

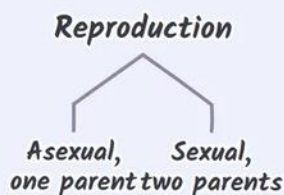
Life Processes in Living Organisms Part 2

reproduction, from a single parent to two, and the human systems that carry it out



Why organisms reproduce *

- reproduction is the production of new individuals of the same kind, and it is what keeps a species in existence
- it is the one life process not needed by the individual, only by the species
- asexual reproduction needs one parent and produces offspring genetically identical to it
- sexual reproduction needs two parents and gametes, and produces offspring that differ from both
- DNA copying is central to both, and small errors in that copying are the origin of variation
- variation is the advantage of sexual reproduction, giving the population something to survive a changed environment with



the two routes branching from one heading: the left needs a single parent and copies it exactly, while the right needs two and shuffles their contributions, which is where variation comes from

The asexual methods

Binary fission

the parent splits into two equal cells. Seen in amoeba and bacteria, and in leishmania it happens along a definite plane rather than any direction

Budding

a bud grows out of the parent and separates when mature. Seen in yeast and hydra

Fragmentation

the body breaks into pieces and each grows into a new individual. Seen in spirogyra. In planaria the same idea is called regeneration

Vegetative

new plants from a root, stem or leaf rather than a seed: potato eyes, ginger, and the leaf buds of bryophyllum. It preserves the parent's exact traits

vegetative propagation is used deliberately in farming because every plant produced is identical to the parent, so a desirable variety is reproduced exactly rather than reshuffled

