

# Cell Division/Cell cycle

Mitosis

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# Definition of cell division

Cell division may be defined as the process by which a parent cell divides into two or more daughter cells

# Cell cycle

Interphase and  
divisional process  
= cell cycle

## Types of cell division

- 1.Amitosis
- 2.Mitosis
- 3.meiosis

## Definition of Mitosis

“Mitosis is that step in the cell cycle where the newly formed DNA is separated and two new cells are formed with the same number and kind of chromosomes as the parent nucleus.

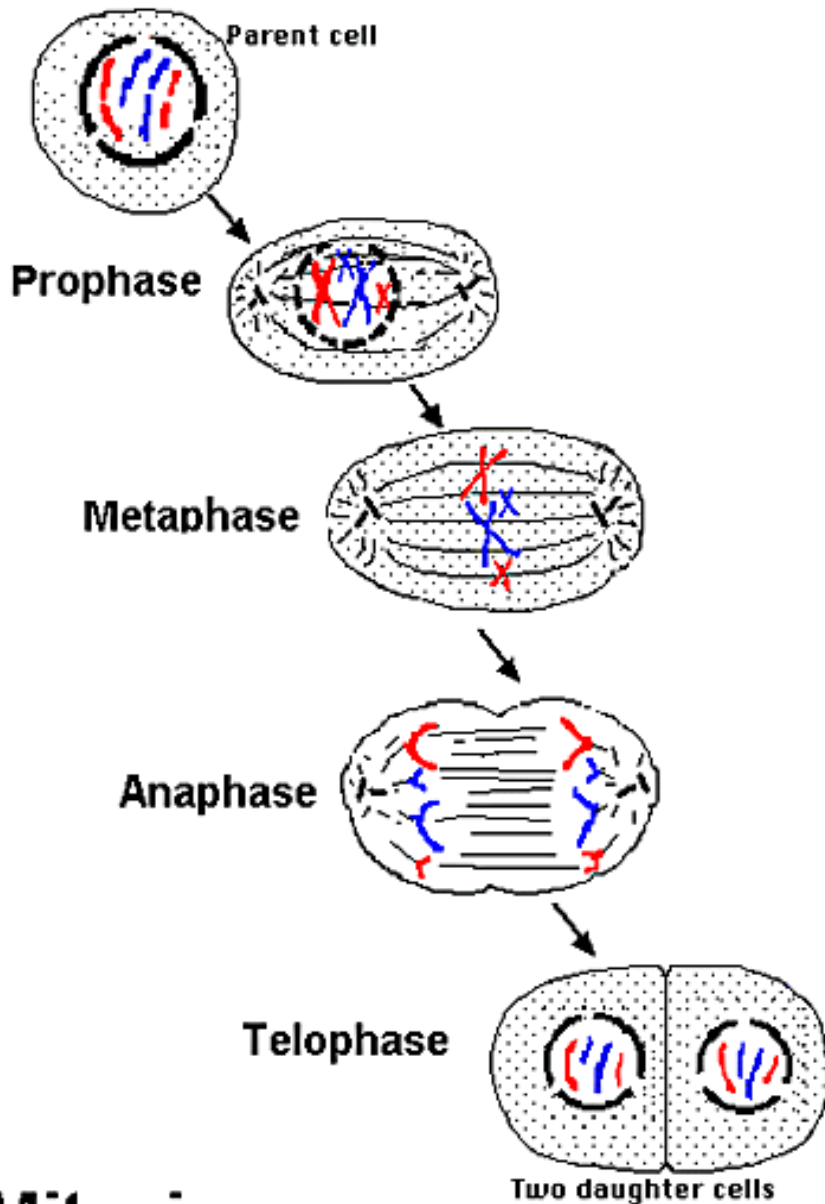
### **Mitosis cell division**

- Karyokinesis
- cytokinesis

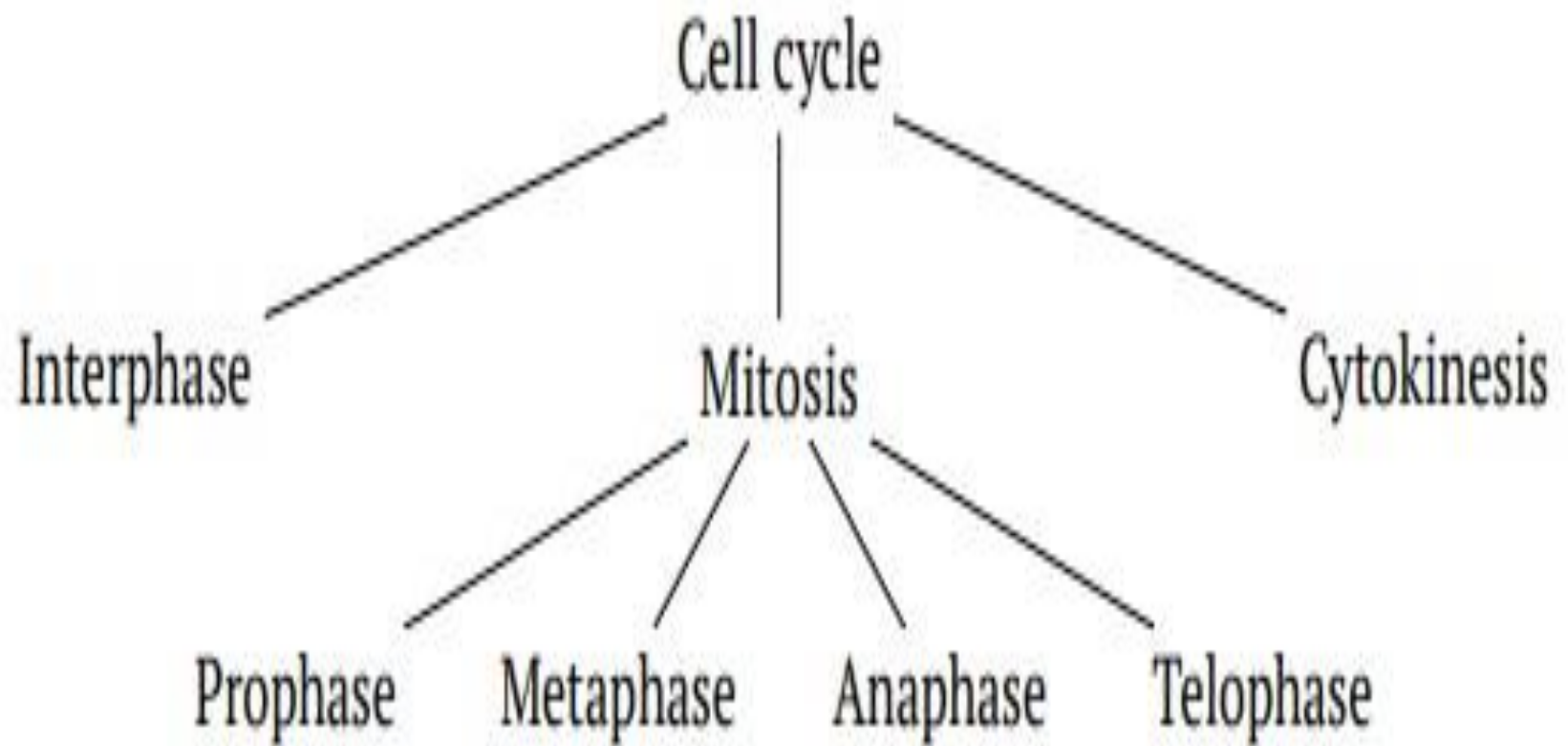
# Mitosis

The Basic Phases  
of a Cell's Life:

- Interphase
- Prophase
- Metaphase
- Anaphase
- Telophase
- Cytokinesis



**Mitosis**



# Interphase

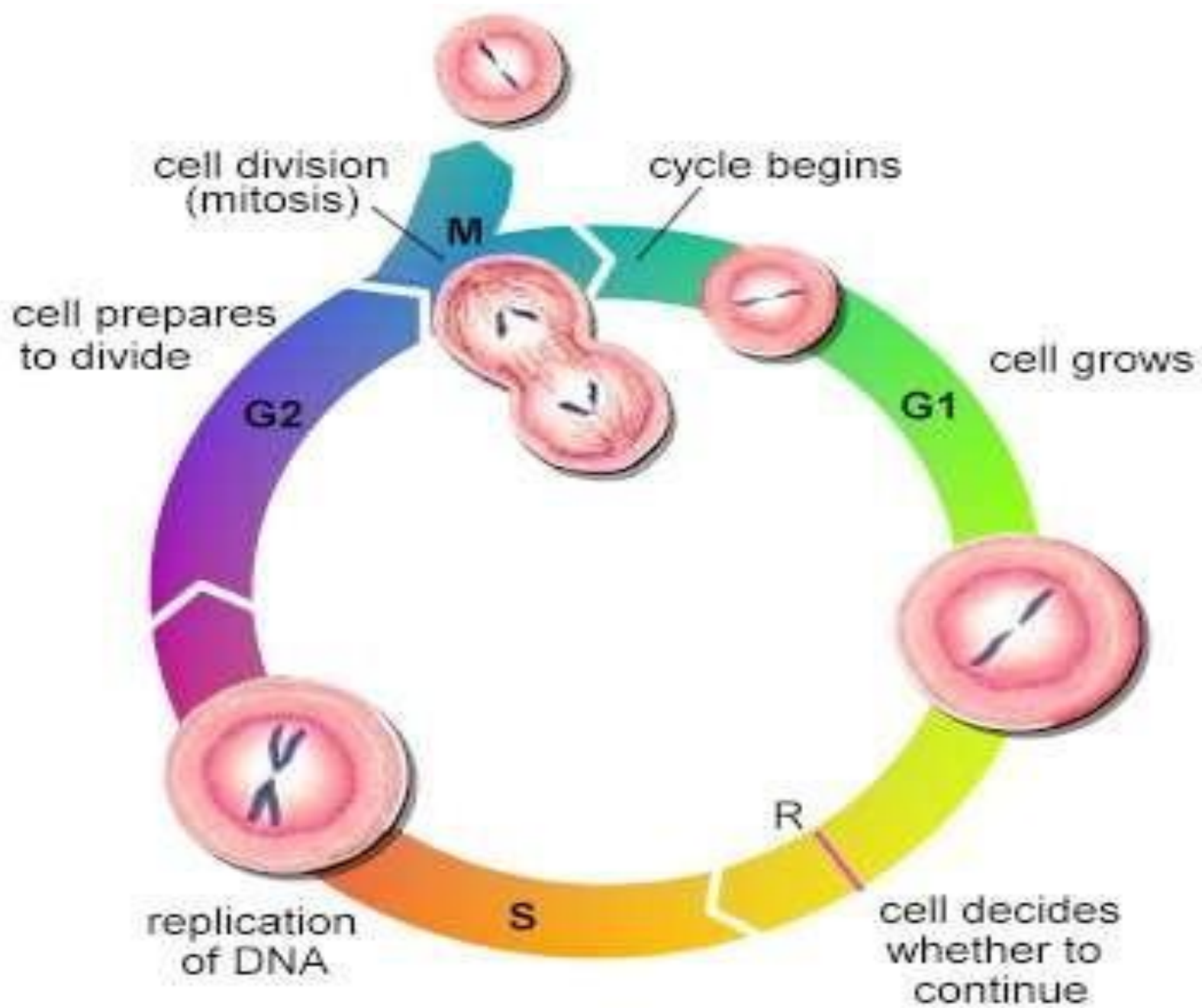
The longest stage of a Cell's life

The time spent between divisions

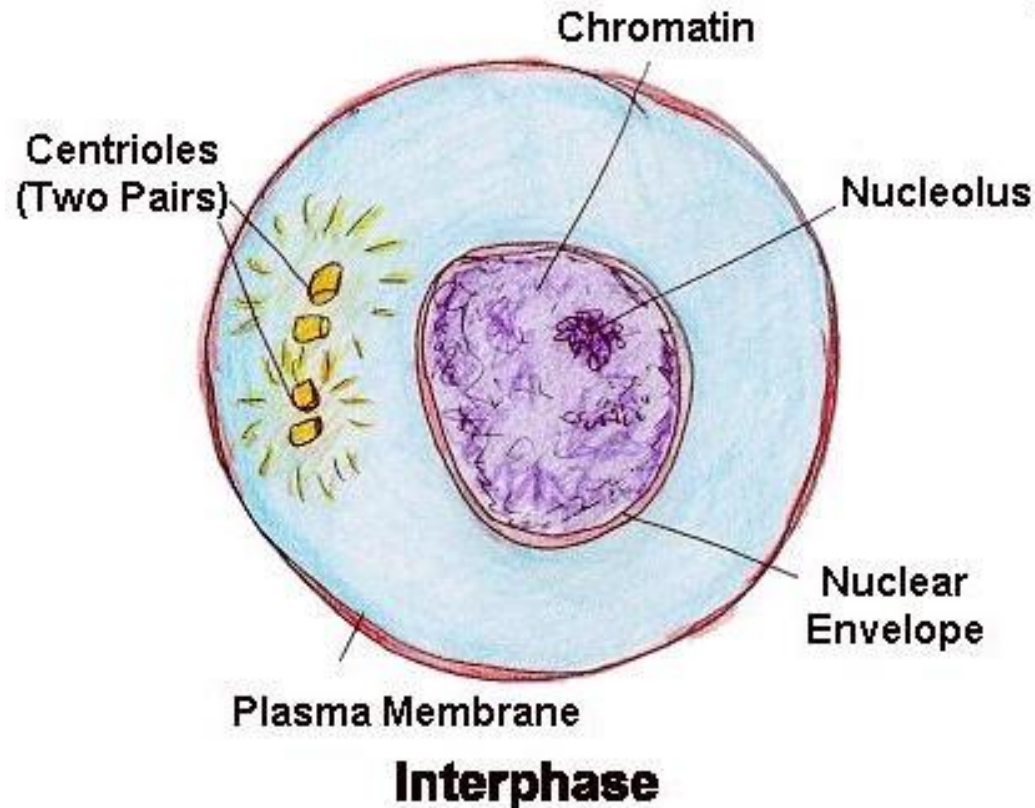
Produces all materials required for growth

Preparation for division





**Interphase** – The Cell spends the majority of its life here, growing and functioning. During the S Phase of the Cell Cycle, the DNA replicates, in anticipation of Mitosis

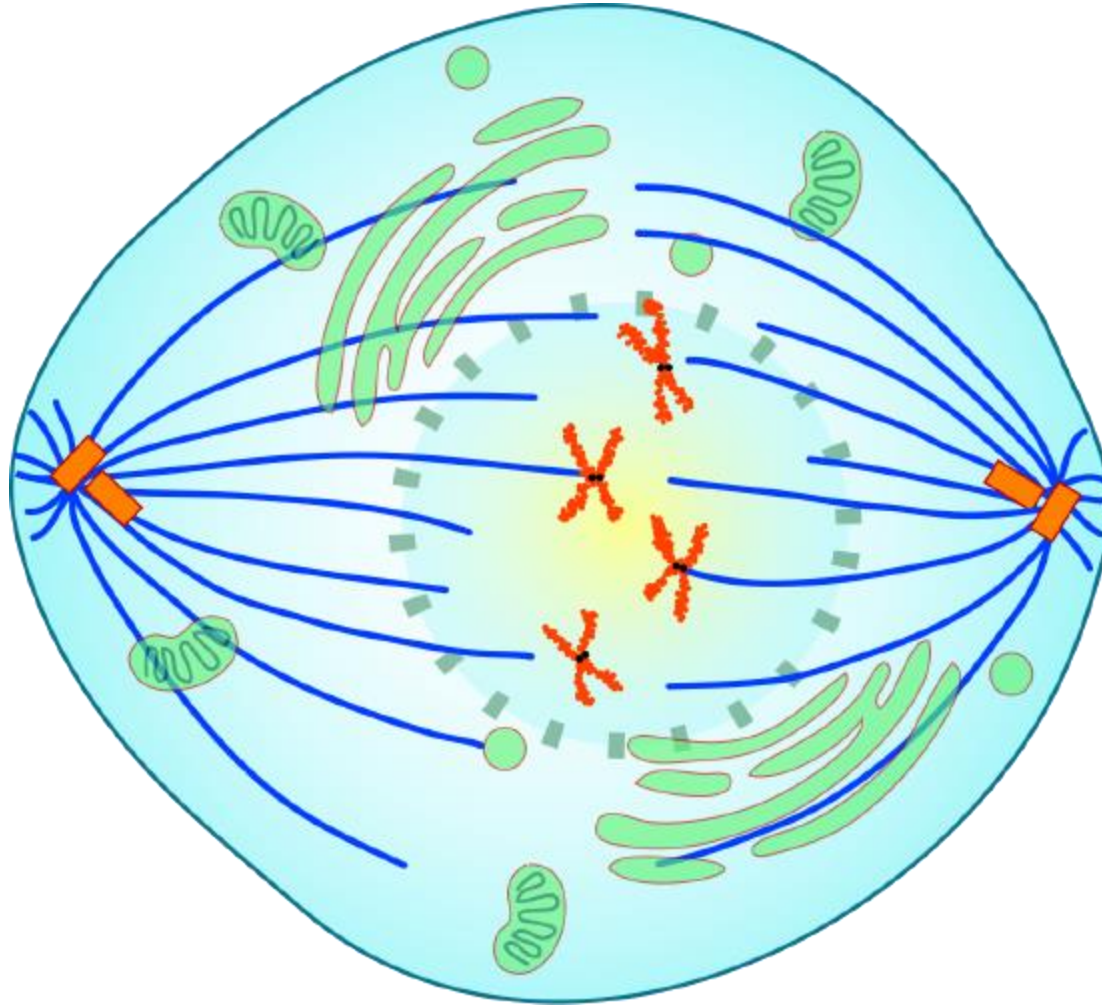


# Prophase

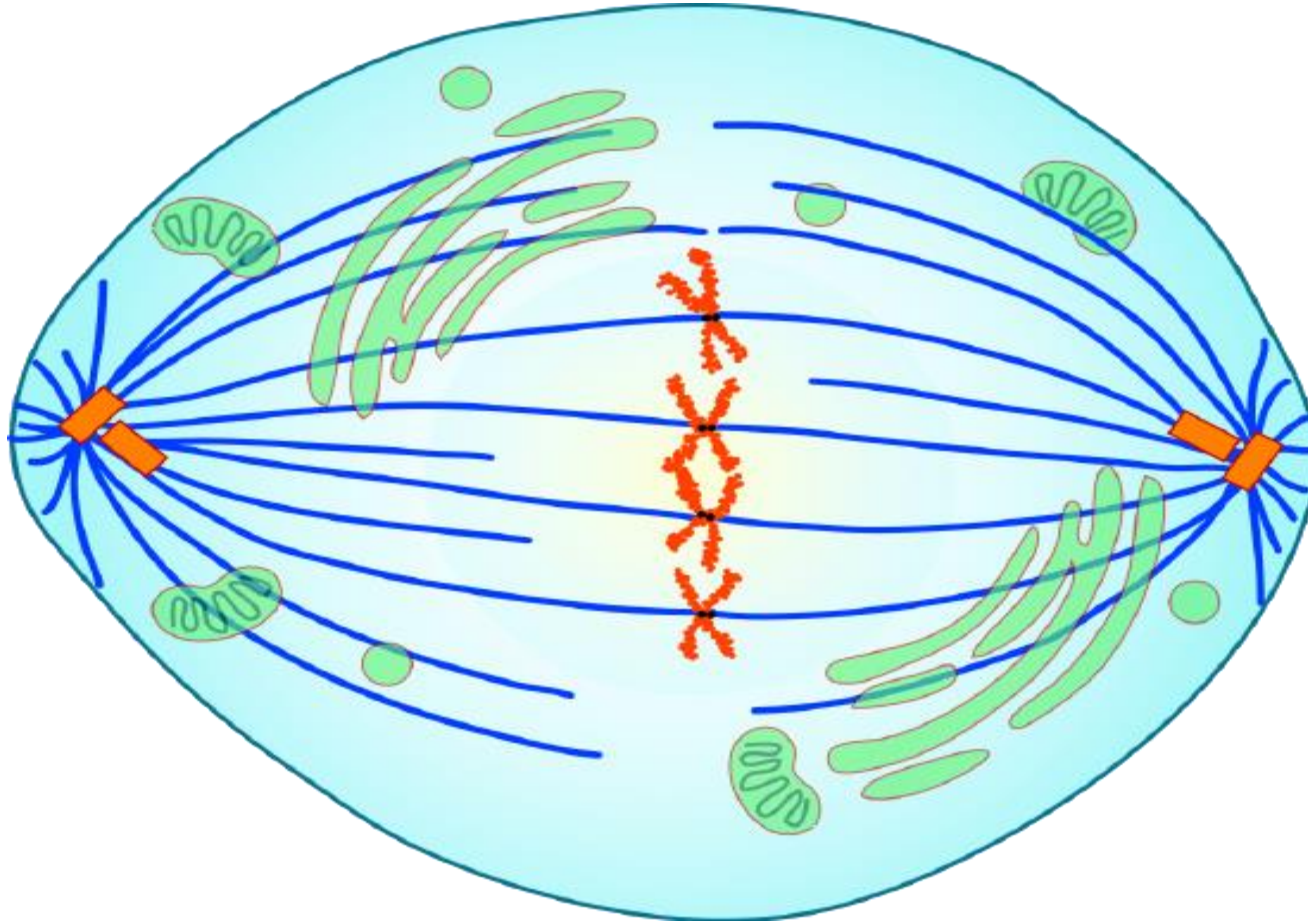
The Cell begins the division process

1. The nucleolus disappears,
2. The nuclear membrane breaks apart
3. The chromosomes become visible
4. The spindle apparatus forms and attaches to the centromeres of the chromosomes

# Prophase



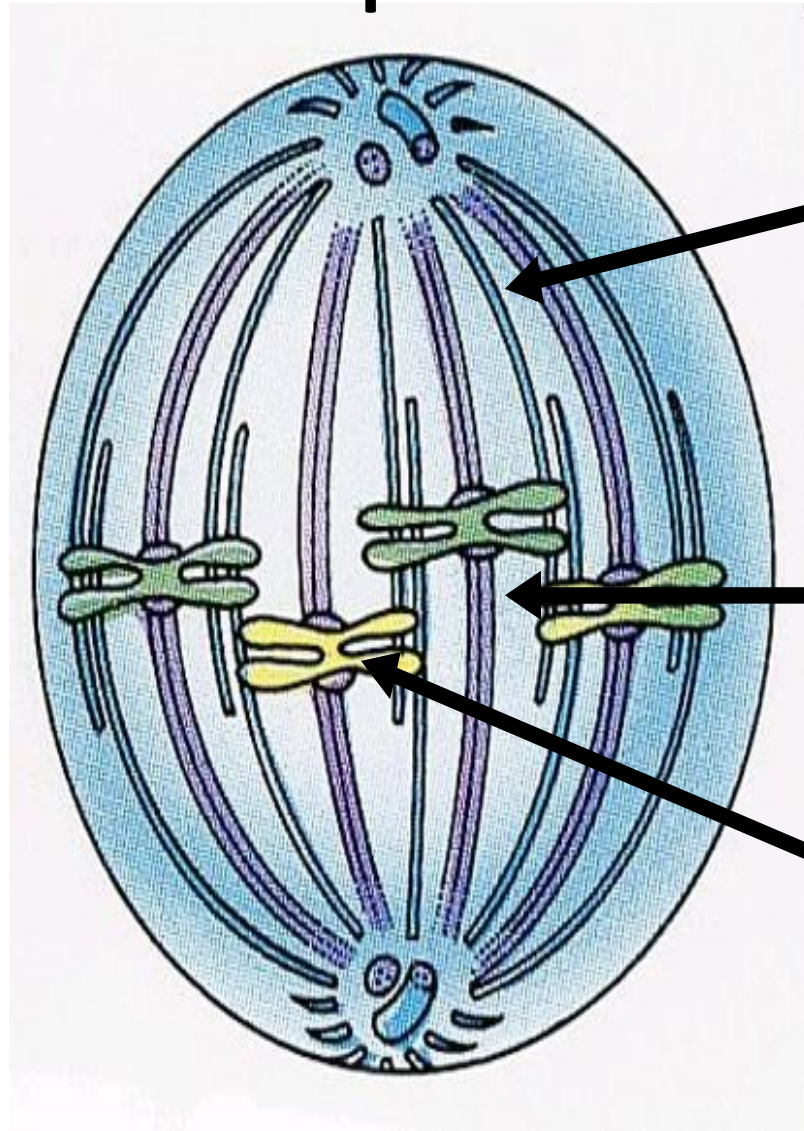
# metaphase



# Metaphase

- spindle fibers fully attach to the Centromere of each pair of sister chromatids. the sister chromatids line up at the equator, or center, of the cell.
- The spindle fibers ensure that sister chromatids will separate and go to different daughter cells when the cell divides.

# Metaphase

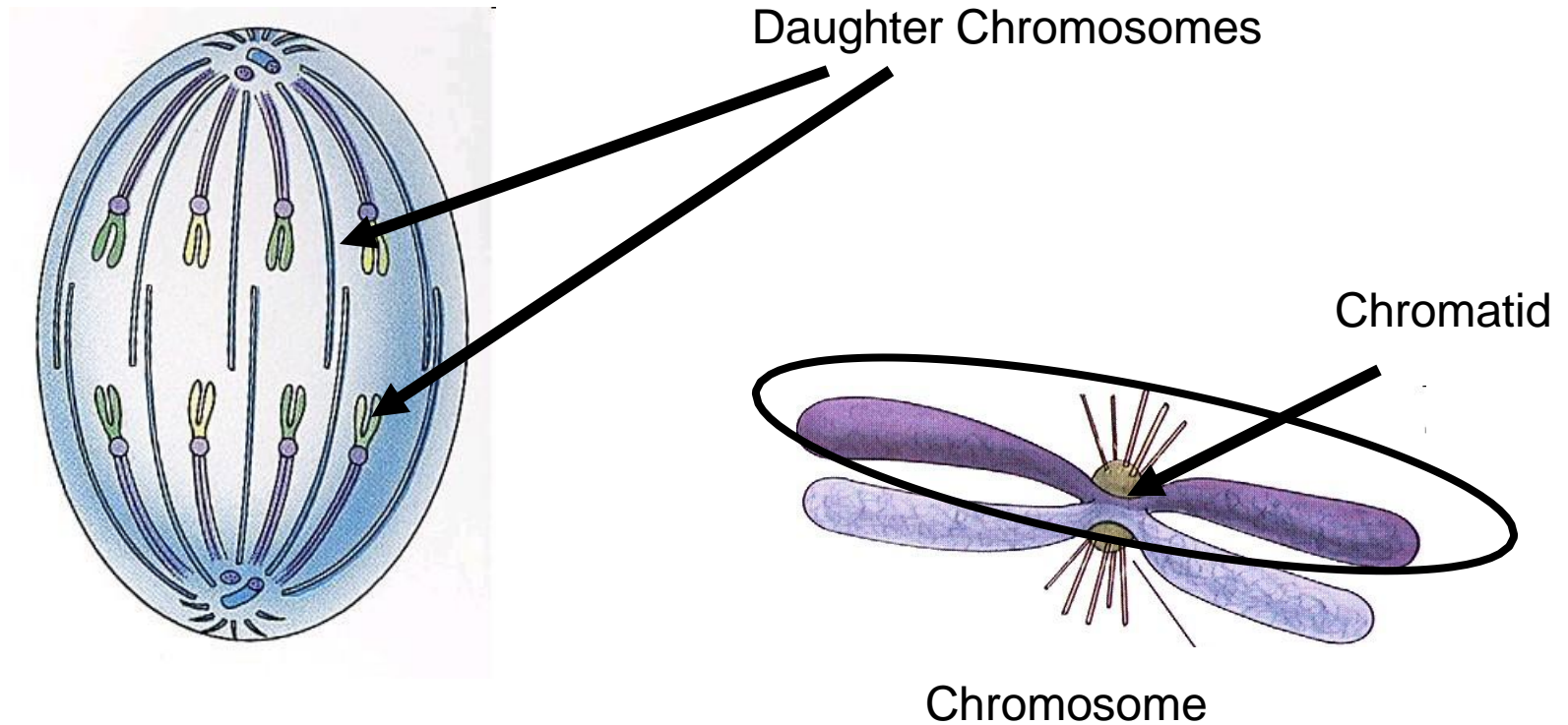


Spindle Fibers

Equator, or  
Metaphase Plate

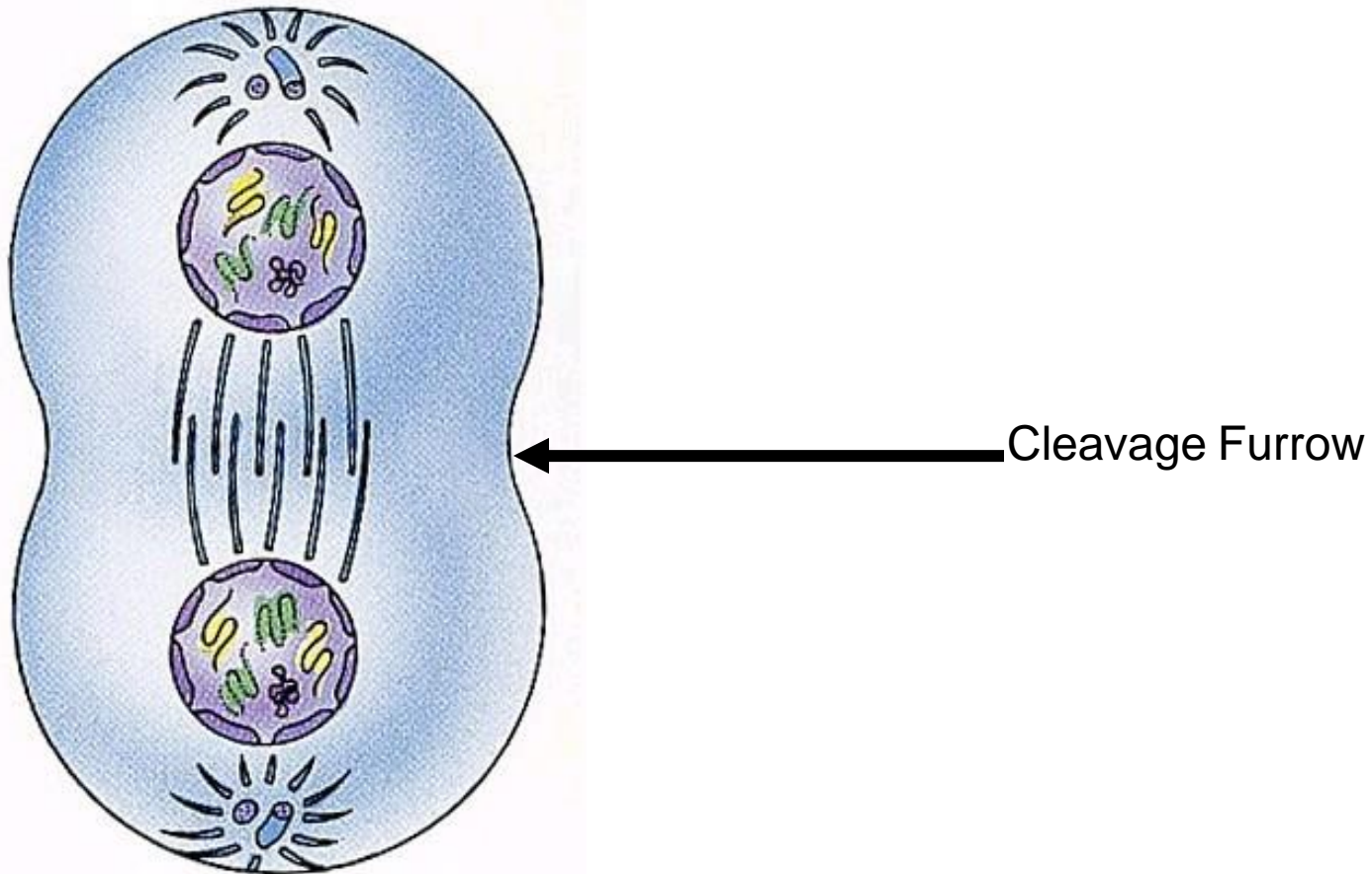
Chromosomes

**In Anaphase** the Chromatids that make up each Chromosome move apart and travel to opposite ends of cellular spindle

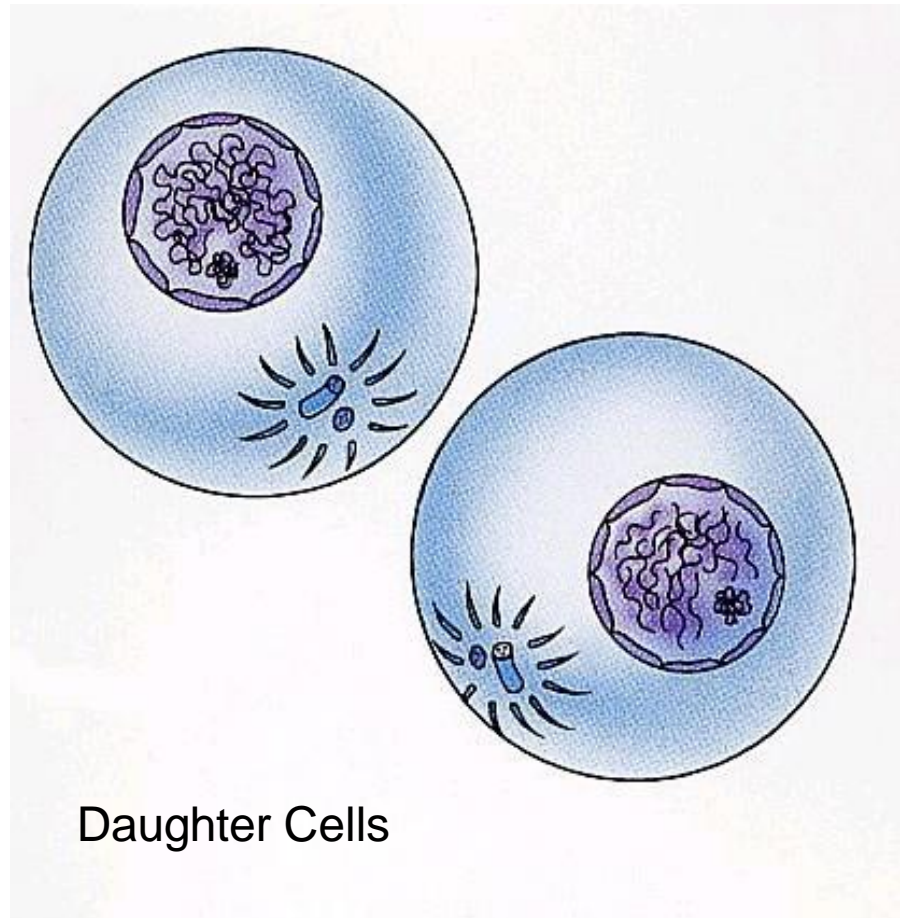




In Telophase an envelope surrounds each set of Chromatids to form new Nucleus and the Cytoplasm starts to divide



Cytokinesis takes place when the Cytoplasm divides and two cells with identical genetic material are formed



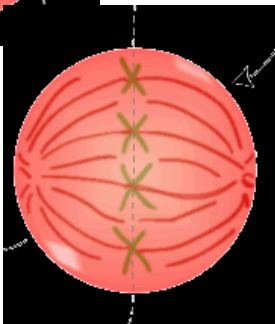
Interphase



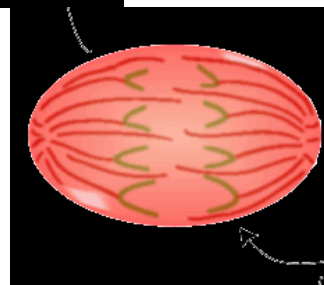
Prophase



Metaphase



Anaphase



Telophase

