

CHAPTER 12
THE CELL CYCLE

- HYPOTHETICAL - 14 HOURS
- 1. INTERPHASE (13 HRS) : **G₁ PHASE** (1 HR); ASSEMBLING PROTEINS AND SYNTHESIS OF DNA. **S PHASE** (9 HRS), REPLICATION OF DNA, **G₂ PHASE** (3 HRS), MAKING MOLECULAR ADJUSTMENTS

Figure 12.3 Chromosome duplication and distribution during mitosis

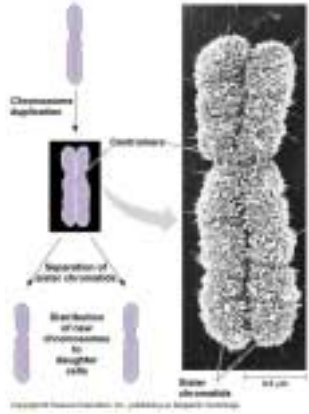
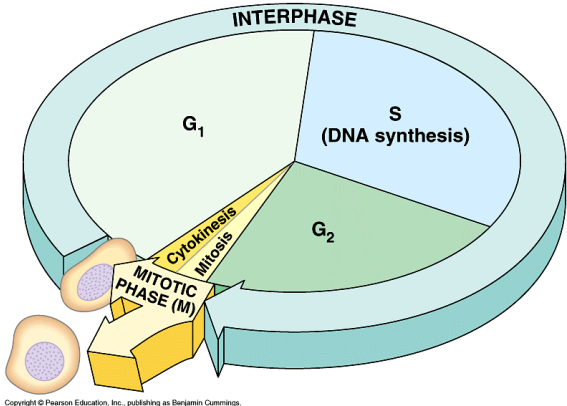


Figure 12.4 The cell cycle



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THE CELL CYCLE -CONT'D

- **2. MITOSIS: CELL DIVISION (55 MIN)**
- **PROPHASE, METAPHASE, ANAPHASE, AND TELOPHASE**
- **3. CYTOKINESIS: (5 MIN)**
- **DIVISION OF THE CYTOPLASM, OR THE CELL SPLITS.**

Figure 12.5 The stages of mitotic cell division in an animal cell: G₂ phase; prophase; prometaphase

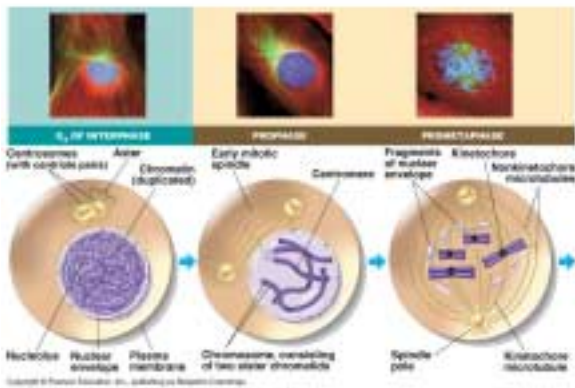


Figure 12.5 The stages of mitotic cell division in an animal cell: metaphase; anaphase; telophase and cytokinesis.

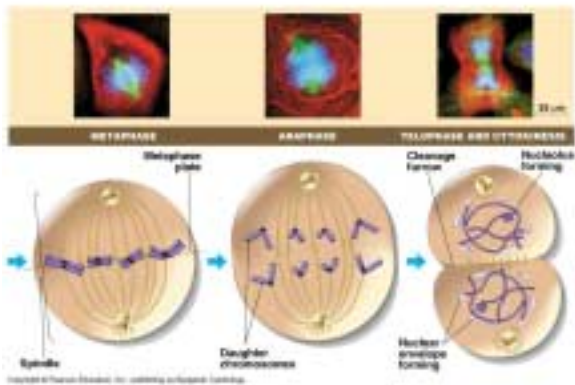


Figure 12.5x Mitosis

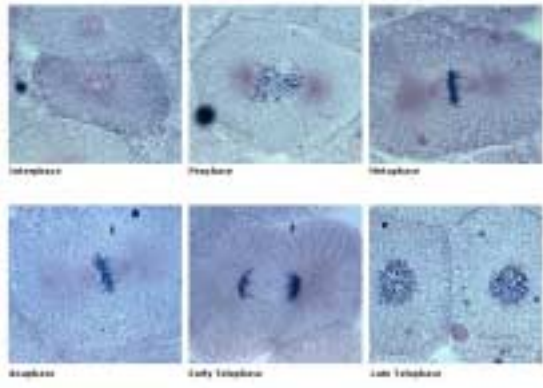
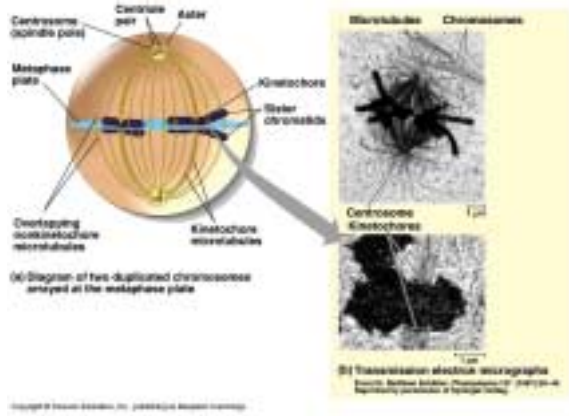


Figure 12.6 The mitotic spindle at metaphase



CELL AND LIFE CYCLES

- CELL DIVISION/MITOSIS IS IMPORTANT.
- CHROMOSOMES REPLICATED AND DISTRIBUTED TO NEW CELLS
- NUCLEAR DIVIDES, **KARYOKINESIS**
- CYTOPLASM DIVIDES, **CYTOKINESIS**
- **CELL CYCLE**= EVENTS BETWEEN &
- INCLUDING CELL DIVISION.

Figure 12.7 Testing a hypothesis for chromosome migration during anaphase

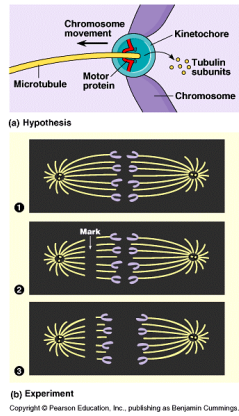


Figure 12.8 Cytokinesis in animal and plant cells

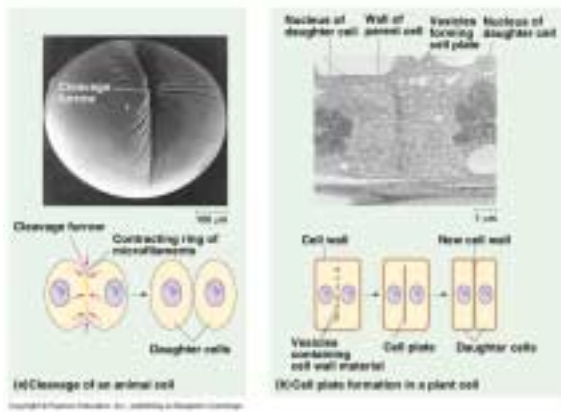


Figure 12.9 Mitosis in a plant cell