

MEIOSIS

- Meiosis is a kind of cell division in which chromosome number is reduced by half.
- Meiosis produces haploid (n) cells with new combination.

Stages of meiosis

- **Meiosis steps:** meiosis I, cytokinesis (interkinesis), meiosis II, cytokinesis.
- Meiosis I, each of double set of chromosome is replicated to produce complete copy of every genes.

Prophase I

- Chromosomes come together in pairs, each pair called tetrad (complex of 4 chromatids)
- Chromatids of chromosomes **cross over** and exchange the genetic material.
- Nucleus membrane disappears
- Centrioles move to poles

Metaphase I

- Tetrads line up on the equatorial plane.
- Chromosomes attaches to the spindle fiber extending from poles (centrioles)

Anaphase I

- Homologous chromosomes separate to opposite poles

Telophase I

- Movement of homologous chromosomes continues
- Haploid set of chromosome forms
- Cytokinesis occurs simultaneously.

Meiosis II

- After meiosis I cells immediately begins second division, meiosis II

Prophase II

- Same as prophase I

Metaphase II

- Chromosomes stay at the equator

Anaphase II

- Chromatids moves to poles (Chromosomes split into 2 part)

Telophase II

- Nucleus appears
- Chromosomes starts uncoil (becomes invisible)
- Cytokinesis begins (Dividing of cytoplasm)

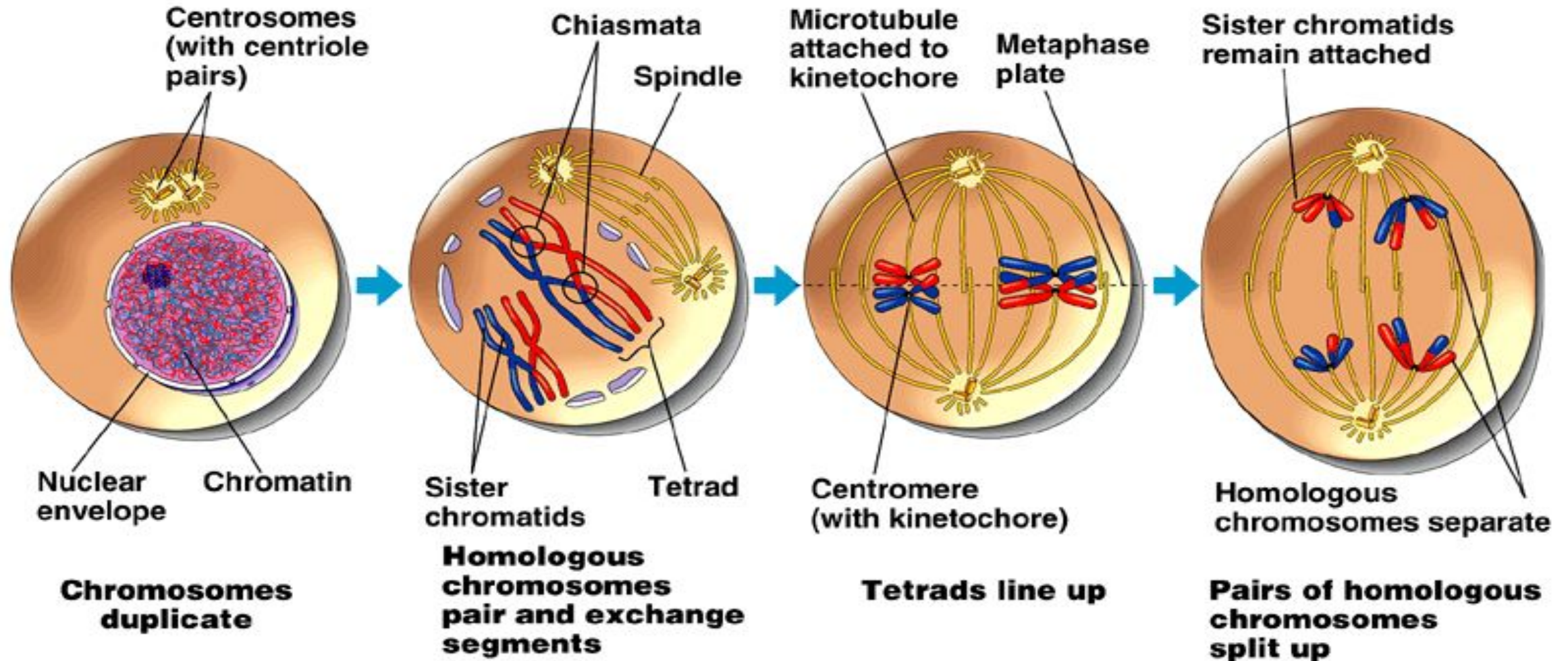
MEIOSIS I:
Separates homologous chromosomes

INTERPHASE

PROPHASE I

METAPHASE I

ANAPHASE I



MEIOSIS II:
Separates sister chromatids

**TELOPHASE I
AND CYTOKINESIS**

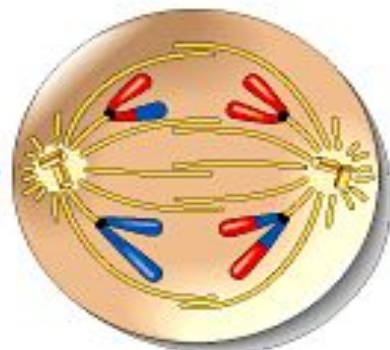
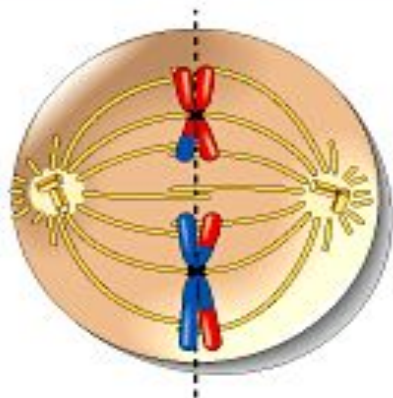
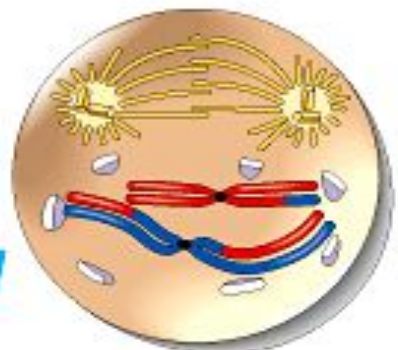
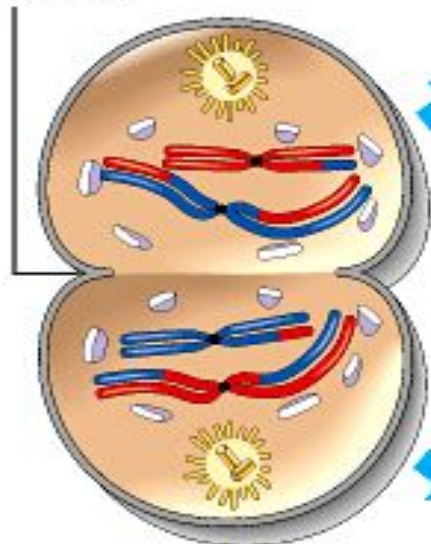
PROPHASE II

METAPHASE II

ANAPHASE II

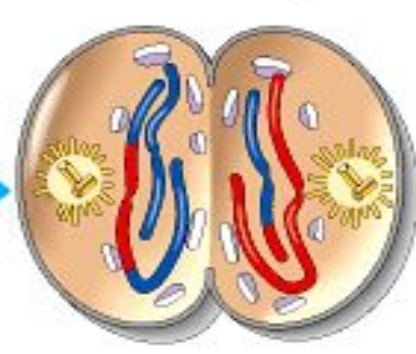
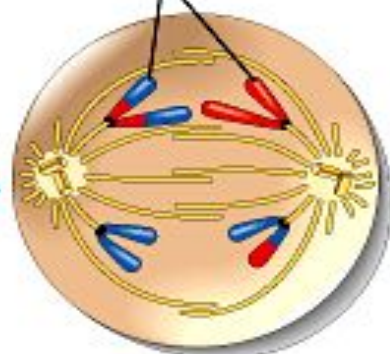
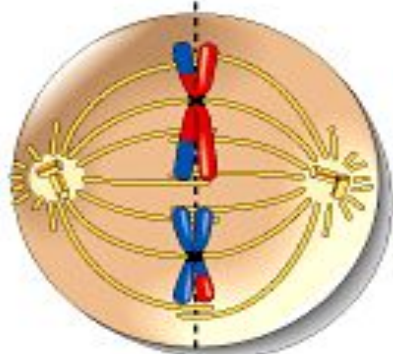
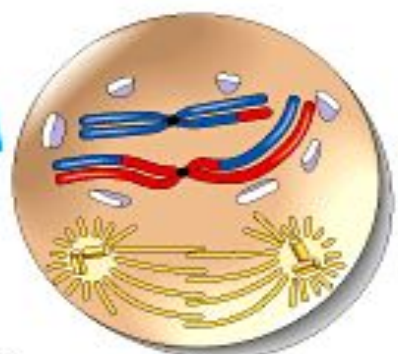
**TELOPHASE II
AND CYTOKINESIS**

**Cleavage
furrow**



**Sister chromatids
separate**

**Haploid daughter
cells forming**



**Two haploid cells
form; chromosomes
are still double**

During another round of cell division, the sister chromatids finally separate; four haploid daughter cells result, containing single chromosomes