



Chapter 11

Reproduction: How Life Continues



Reproduction ensures that life continues, bringing new life to sustain the future.



Observe



Think



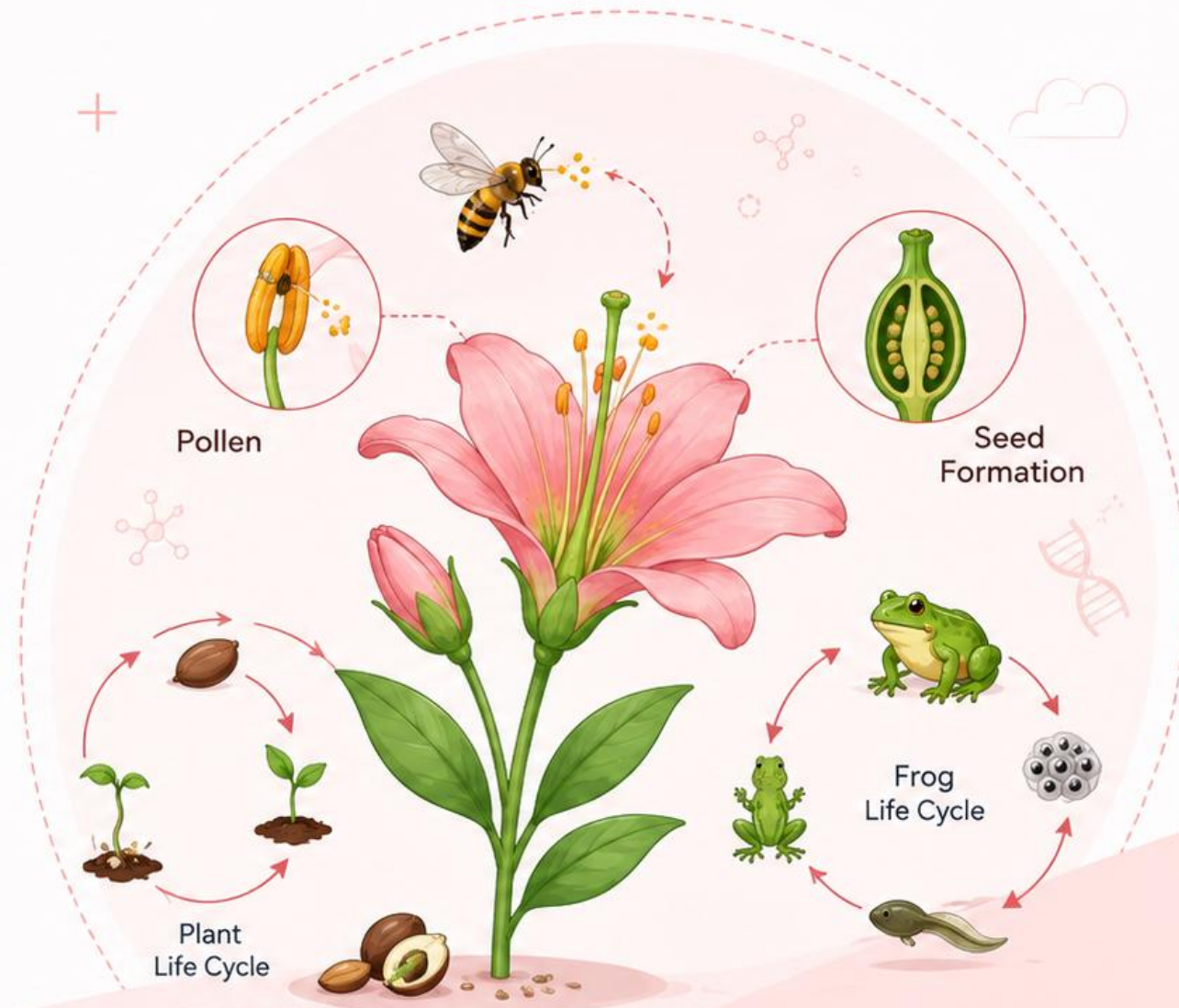
Experiment



Explore



Discover

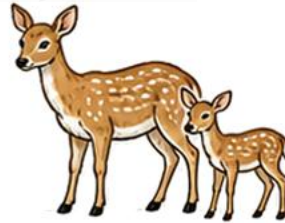


REPRODUCTION: HOW LIFE CONTINUES

Reproduction is the biological process by which organisms produce new individuals of their own species.

Why it matters: continuity of life + transfer of genetic information

Birth → Growth → Maturity → Reproduction → Death



Individuals die,
but reproduction
continues the species.



ASEXUAL

one parent • no fusion of gametes •
offspring are very similar



SEXUAL

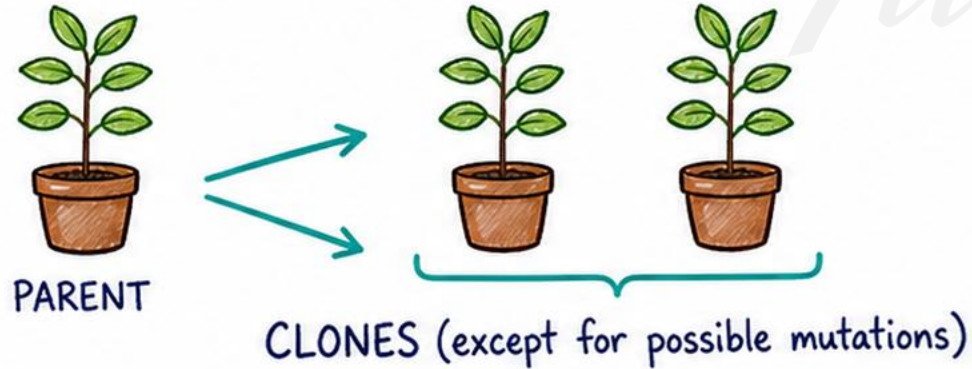
gametes unite • genetic information
mixes • variation appears



ASEXUAL AND SEXUAL REPRODUCTION

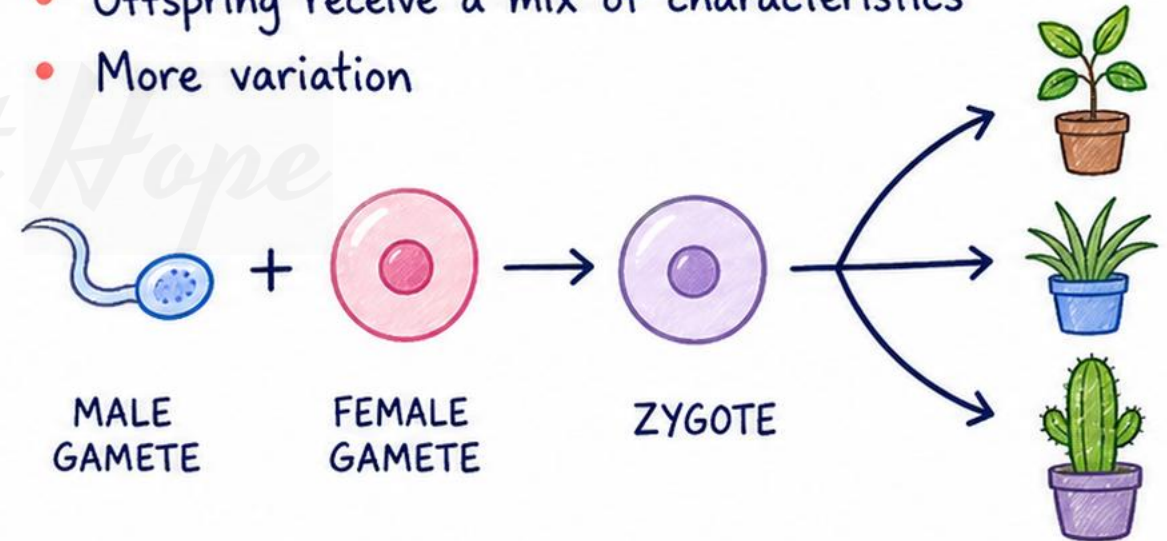
ASEXUAL

- One parent
- No fusion of gametes
- Usually based on mitosis
- Fast; many offspring can form
- Offspring are genetically very similar
- Little variation



SEXUAL

- Male and female gametes unite
- Meiosis makes haploid gametes
- Fertilisation restores chromosome number
- Offspring receive a mix of characteristics
- More variation

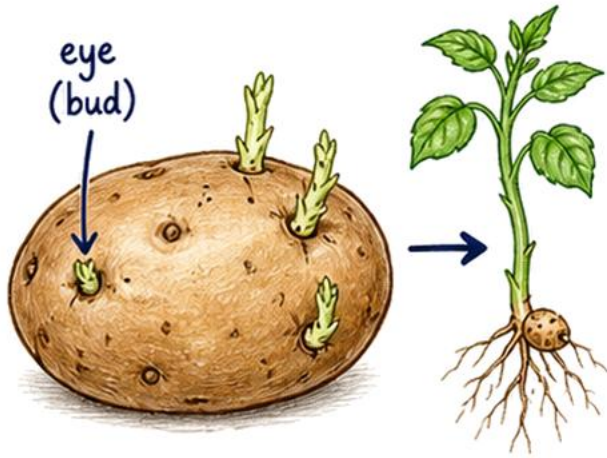


Variation may help a population adapt when the environment changes.

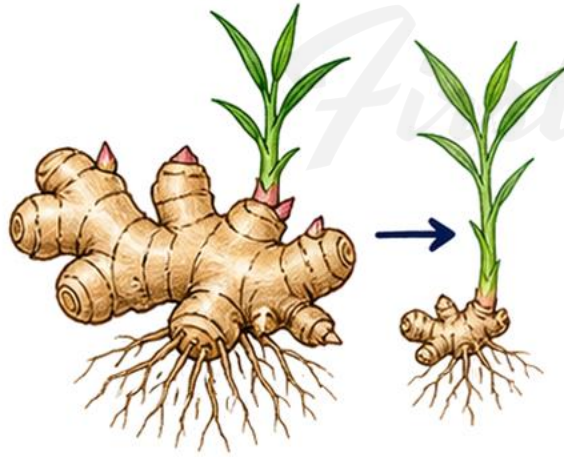
VEGETATIVE PROPAGATION IN PLANTS

- Vegetative propagation is a type of asexual reproduction.
- A new plant grows from a stem, root or leaf — not from a seed.

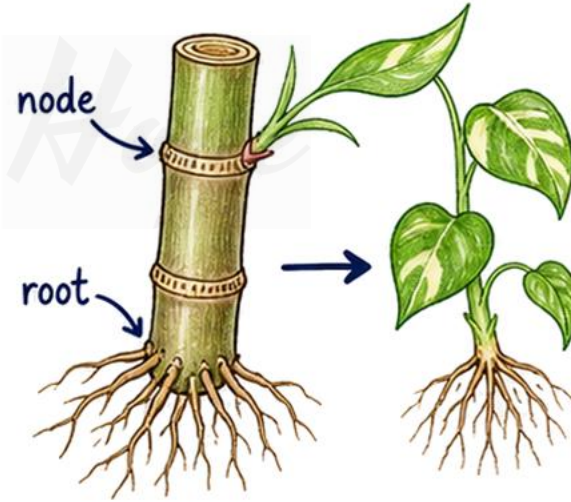
Potato stem tuber —
eyes are buds



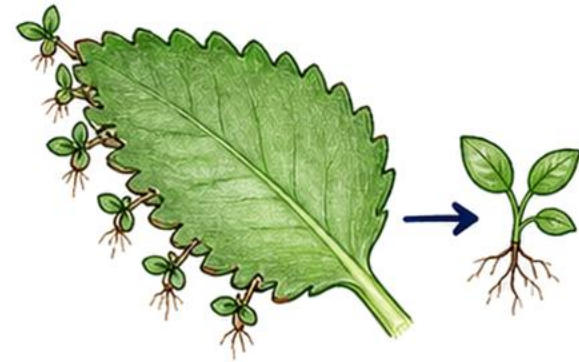
Ginger —
underground stem
(rhizome)



Money plant /
sugarcane — stem



Bryophyllum —
leaf plantlets



vegetative part → new plant



ONE PARENT



New plants are usually
genetic clones.



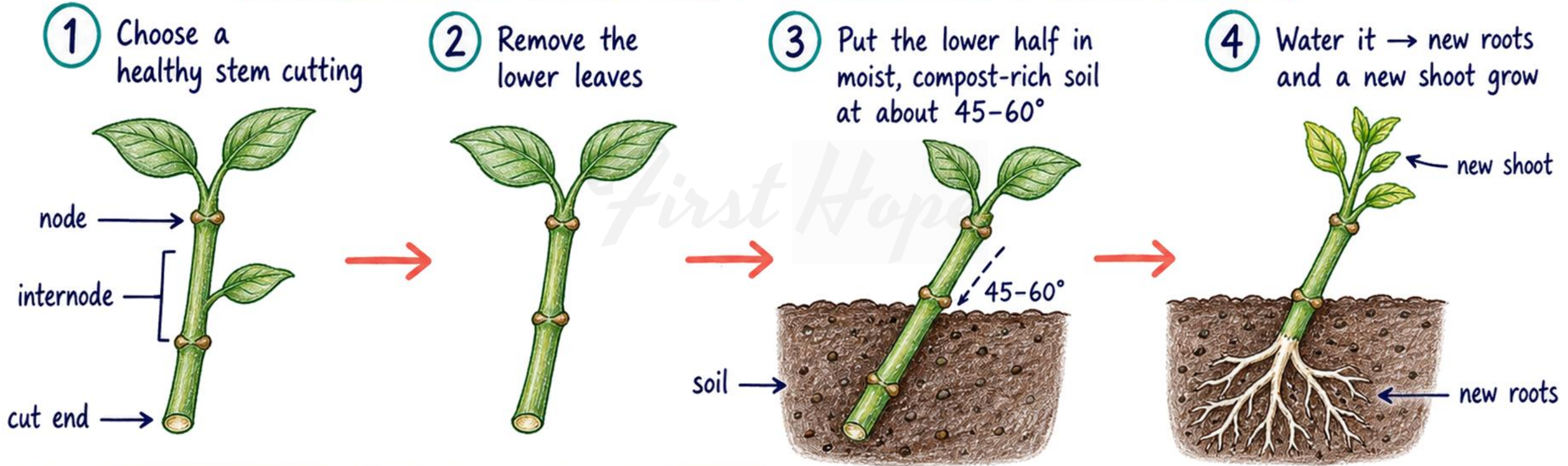
Useful plants can be
multiplied quickly.



Farmers can preserve
desirable traits.

GROWING PLANTS BY CUTTINGS

Cutting: a piece of stem with nodes is planted so it can grow roots and shoots.



Examples: money plant • sugarcane • rose

Key idea: A new plant grows from the cutting — no seed is needed.



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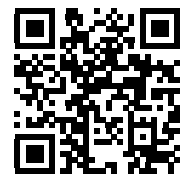


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