OUTLINE 10

1. Meiosis and Sexual Reproduction

- **A. Overview of sexual reproduction**
  - **1. germ cells and somatic cells**
  - **2. homologous chromosomes**
- **B. Overview of Meiosis**
- **C. Stages of meiosis**
  - **1. meiosis 1**
  - **2. meiosis 2**
  - **3. Differences between meiosis and mitosis**
- **D. How sexual reproduction promotes genetic variation**
  - **1. fertilization**
  - **2. crossing-over**
  - **3. independent assortment**

Patterns of control of gene expression

Negative control - an active regulatory protein turns transcription OFF

Induction - signal molecule turns the operon on

Repression - signal molecule turns the operon off

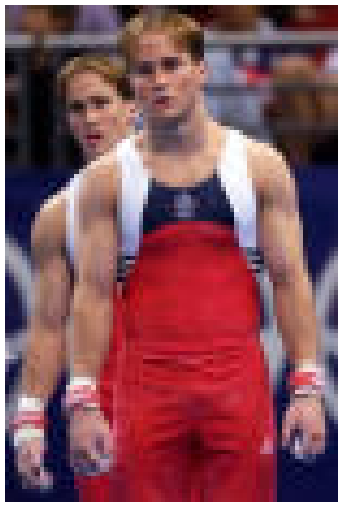
Positive control - an active regulatory protein enhances the rate of transcription

Induction - signal molecule makes the regulatory protein active

Repression - signal molecule makes the regulatory protein inactive

Patterns of Inheritance

twins



sisters

brothers

Father and son

Family

Mom and offspring

Human Female Karyotype

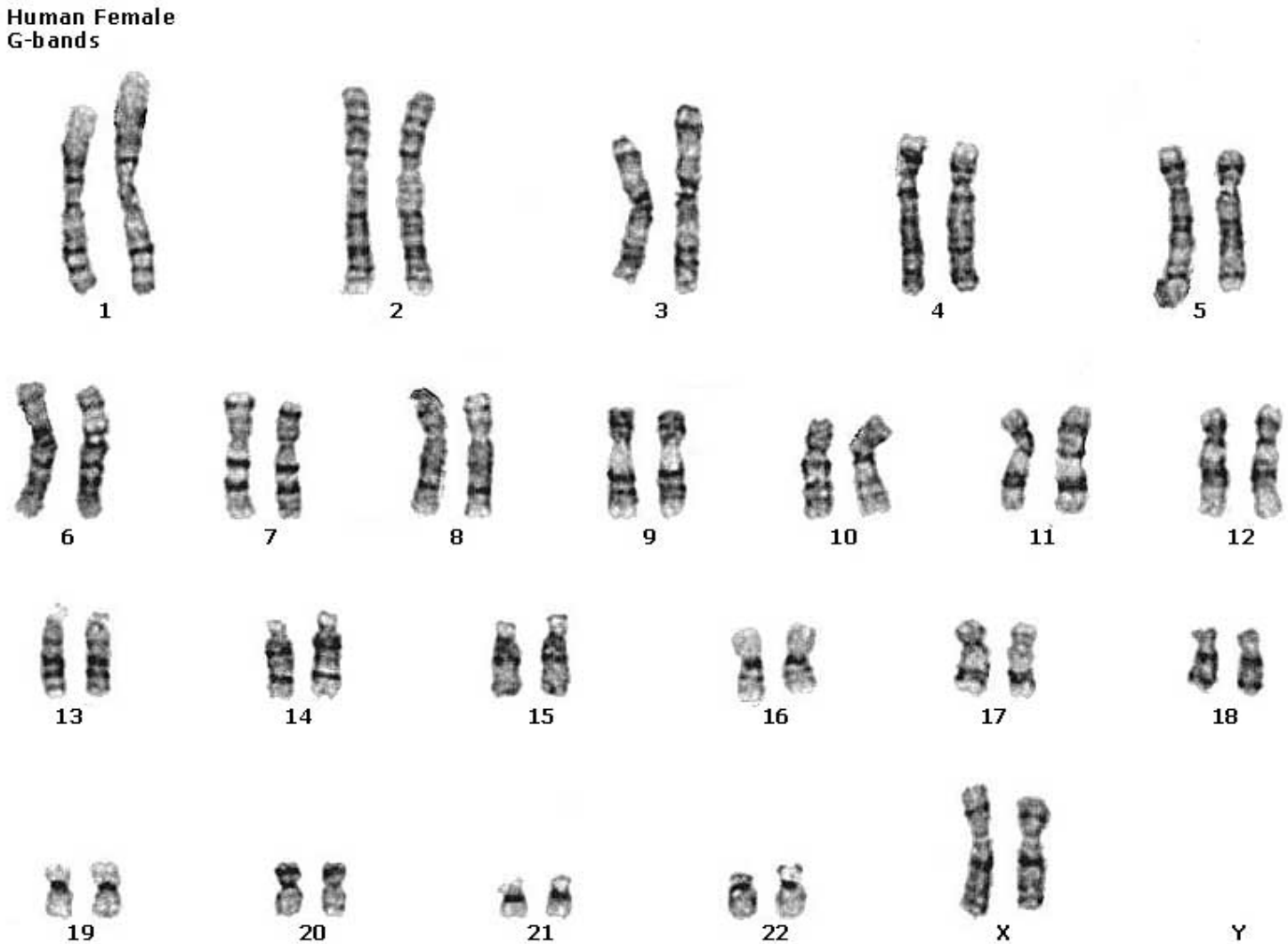


Fig. 13.7

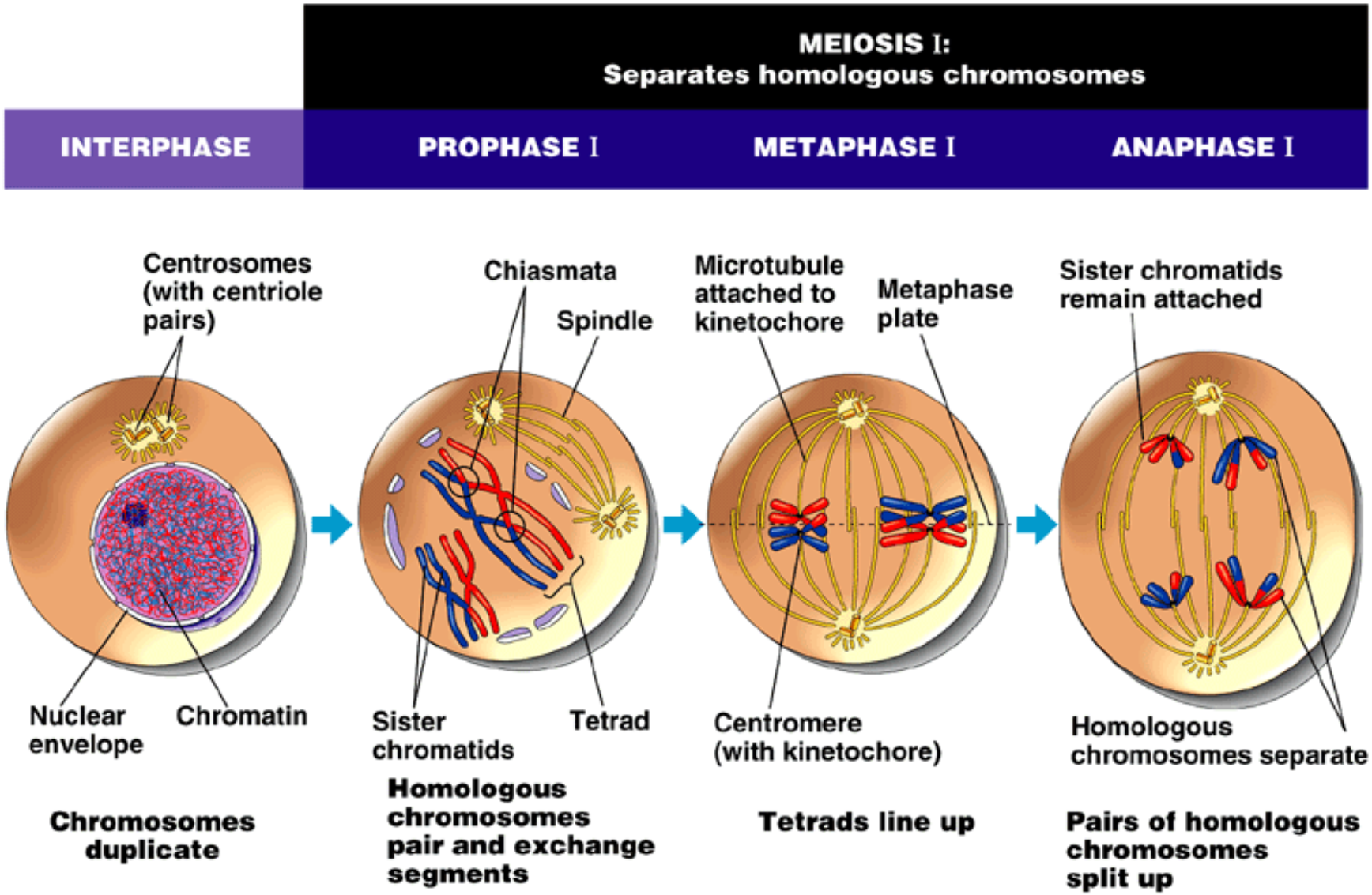


Fig. 13.7

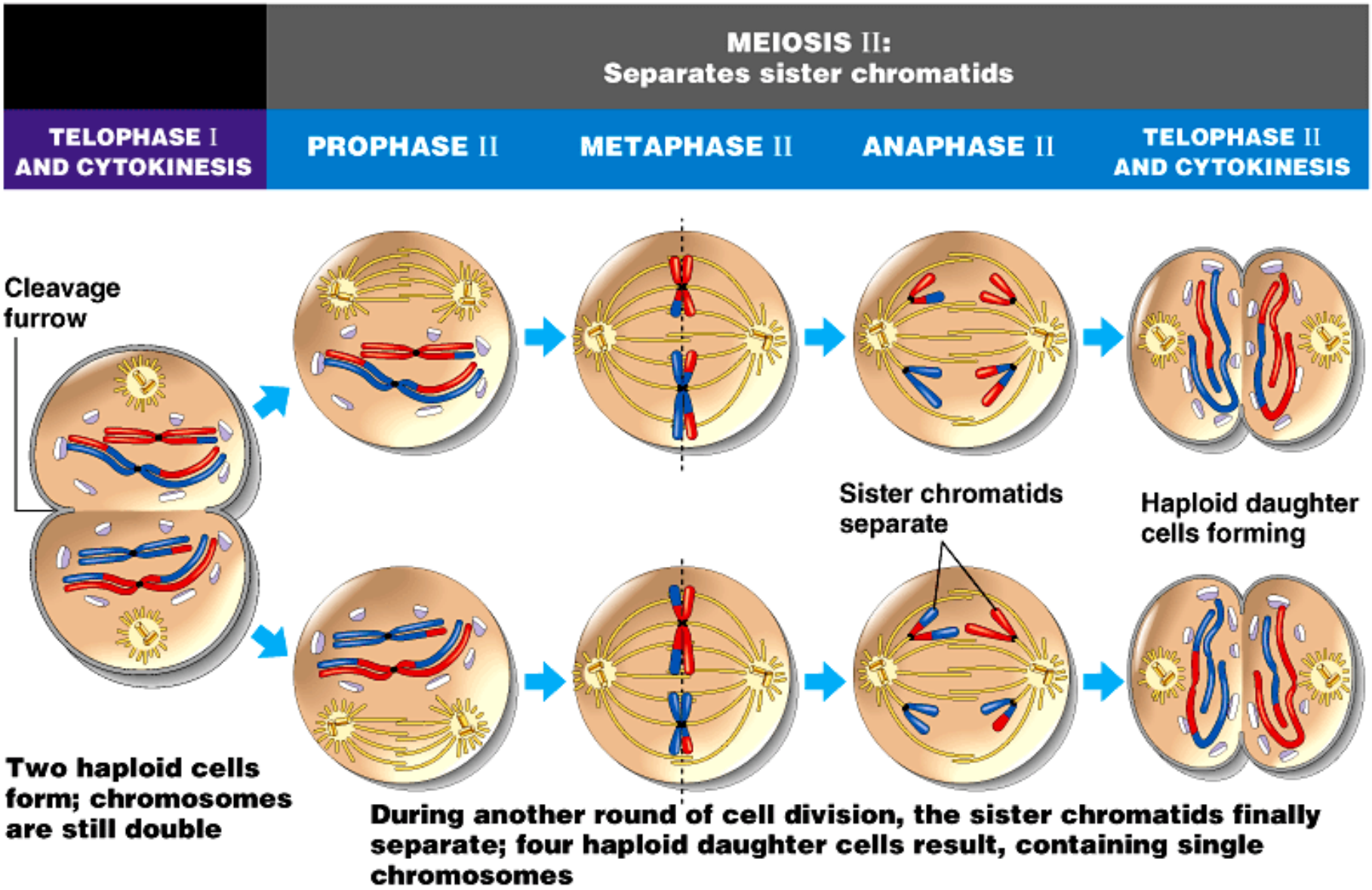


Fig. 13.8 Differences between mitosis and meiosis

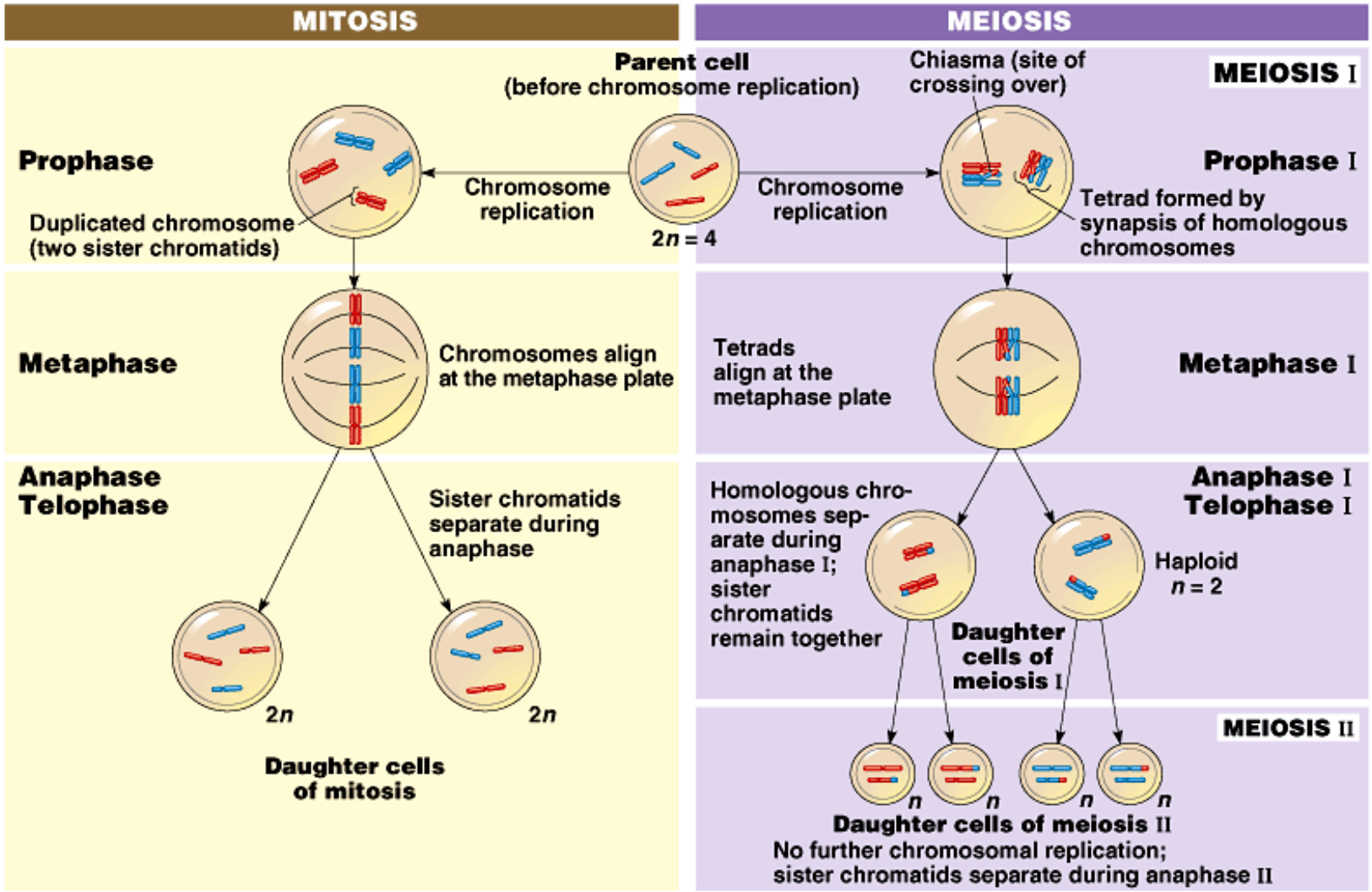


Fig. 13.10 Crossing over

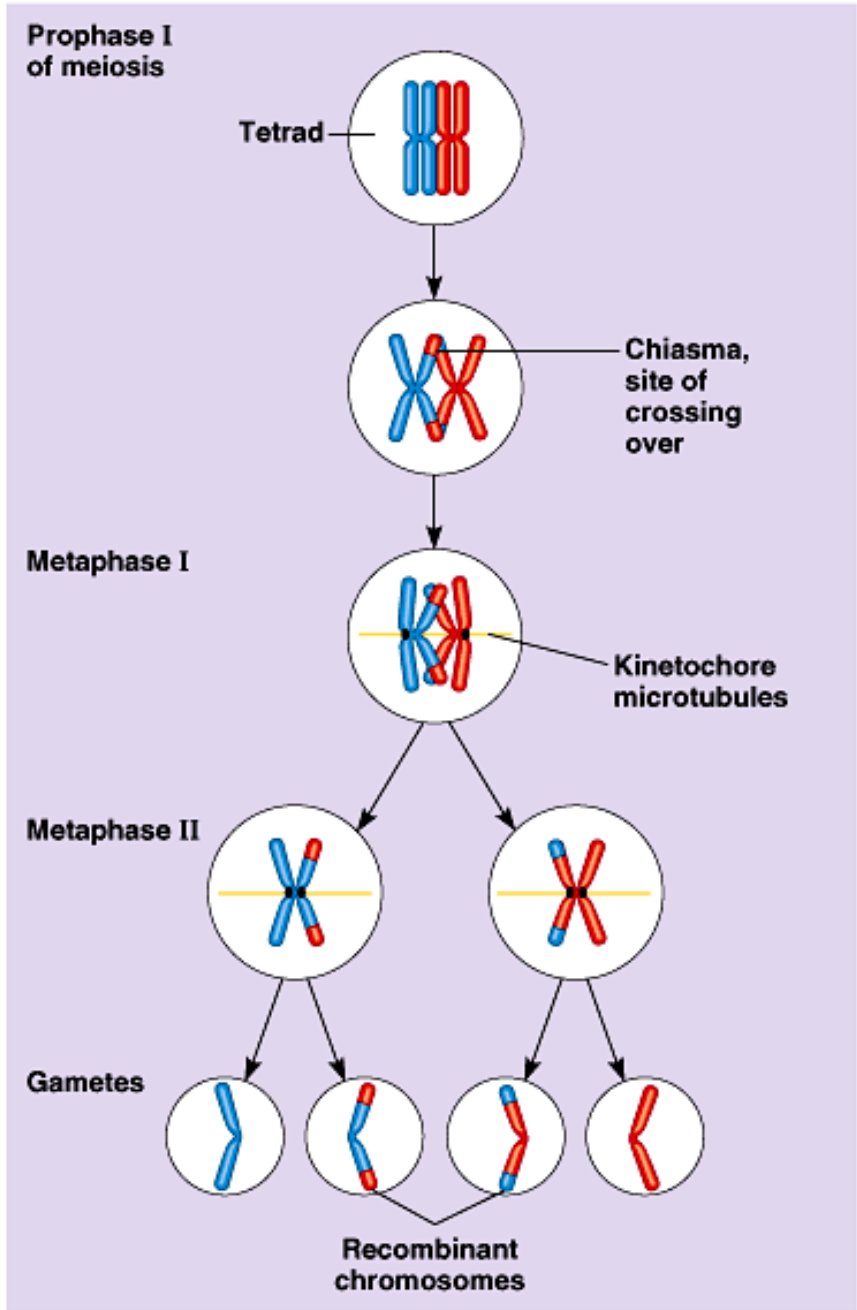


Fig. 13.9 Independent Assortment