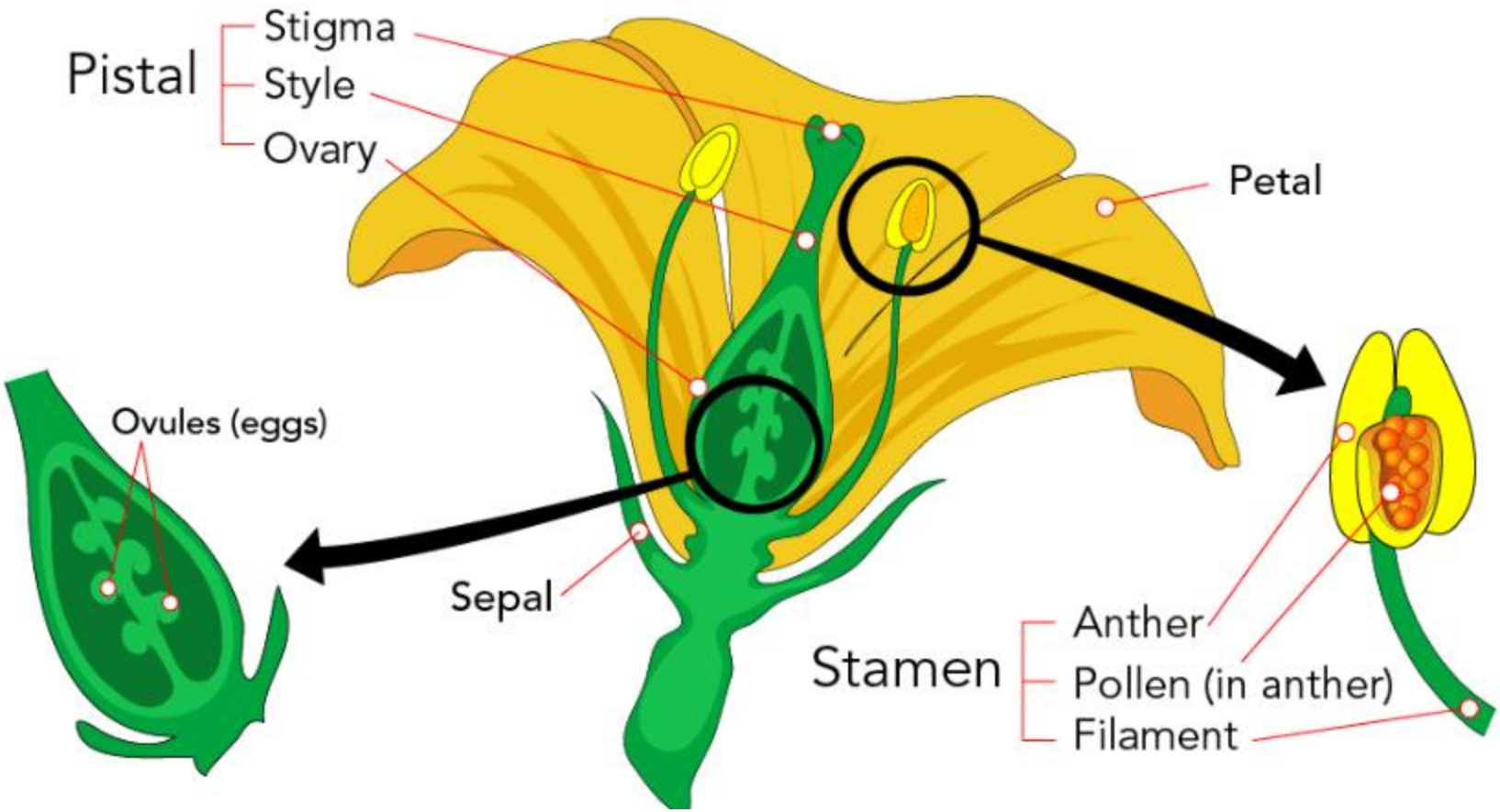
ALIVE

- The main goal of the natural world is REPRODUCTION
- Plants reproduce by:
  - Sexual way
  - Asexual way
- Both ways create two or more plants out of a mother plant

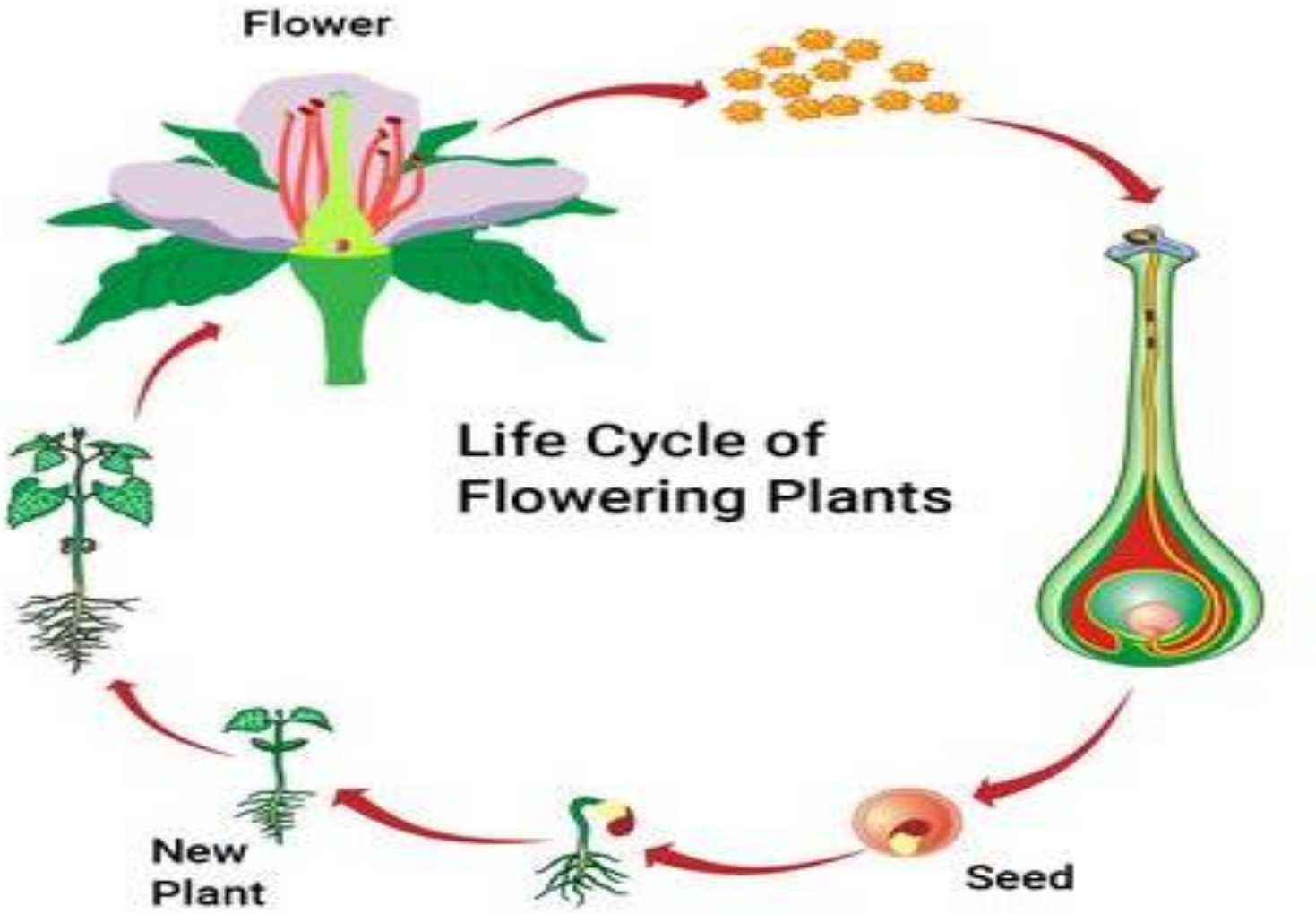
SEXUAL REPRODUCTION

- Involves the union (fertilization) of pollen and egg leading to seed formation
- It can be also called as seed propagation
- Seeds can be stored for a long period of time
- This technique creates new varieties and cultivars of plants – because it combines female and male cells to produce a seed
- Used by ornamentals or flowering plants, vegetables, fruits and medicinal plants

FLOWER STRUCTURE



SEXUAL REPRODUCTION



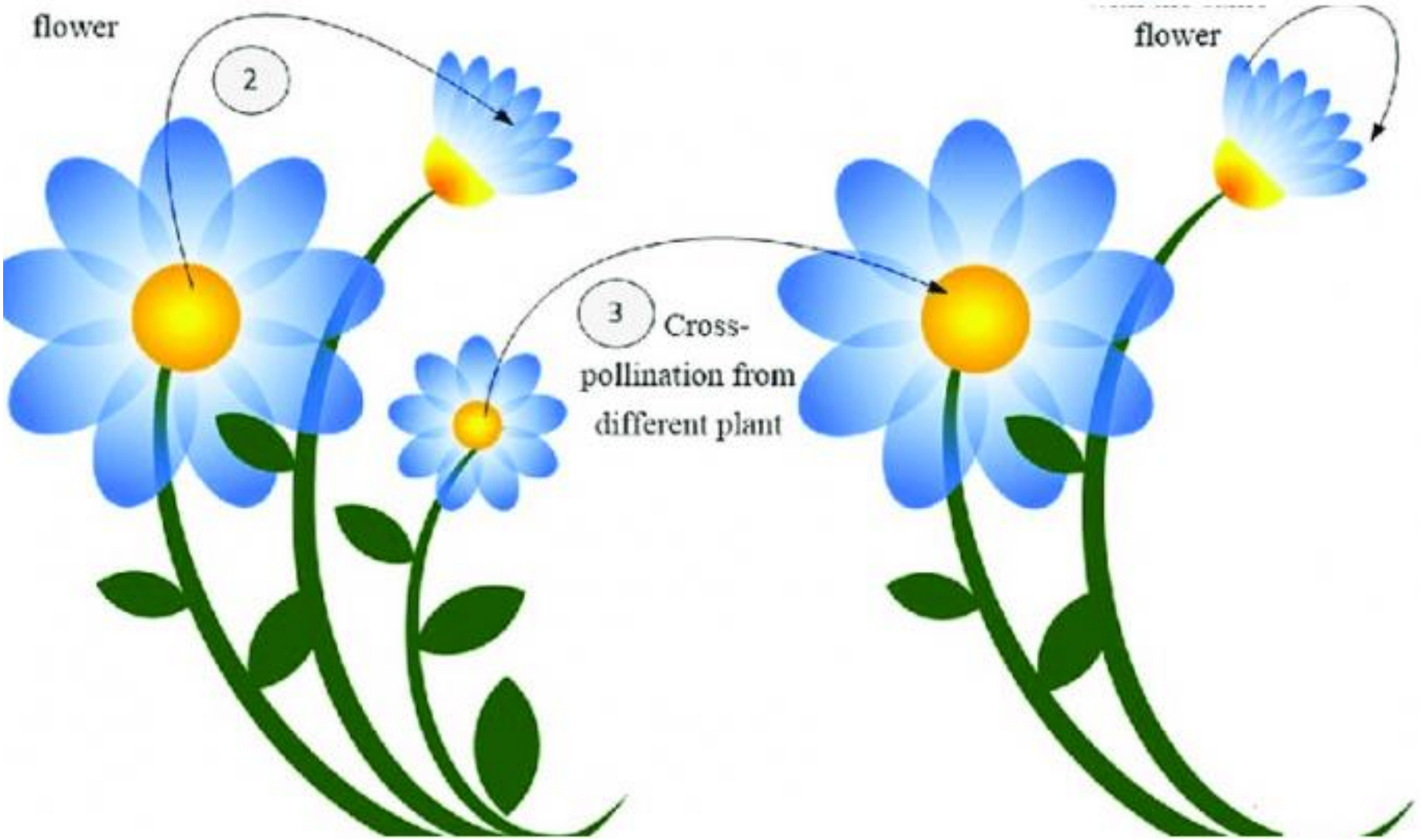
SEXUAL REPRODUCTION IN PLANTS

- Includes – pollination and fertilization

- POLLINATION

- Is defined as the placement or transfer of pollen from stamen to the stigma
- Of the flower on the SAME plant (= self-pollination)
- or ANOTHER flower on another plant (= cross-pollination)

POLLINATION



METHODS OF POLLINATION

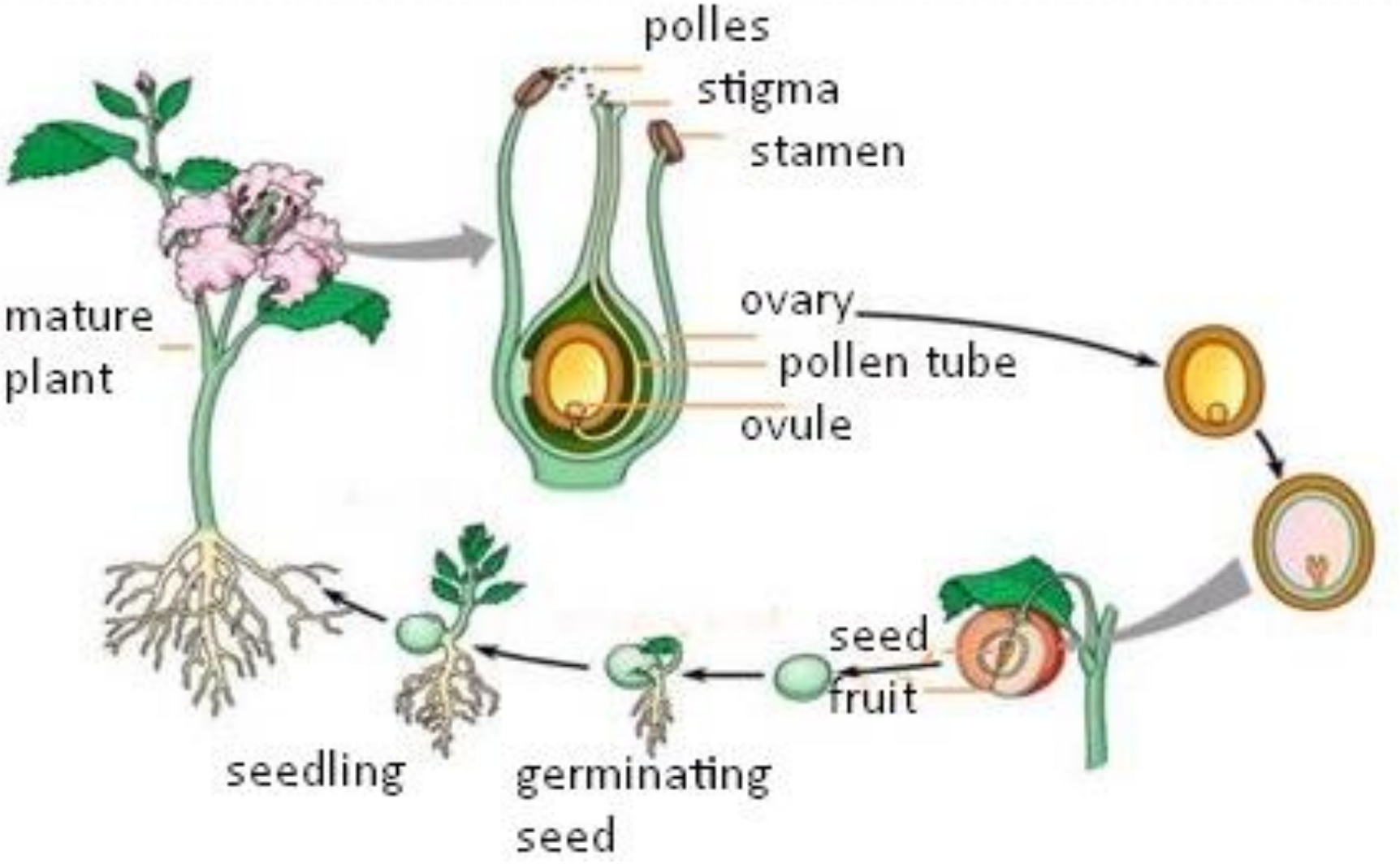
- Pollination by:
  - Insects (mostly bees)
  - Wind (pollinate grasses, oaks, maples)
  - Water (weed)
  - Birds (sun birds or humiingbirds pollinate orchids)

SEXUAL REPRODUCTION IN PLANTS

- FERTILIZATION = part of sexual reproduction after pollination

- Can be defined as the fussion of the male gametes (pollen) with the female gamete (ocum) to form a zygote
- After fertilization and all the developmental stages (zygote, embryo) the ovule transforms into a seed, whereas the ovary transforms into a fruit

FERTILIZATION



ASEXUAL REPRODUCTION

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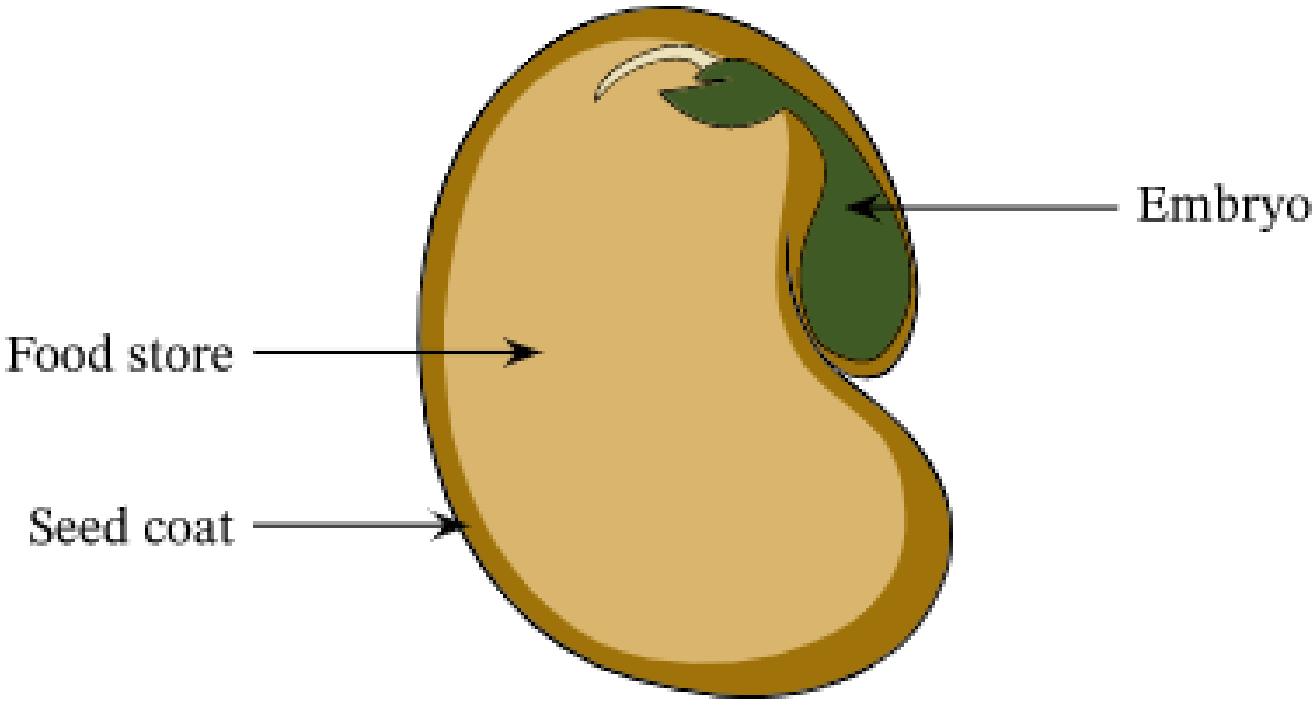
- It can be also called vegetative propagation
- Involves the use of vegetative parts = leaves, stems, roots or modified organs
- The new plant is clone of the mother plant = this technique produce plants identical to their parents

SEED

- The basic function of a flower is to produce seeds trough sexual reproduction
- Seeds are the next generation, serving as the primary method in most plants by which individuals of the species are dispersed across the landscape

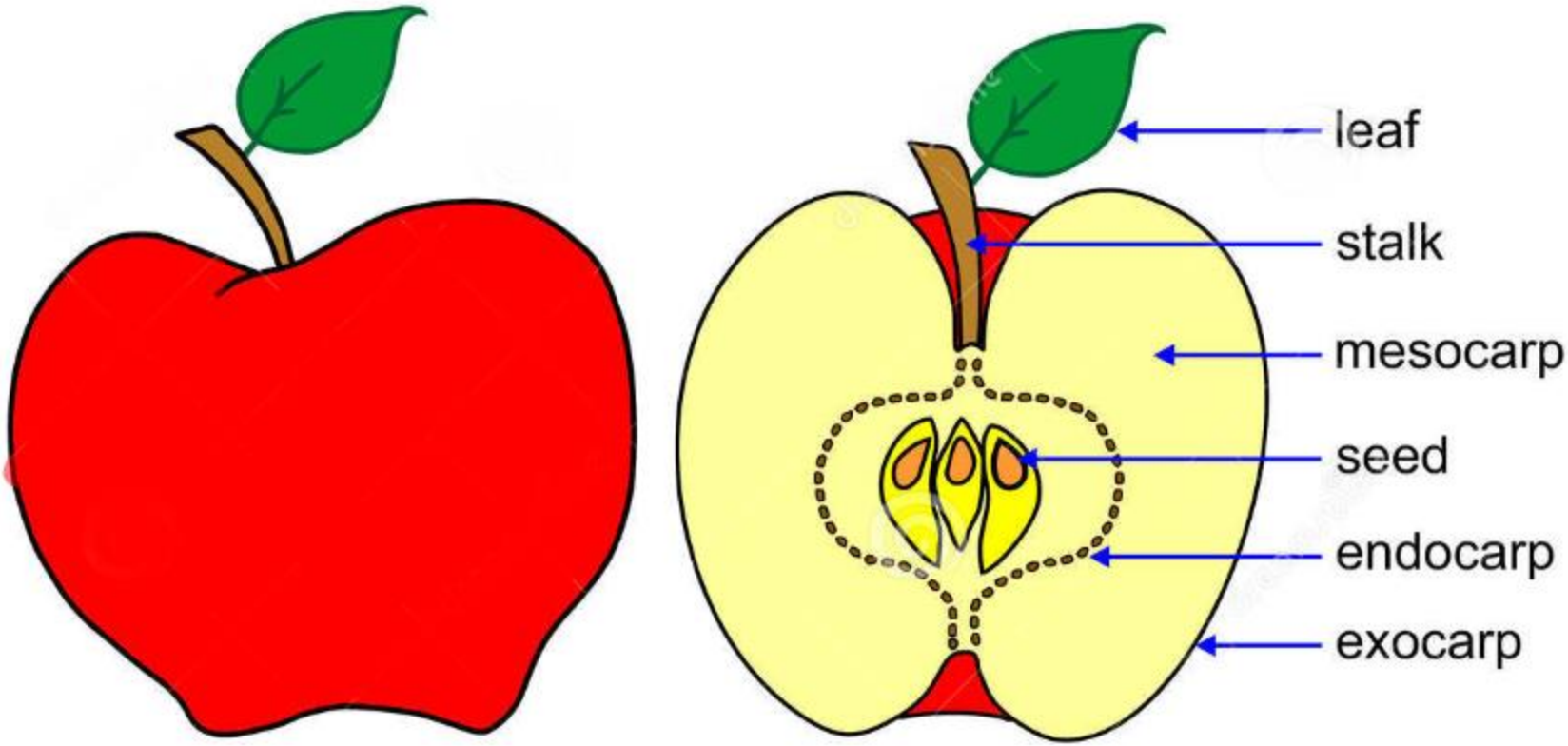
SEED STRUCTURE



FRUIT

- Is formed by the transformation of a flower after fertilization
- Contains one or more seeds protected by an envelope called pericarp
- Helps the seeds to spread
- The seeds germinate after release – seedlings grow from them
- From seedlings grow plants that recreate flowers, then seeds and fruits in countless reproductive cycle of flowering plants

FRUIT STRUCTURE



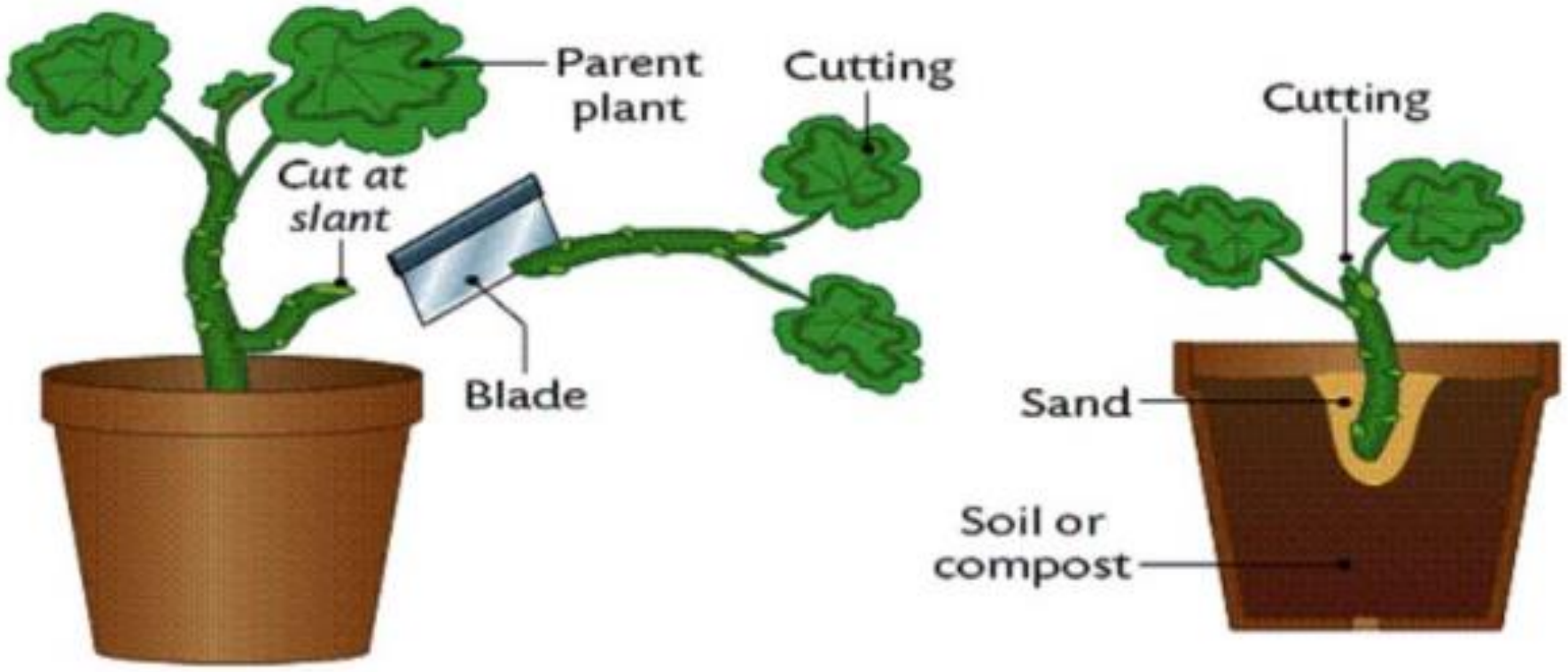
ASEXUAL REPRODUCTION

- Produce clones of mother plants
- Uses different parts of body of plant to reproduce:

- Roofs
- Leaves
- Stems
- Modified organs

ALIVE

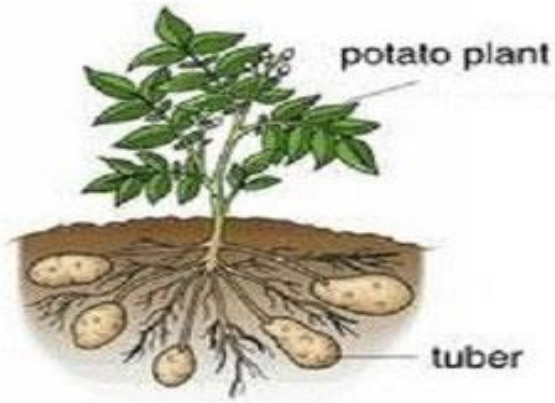
ASEXUAL REPRODUCTION

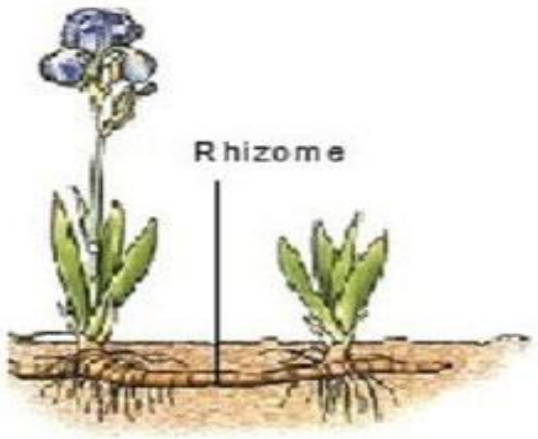


TYPES OF ASEXUAL

- Include:
  - Runners
  - Bulbs
  - Tubers
  - Budding
  - Binary fission
  - Fragmentation

EXAMPLES OF ASEXUAL REPRODUCTION

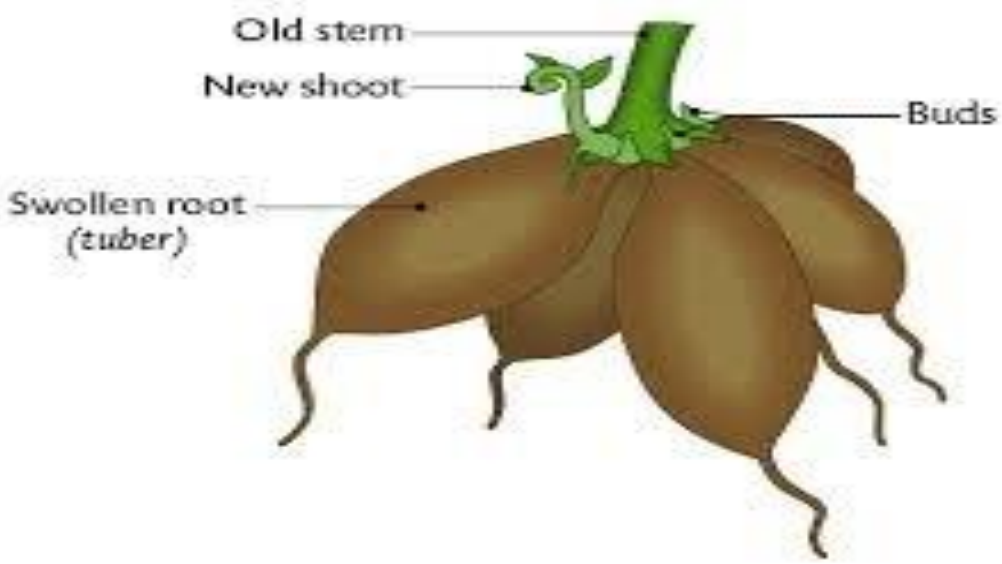




VEGETATIVE PROPAGATION BY ROOT

ALIVE

- In some plants, buds are produced at the base of old stem just above the tap root help in vegetative propagation
- For example carrot, sweet potato



VEGETATIVE PROPAGATION IN ONION

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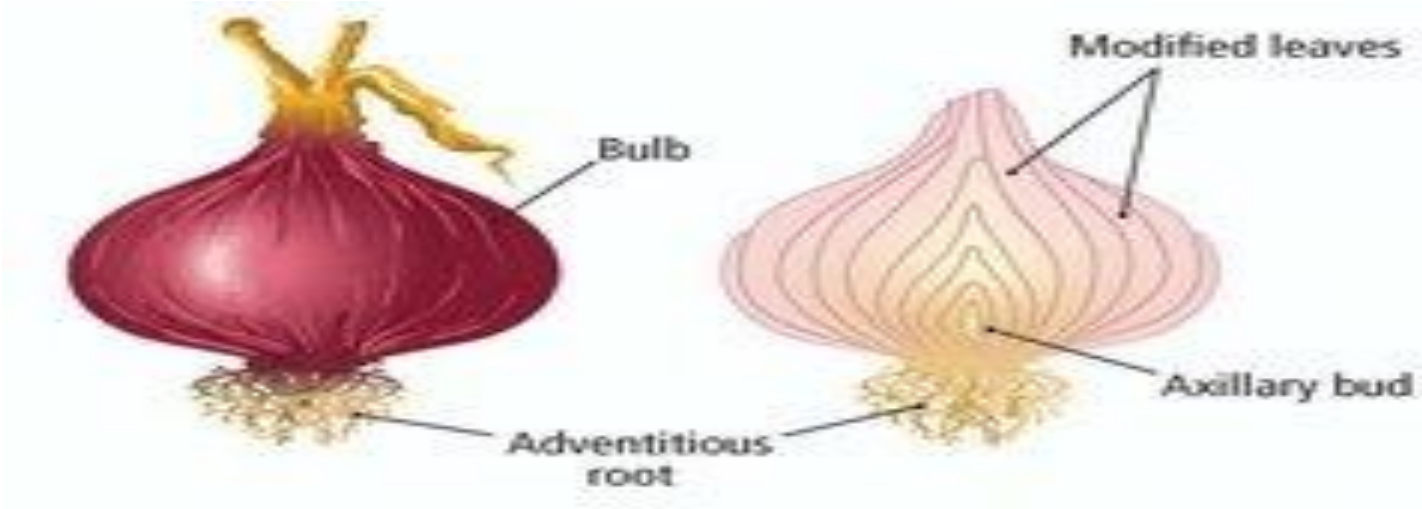
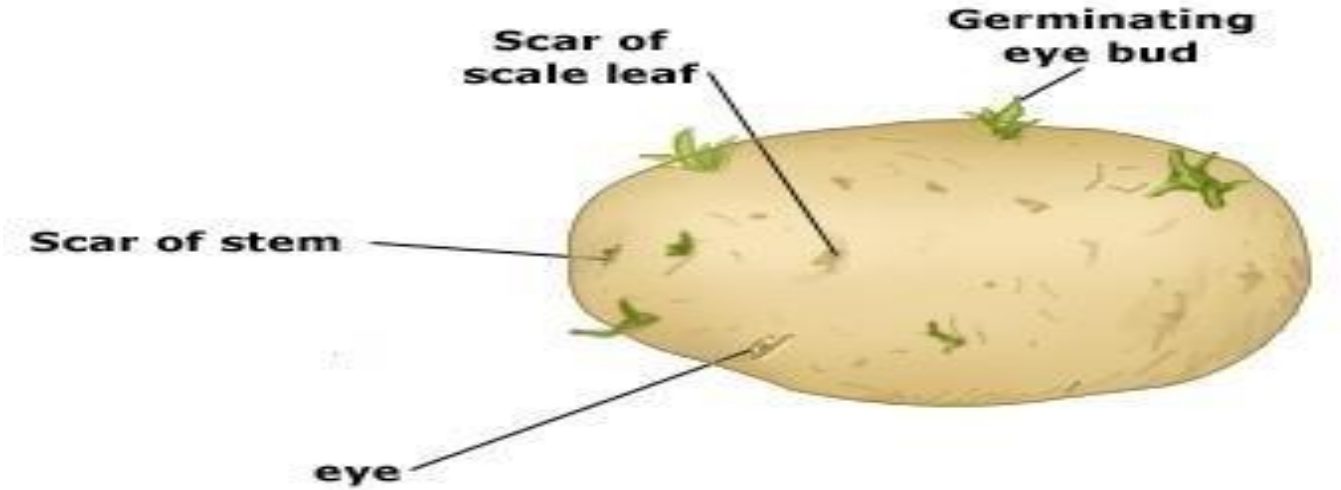
- Takes place by stem
- From the activity of growing onion by vegetative propagation it can be found that onion bulbs have thick, short stem



VEGETATIVE PROPAGATION IN POTATO

- Takes place by stem
- From the activity of growing potato by vegetative propagation it can be found that new plants grow from the buds within few days



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