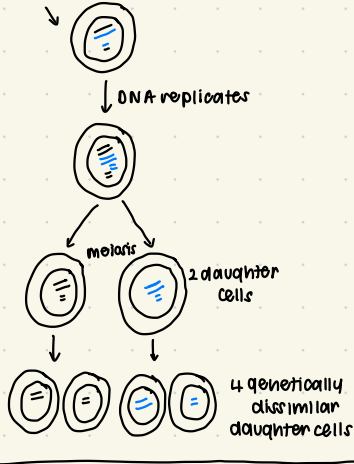


## sexual reproduction

- process involving the fusion of gametes to form a zygote and results in the production of genetically dissimilar offspring
- gametes are produced in meiosis
  - ↳ gametes are sex cells (male - sperm and female - egg) during fertilisation their nuclei fuse to form a fertilised egg



## meiosis

- gives rise to genetically dissimilar offspring in which chromosome number is halved
  - ↳ meiosis is reduction division
  - ↳ gives rise to haploid gametes in sexual reproduction

# Chap 15

## Definitions:

### Homologous chromosomes:

- 1 of each pair comes from mother and father respectively
- homologous chromosomes have the same length, shape and sequence of genes

### Diploid cell:

- contains 2 sets of chromosomes - each deriving from each parent

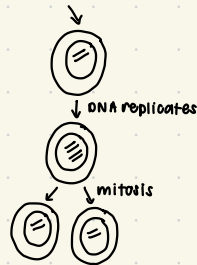
↳ somatic cells (non-sex cells)

### Haploid cell:

- contains 1 set of chromosomes, each derived from either parent

## asexual reproduction

- process resulting in the production of genetically identical offspring from each parent
- without the fusion of gametes
  - ↳ e.g. runners, rhizomes and stem tubers
- this is through mitosis (cell division process)



## mitosis:

- results in the formation of daughter cells that are genetically identical to each other and to the parent
  - ↳ allows for asexual reproduction to occur, and for growth and repair of damaged and dead cells

## advantages

- offspring may inherit beneficial qualities from both parents
- genetic variation among offspring
  - ↳ better adapted to changes in environment

## disadvantages

- 2 parents are required (except in bisexual flowers)
- fusion of gametes
- slower method

## asexual reproduction

- production of genetically identical offspring
- involves 1 parent
- without the fusion of gametes
- faster method

## sexual reproduction

- production of genetically dissimilar offspring
- involves 2 parents
- through the fusion of nuclei of male and female gametes to form zygote
- slower method

## advantages

- all beneficial traits are passed down to offspring
- no fusion of nuclei of gametes
- only need 1 parent
- faster method

## disadvantages

- no genetic variation
  - ↳ species are not well-adapted to changes in the environment