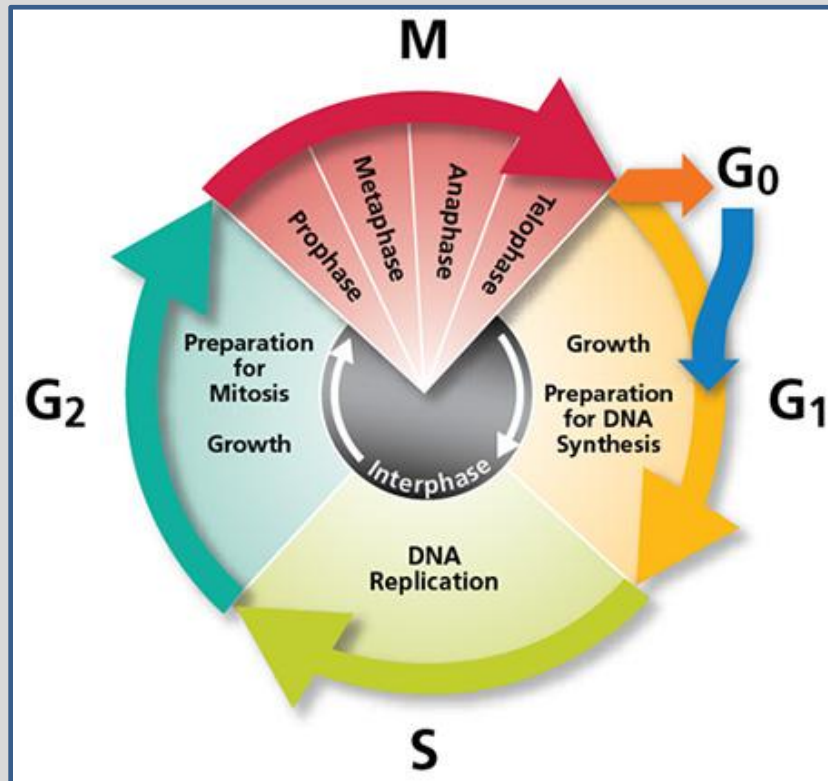


REVIEW: Mitosis

Cell Cycle

- Regular sequence of GROWTH & DIVISION of cells



Why do CELLS DIVIDE?

- ✓ to REPAIR lost or damaged tissues
- ✓ to GROW
- ✓ during EMBRYONIC DEVELOPMENT

REPAIR



GROWTH



**EMBRYONIC
DEVELOPMENT**



The Phases of the Cell Cycle

I Picked Many Apples Today!”

↓ ↓ ↓ ↓ ↓

Interphase ***Prophase*** ***Metaphase*** ***Anaphase*** ***Telophase***



1. Interphase

- Cells grow
- DNA is copied
- DNA looks is uncoiled (“spaghetti”)
- LONGEST part of the cycle

2. Prophase

- Chromosomes FORM and **PAIR-UP**

3. Metaphase

- Chromosomes line up in the **MIDDLE**
- Spindles hook chromosomes at the centromere

4. Anaphase

- Spindles pull chromosomes **APART**
- They move **AWAY from one another**

5. Telophase

- Cell begins to split
- **TWO new nuclear envelopes** form

Replication → DNA makes an EXACT COPY

★ Diploid = NORMAL number of CHROMOSOMES (46)

★ Haploid/Monoploid = HALF the NORMAL number of CHROMOSOMES (23)

Chromosomes

- Made of DNA
- Formed during PROPHASE

Chromatids

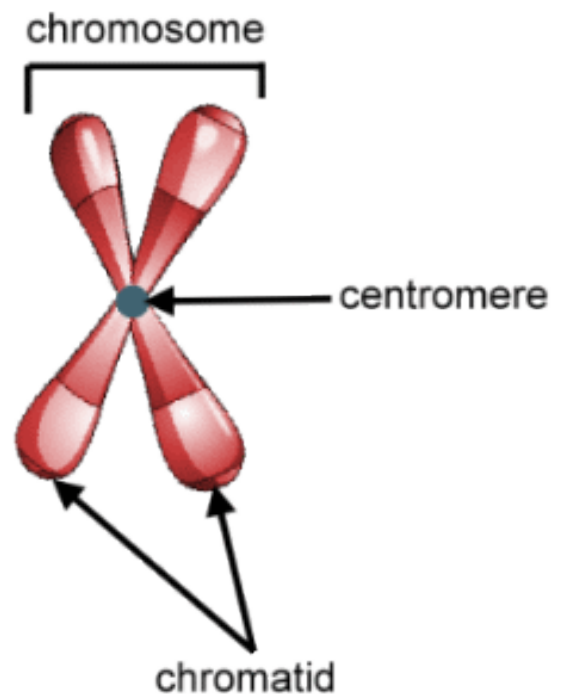
- ✓ each ROD of COPIED CHROMOSOME

Centromere

- ✓ HOLDS chromatids together

Sister Chromatids

- ✓ PAIRED UP duplicated CHROMOSOMES



Mitosis

- When cell's nucleus divides
- ONE COPY of DNA is given to each DAUGHTER CELL
- CREATES 2 IDENTICAL CELLS

There are
2 CELLS at the END!

