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
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.

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

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Figure 12.6 The stages of mitotic cell division in an animal cell: metaphase; anaphase; telophase and cytokinesis.
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