Chapter 7-1

Meiosis

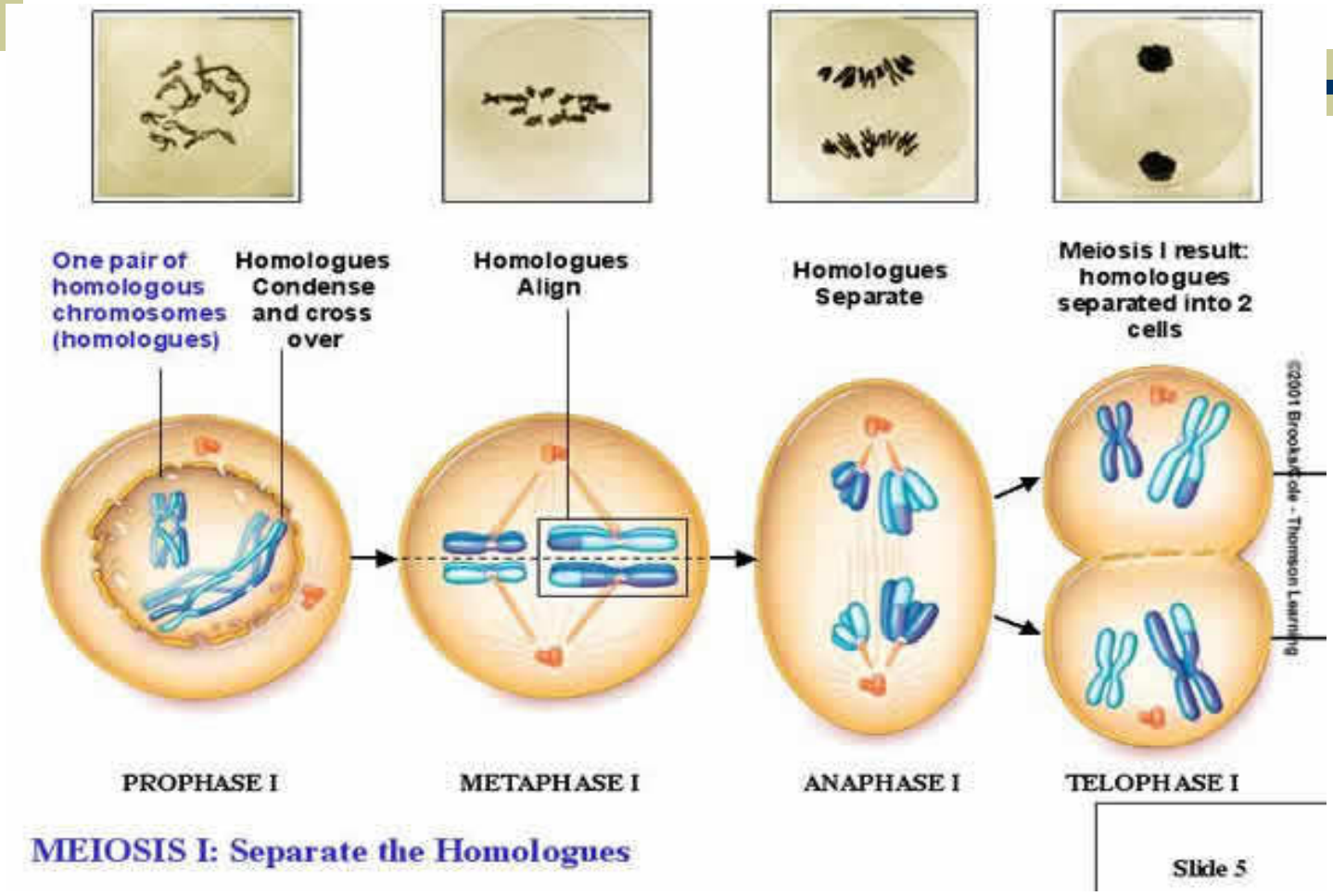
Meiosis

- A form of cell division that halves the number of chromosomes when forming specialized reproductive cells (gametes)

Crossing-over

- Occurs when portions of a chromatid on one homologous chromosome are broken and exchanged with corresponding chromatid portions of the other homologous chromosome.

Meiosis 1


One pair of homologous chromosomes (homologues)
Homologues Condense and cross over
Homologues Align
Homologues Separate
Meiosis I result: homologues separated into 2 cells
PROPHASE I
METAPHASE I
ANAPHASE I
TELOPHASE I
MEIOSIS I: Separate the Homologues
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Prophase I

- Chromosomes become visible
- Nuclear envelope dissolves
- Crossing-over occurs

Metaphase I

- Pairs of homologous chromosomes move to the equator of the cell

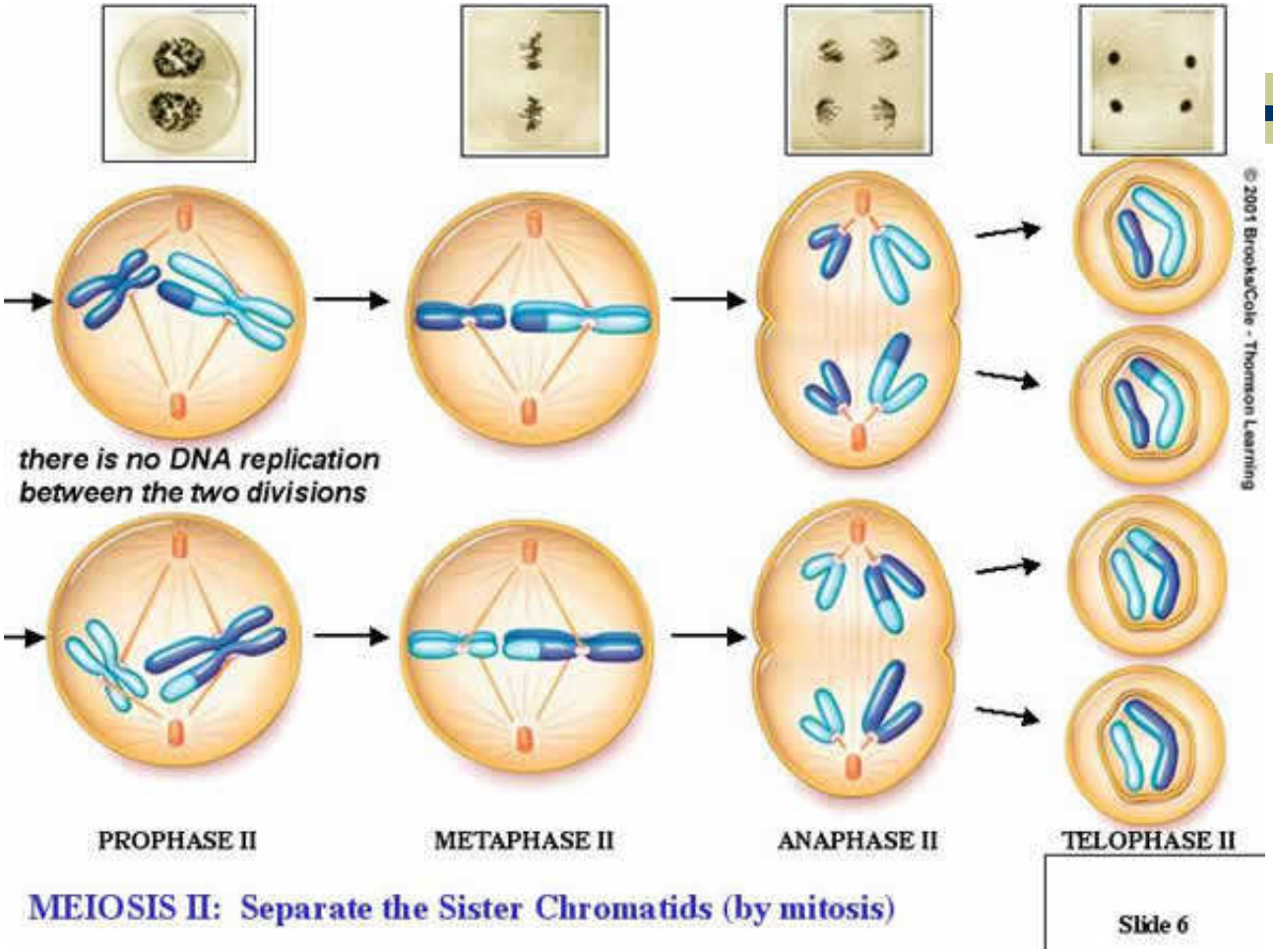
Anaphase I

- Homologous chromosomes move to opposite poles of the cell.

Telophase I & Cytokinesis

- Chromosomes gather at the poles of the cell.
- The cytoplasm divides.

Meiosis 2



MEIOSIS II: Separate the Sister Chromatids (by mitosis)

Prophase II

- A new spindle forms around the chromosomes

Metaphase II

- Chromosomes line up along equator

Anaphase II

- Centromeres divide
- Chromatids move toward opposite poles

Telophase II & cytokinesis

- Nuclear envelope forms at each pole
- Cytoplasm divides
- Four new haploid (1/2 the number of chromosomes) cells are formed.