UNIT 6: CELL DIVISION

- division of the nucleus to produce 2 new daughter cells that are identical to the parent cell
- **CLONING**
- **PHASES INCLUDE:** INTERPHASE, MITOSIS (prophase, metaphase, anaphase, telophase), CYTOKINESIS

### 1. INTERPHASE
- growth stage in preparation for mitosis & cytokinesis
  - G1
    - cell increases in size
    - proteins & new organelles synthesized (copies or organelles are made)
  - S
    - DNA (chromatin) copied
  - G2
    - DNA is proofread & mistakes are corrected

### 2. MITOSIS

**PROPHASE** – nuclear membrane dismantles around chromatid pairs
- chromatin condense into chromatid pairs
- centrioles (centrosomes) start to move to opposite sides of the cell
- spindle fibers form

**METAPHASE** – chromatid pairs line up in the **Middle**
- centrioles now on opposite sides of the cell
- spindle fibers attach to centromere on both sides of each chromatid pair

**ANAPHASE** – chromatid pairs split up & move to opposite sides of the cell
- chromatid pairs split & become individual chromosomes
- spindle fibers move individual chromosomes towards opposite sides of the cell

**TELOPHASE** – nuclear membrane reassembles around individual chromosomes
- individual chromosomes now on opposite sides of the cell
- individual chromosomes stretch out & become less visible (resembling chromatin)
- nuclear membrane reassembles around each group of individual chromosomes

### 3. CYTOKINESIS
- cytoplasm pinches around individual chromosomes (chromatin) & new organelles
- forms 2 new cells that are identical to the parent cell (clones)