

5.2 Meiosis Vocabulary

Phases of Meiosis

Interphase I

Prophase II

Prophase I

Metaphase II

Metaphase I

Anaphase II

Anaphase I

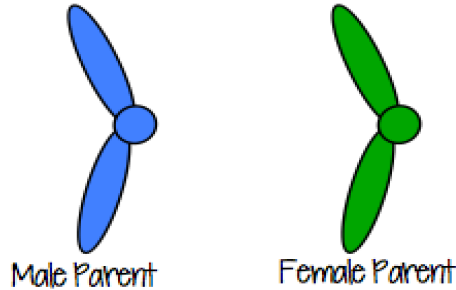
Telophase II

Telophase I

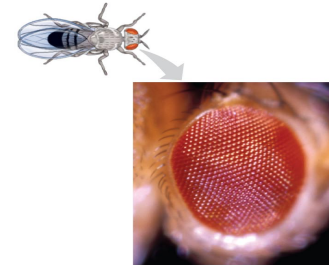
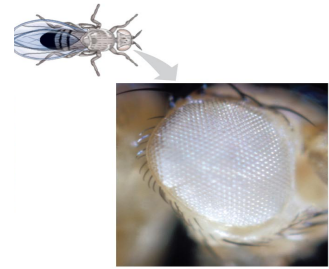
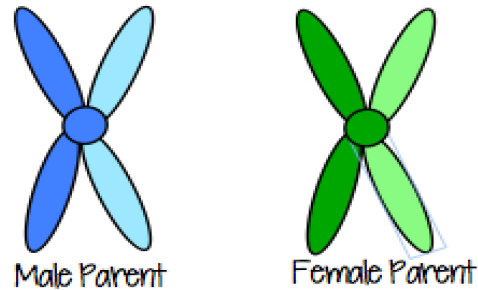
5.2 Phases of Meiosis I

Before we start...

Homologous
Chromatids



Homologous Sister
Chromatids



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5.2 Phases of Meiosis I

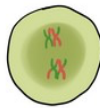
Reminder...Purpose of Meiosis I

Create genetic variation

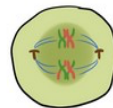
Separate the homologous chromatids
(aka separate “parents”)



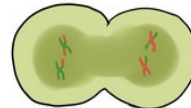
Interphase



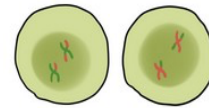
prophase



metaphase



Anaphase

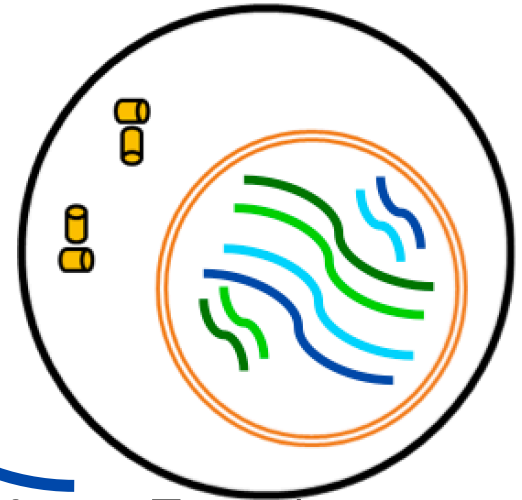


Telophase

5.2 Phases of Meiosis I

Interphase I

- Duplicate DNA → make sisters
- Centrioles appear



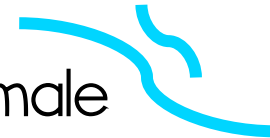
**Note:

Homologous from Male

Homologous from Female

Sister from male

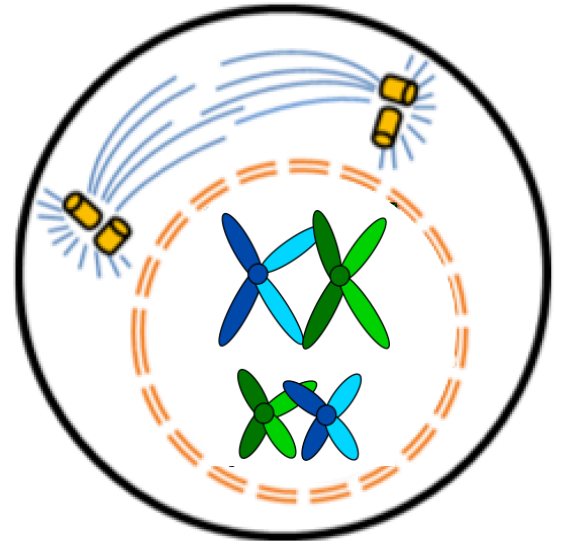
Sister from Female



5.2 Phases of Meiosis I

Prophase I

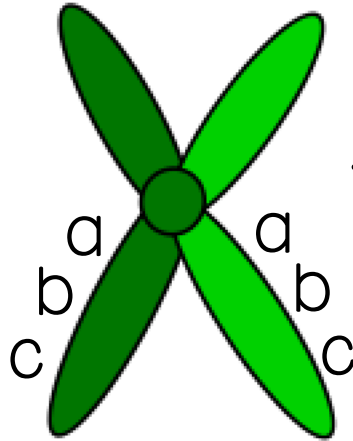
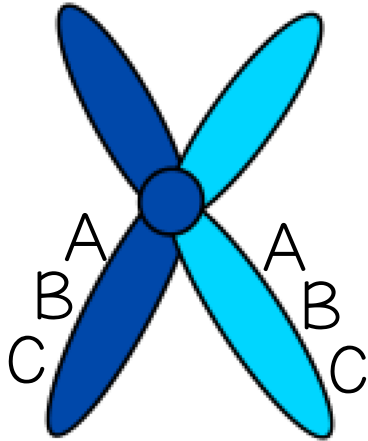
- Nuclear membrane dissolves
- Spindles appear
- Chromosomes condense & pair with sister



5.2 Phases of Meiosis I

Prophase I

- Cross-Over Event! → Genetic Variation

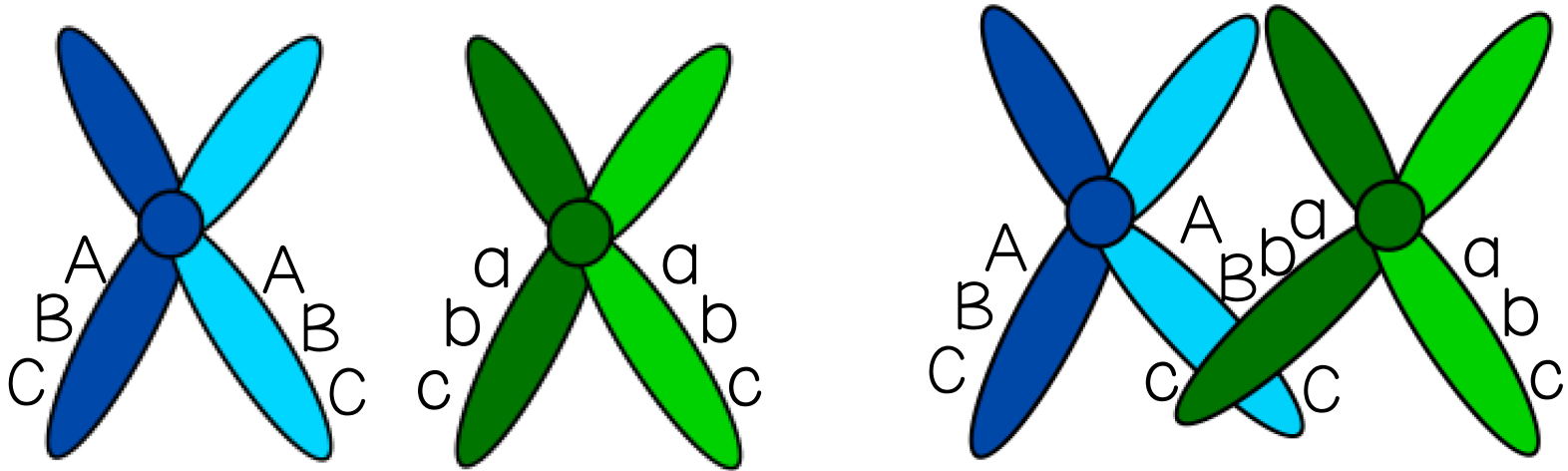


Homologous Sister
Chromatids

5.2 Phases of Meiosis I

Prophase I

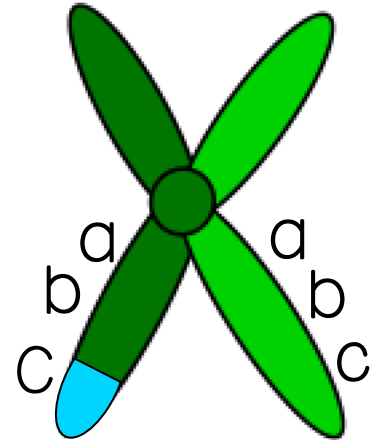
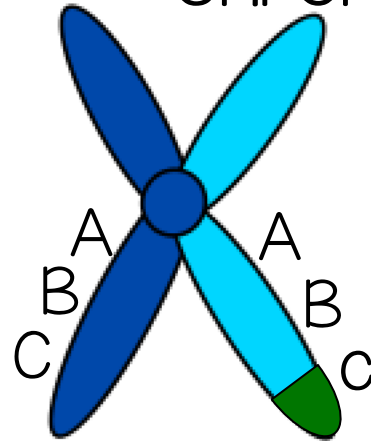
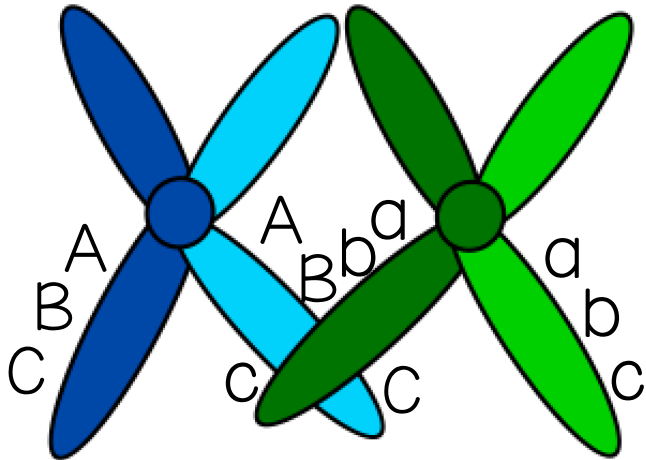
- Cross-Over Event! → Genetic Variation



5.2 Phases of Meiosis I

Prophase I

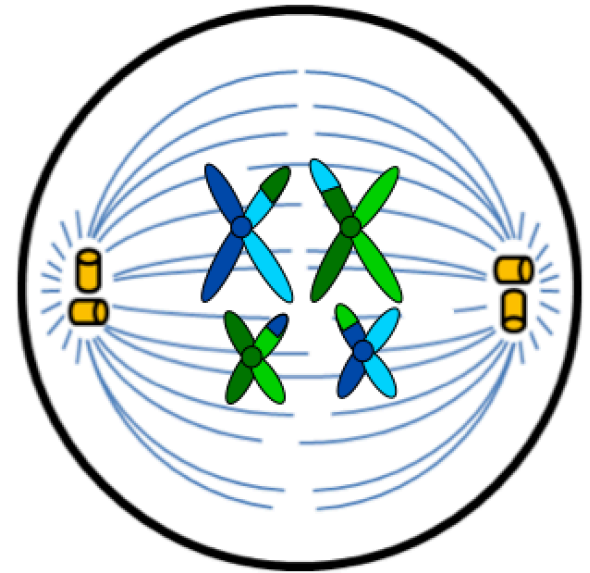
4 Genetically Unique Chromatids!



5.2 Phases of Meiosis I

Metaphase I

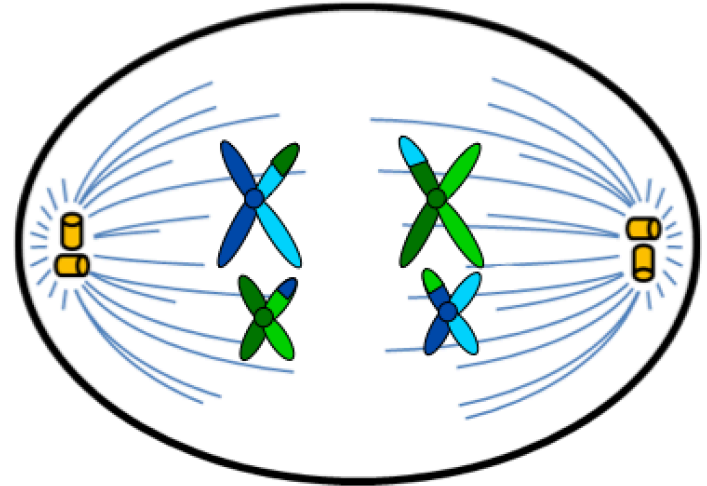
- Homologous chromatids line up in TETRADS
- Spindle fibers attach to centromeres & begin to pull



5.2 Phases of Meiosis I

Anaphase I

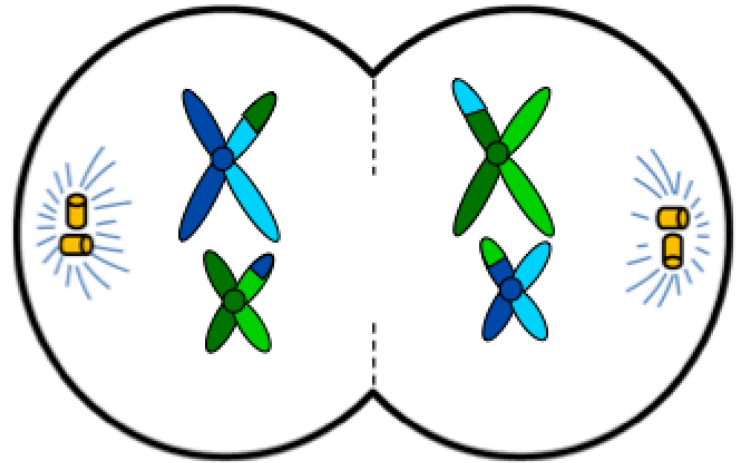
- Homologous (parents) chromatids are pulled apart by spindles



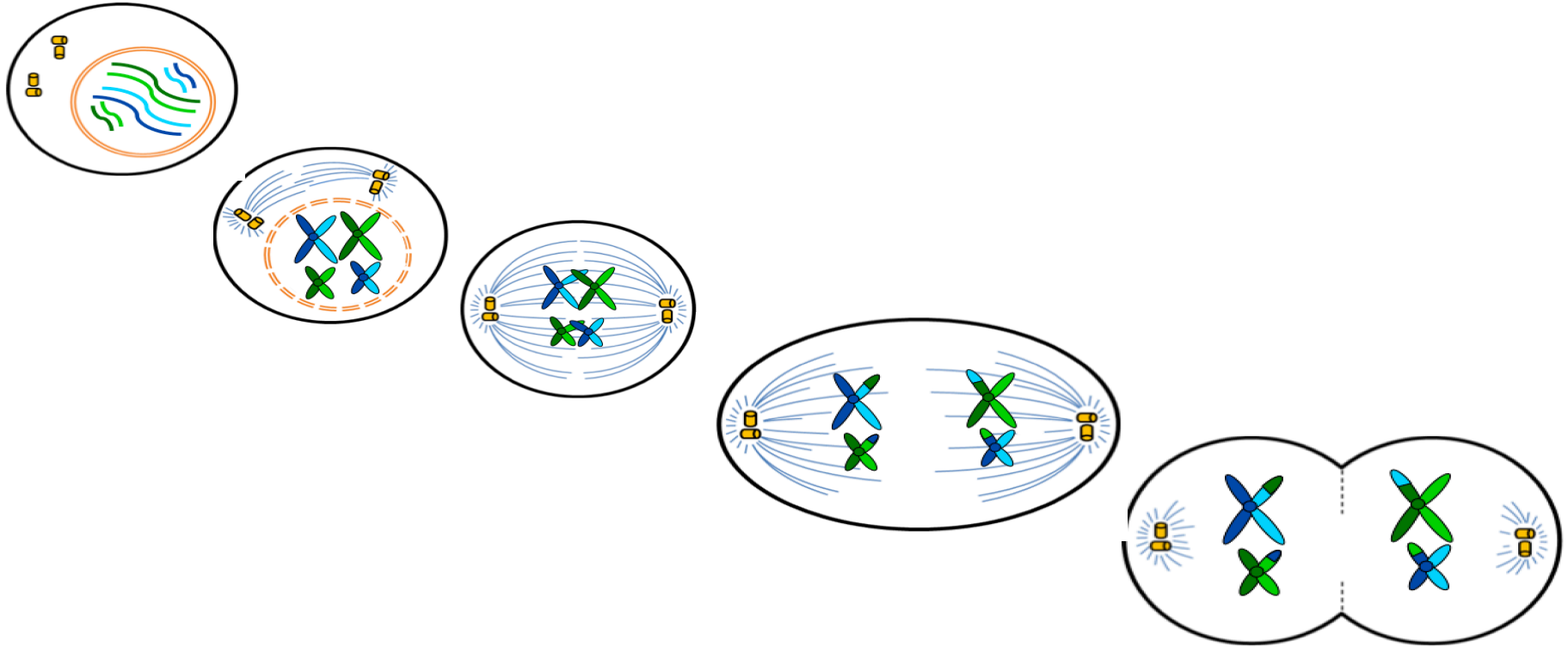
5.2 Phases of Meiosis I

Telophase I

- Spindles dissolve away
- Two new daughter cells form
- NO NEW NUCLEAR MEMBRANES YET!



5.2 Phases of Meiosis I

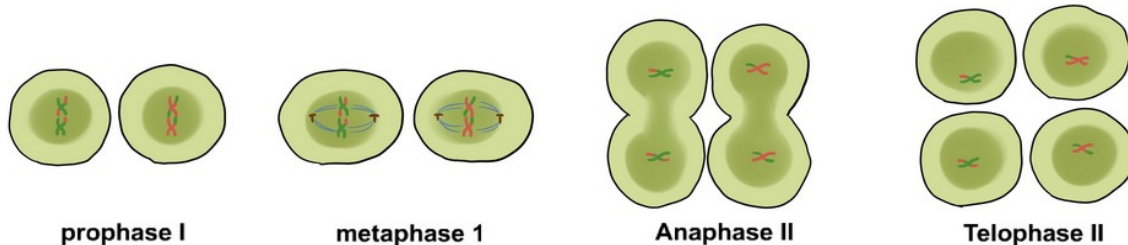


5.2 Phases of Meiosis II

Purpose & Outcome of Meiosis II:

Separate sister chromatids

Create FOUR genetically unique haploid gametes (sperm/eggs)

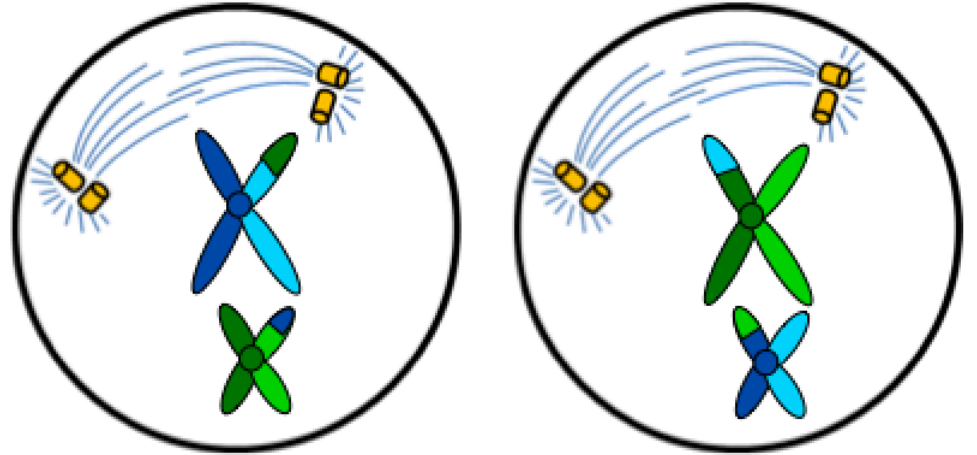


5.2 Phases of Meiosis II

Prophase II

(no interphase, no duplication of chromosomes)

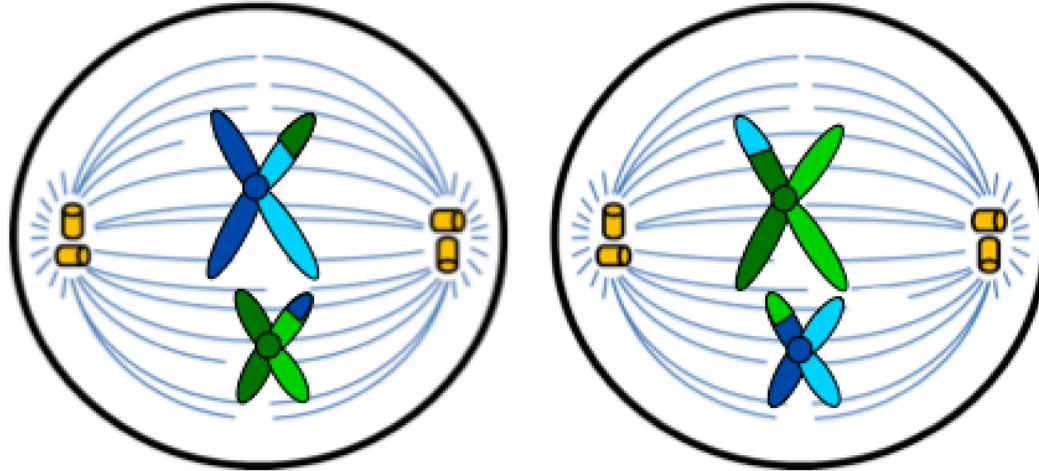
- Spindles reform in each cell



5.2 Phases of Meiosis II

Metaphase II

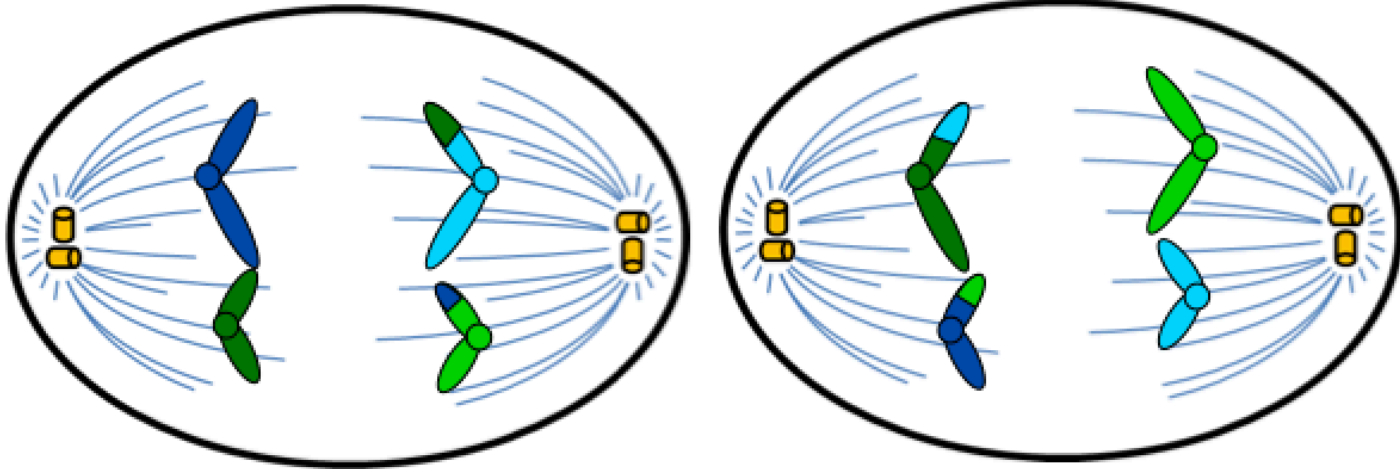
- Sister chromatids in each cell line up in middle



5.2 Phases of Meiosis II

Anaphase II

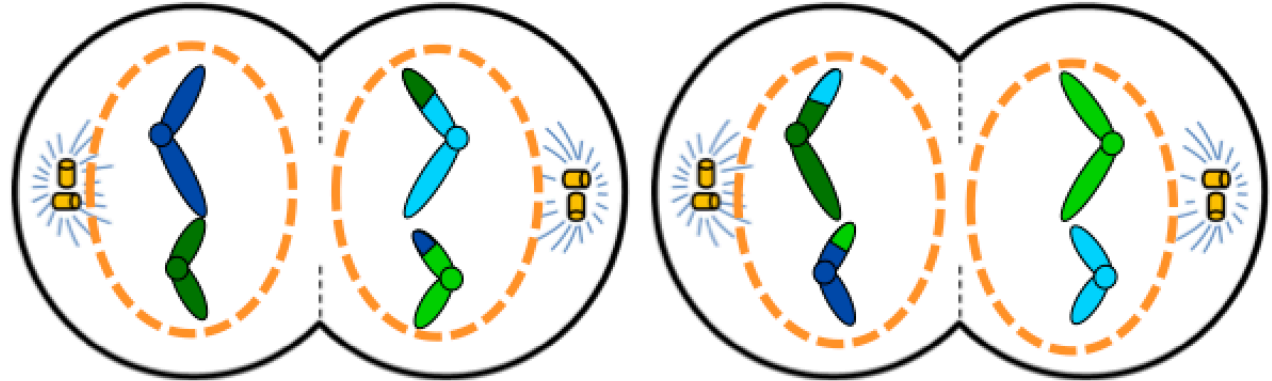
- Spindles pull apart sister chromatids



5.2 Phases of Meiosis II

Telophase II

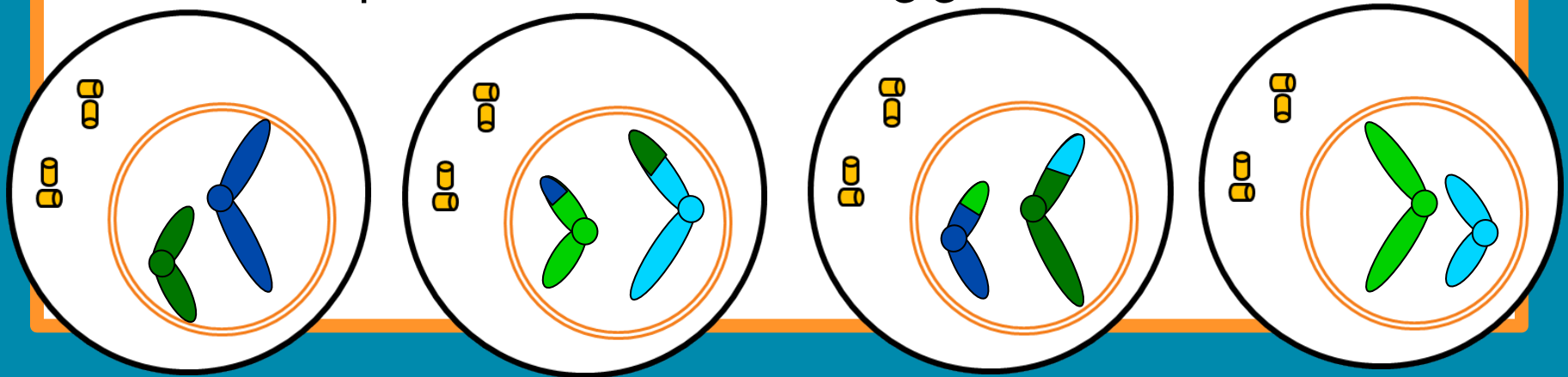
- Cells split apart
- New nuclear membranes form



5.2 Phases of Meiosis II

Result:

- Four GENETICALLY UNIQUE HAPLOID cells
- Male = sperm; female = egg

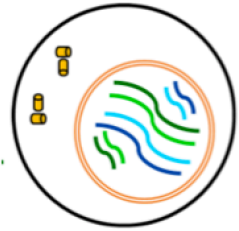


5.2 Meiosis & Genetic Recombination

Standard Objectives:

- I can describe the general process and outcome
 - I can diagram and describe the phases
- I can describe the potential outcome of the new gamete cells
 - I can identify the TWO events that result in genetic variation in sexually reproducing organisms

5.2 Phases of Meiosis II

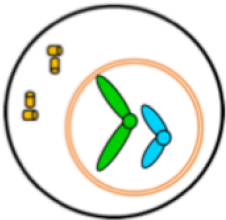
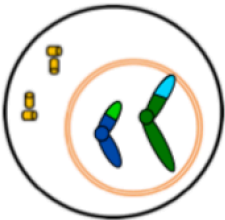
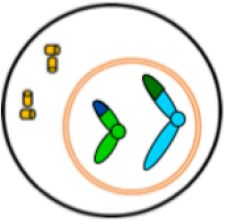
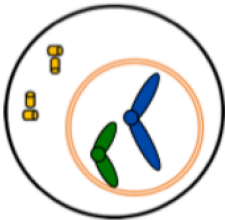


Diploid cell in ovaries/testes



1st:

Separate homologous
Genetically unique haploid



2nd:

Separate sisters