

1

Interphase I

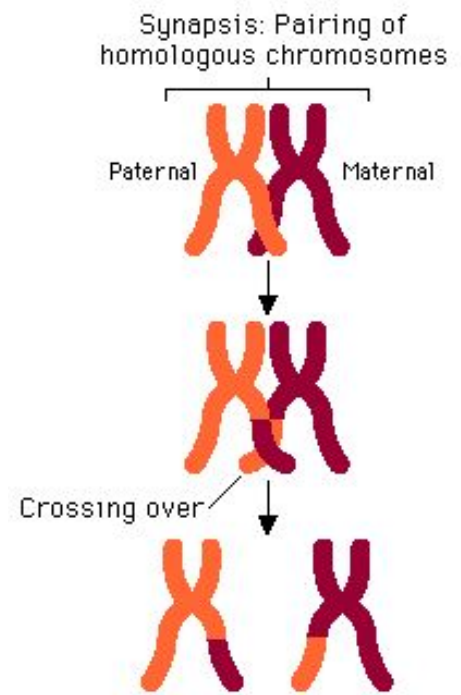
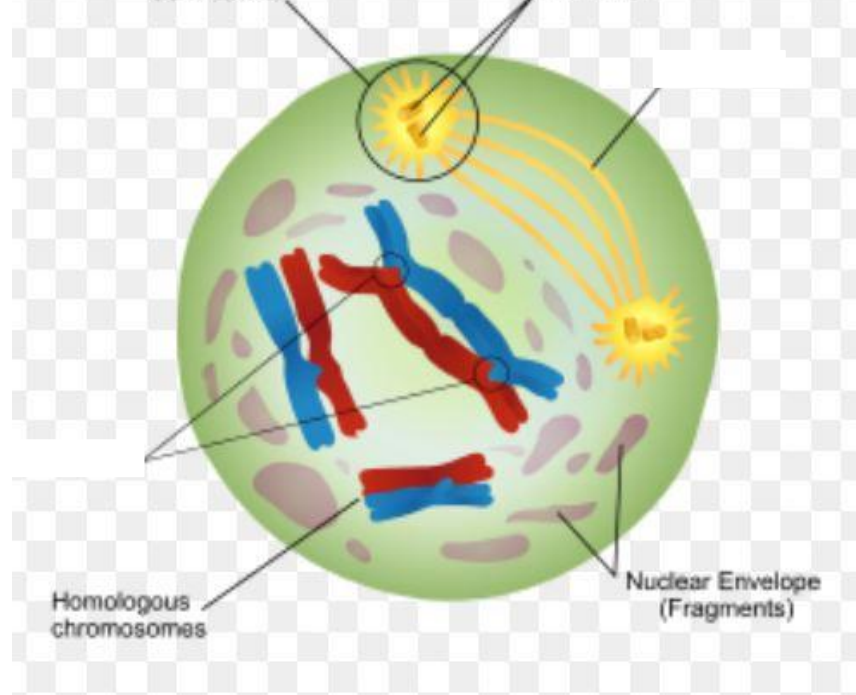
- Chromosomes replicate during S phase, just as in mitosis
- Germ cells grow in preparation for Meiosis

6

Interphase II

- Unlike in Interphase I, chromosomes do not replicate.
- Usually brief; shorter than Interphase I

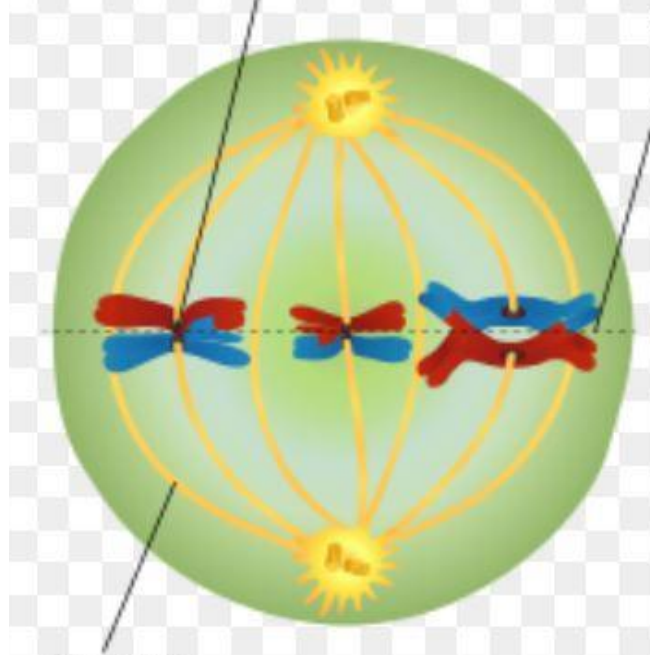
2



Prophase I

- Chromosomes condense; nuclear membrane breaks down.
- **Crossing over** occurs.
 - Homologous (matching) chromosomes swap genes.
 - **Crossing over** increases **genetic diversity!**

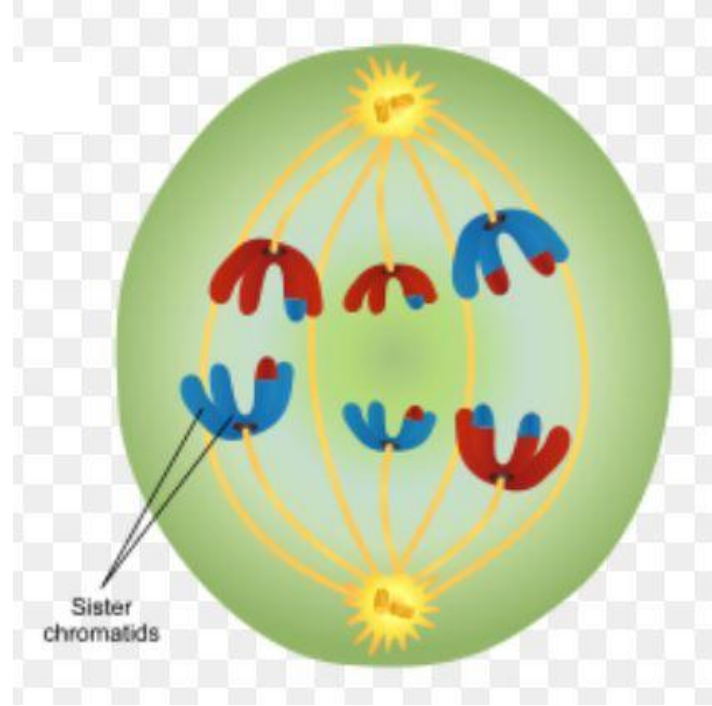
3



Metaphase I

- Homologous chromosome pairs line up in the middle of the cell
- Pairs line up randomly. This is called independent assortment.
- Independent assortment increases genetic diversity

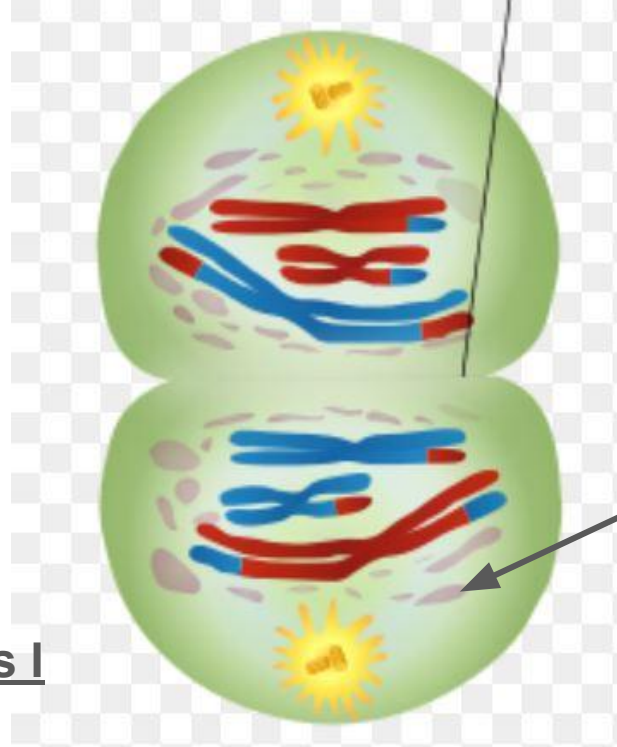
4



Anaphase I

- Homologous pairs are separated.
- Sister chromatids are still attached

5

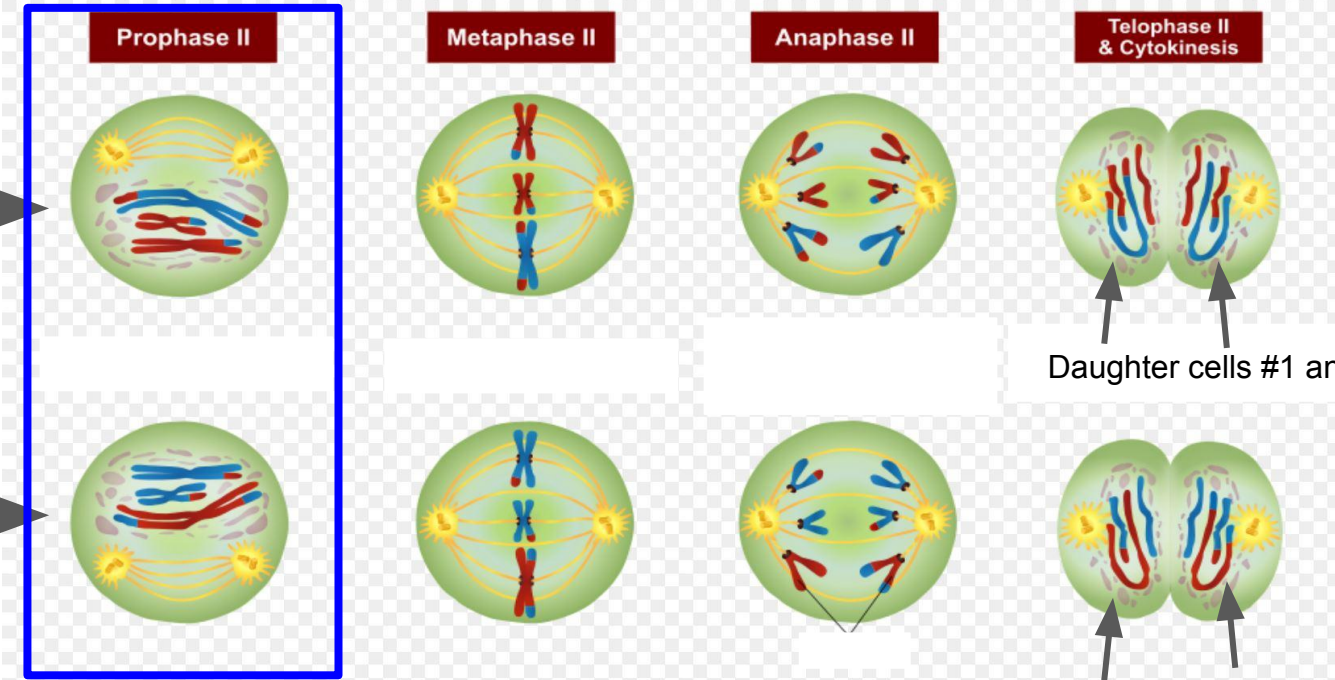


Nuclear envelope is re-forming around the chromosomes

Telophase I and Cytokinesis I

- Chromosomes gather at opposite ends of the cell.
- The cytoplasm divides.
- Each cell is genetically different (unique)

7



Daughter cell #1

Daughter cell #2

Prophase II

Prophase II

Metaphase II

Anaphase II

Telophase II & Cytokinesis

Daughter cells #1 and 2

Daughter cells #3 and 4

- Chromosomes condense
- nuclear membrane breaks down.

8

Prophase II

Metaphase II

Anaphase II

Telophase II & Cytokinesis

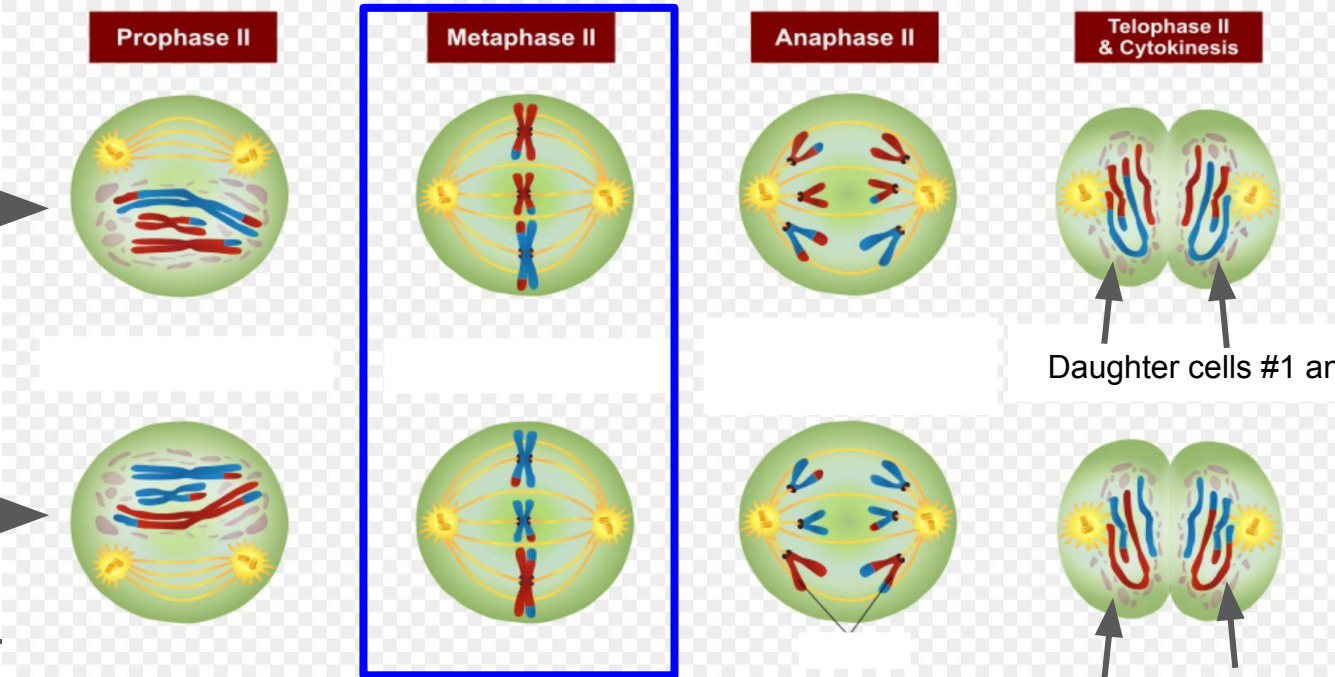
Daughter cell #1

Daughter cell #2

Daughter cells #1 and 2

Daughter cells #3 and 4

Metaphase II



- Chromosomes line up in the middle of the cell (looks like mitosis).

9

Prophase II

Metaphase II

Anaphase II

Telophase II & Cytokinesis

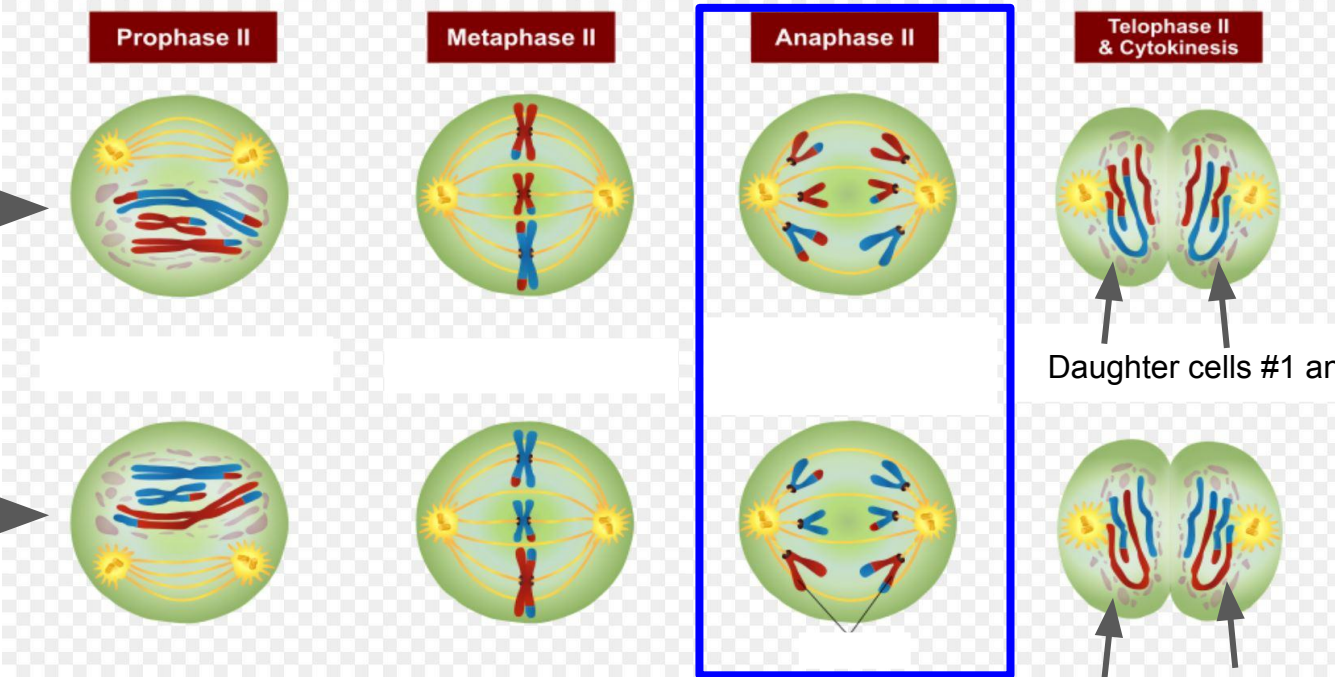
Daughter cell #1

Daughter cell #2

Daughter cells #1 and 2

Daughter cells #3 and 4

Anaphase II



- Sister chromatids are separated (looks like mitosis).

10

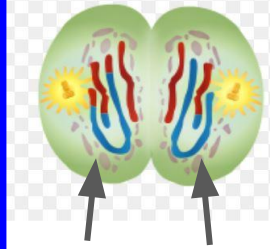
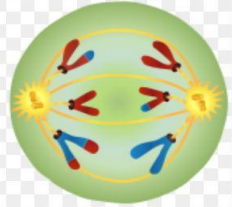
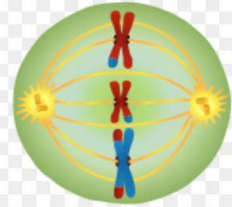
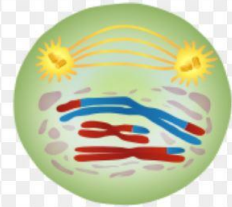
Prophase II

Metaphase II

Anaphase II

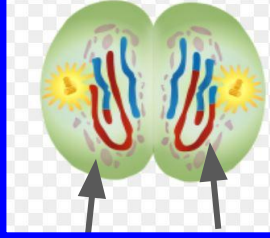
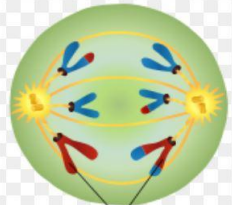
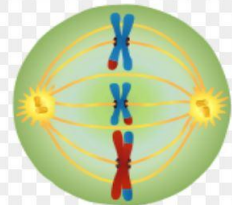
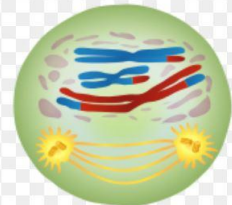
Telophase II & Cytokinesis

Daughter cell #1



Daughter cells #1 and 2

Daughter cell #2



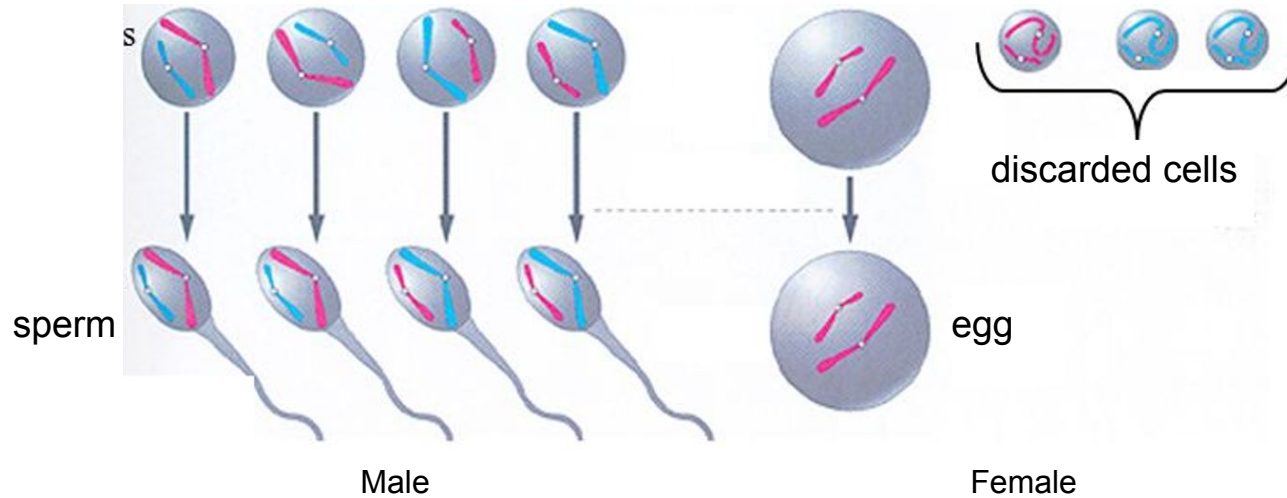
Daughter cells #3 and 4

Telophase II

and Cytokinesis II

- Chromosomes gather at opposite ends of the cell.
- The cytoplasm divides.
- The product: **four unique haploid daughter cells!**

11



Gametogenesis

The four, unique, haploid daughter cells created by Meiosis become egg or sperm.

Fertilization: Haploid sperm + haploid egg = diploid baby