

## Asexual reproduction

**MITOSIS:** provides genetic continuity

**Who?** body cells (somatic cells)

**What?** cell division that results in 2 identical cells

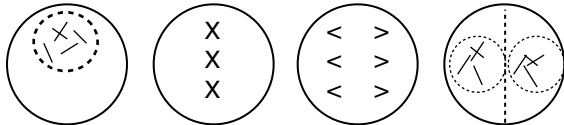
**When?** all the time

**Where?** body cells

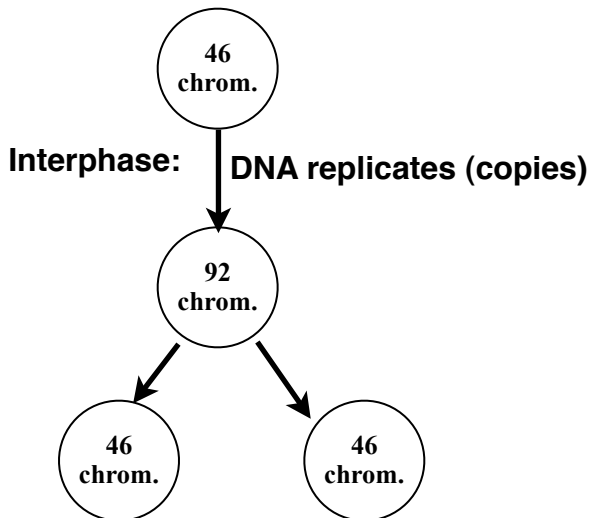
**Why?**

- replace damaged cells
- replace dead cells
- repair and heal our body
- allow organisms to grow
- produce 2n (diploid) cells

**How?**



**What does it look like?**



Produces 2 new daughter cells

that are genetically identical.

2n = diploid (2 sets of chromosomes)

## Sexual reproduction

**MEIOSIS:** provides genetic **variation**

**Who?** sex cells (gametes)

**What?** cell division that results in haploid cells (egg, sperm)

**When?** puberty

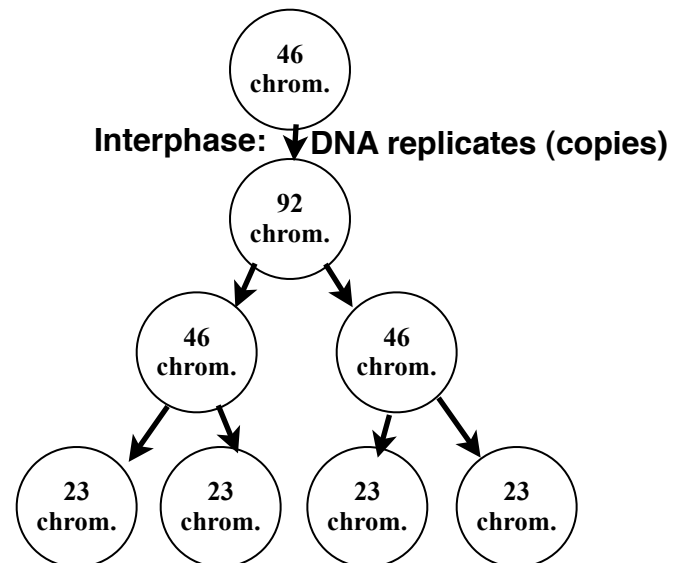
**Where?**  
females: ovaries  
males: testes

**Why?**

- produce n (haploid) cells
- this allows sexual reproduction to occur
- **provides genetic variation!**

**How?** 2 divisions of the cell

**What does it look like?**



Produces **4 gametes** (sex cells)

Males: 4 sperm Females: 1 egg, 3 polar bodies

They are all genetically different

(variation = raw material for adaptations = survival!!)

**n = haploid** (half # of chromosomes) so fertilization can occur.

Sources of variation:

**crossing over** = exchanging genetic material, which leads to **random assortment**. Independent assortment is another source of variation.