

The cell cycle



G₁

S

G₂

Interphase

M-Phase (mitosis)

1. Prophase
2. Metaphase
3. Anaphase
4. Telophase

Cytokinesis

G₀ - The cell grows & functions but does NOT Divide
Can re-enter if given signal

G₁ - Gap 1

flow
+
h

The cell grows & performs normal cell functions. Prepares for DNA replication

Looooong

G₁

S

G₂

Interphase

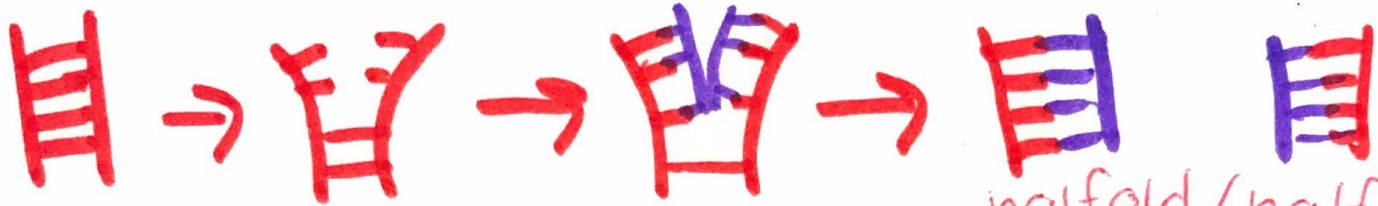
M-phase (mitosis)

1. Prophase
2. Metaphase
3. Anaphase
4. Telophase

Cytokinesis

Synthesis

- DNA is replicated
- proof read
- ends w/ 2X DNA



half old / half new
Semi-conservative

S

G₂

phase

M-phase (mitosis)

1. Prophase
2. Metaphase
3. Anap hase
4. Telo phase

Cytokinesis

G₂ - Gap 2

g
r
o
w
+
h

The cell continues to grow & function

- Cell prepares for mitosis

must pass checkpoint before mitosis - big enough?
- DNA correct?

G₂

S₂

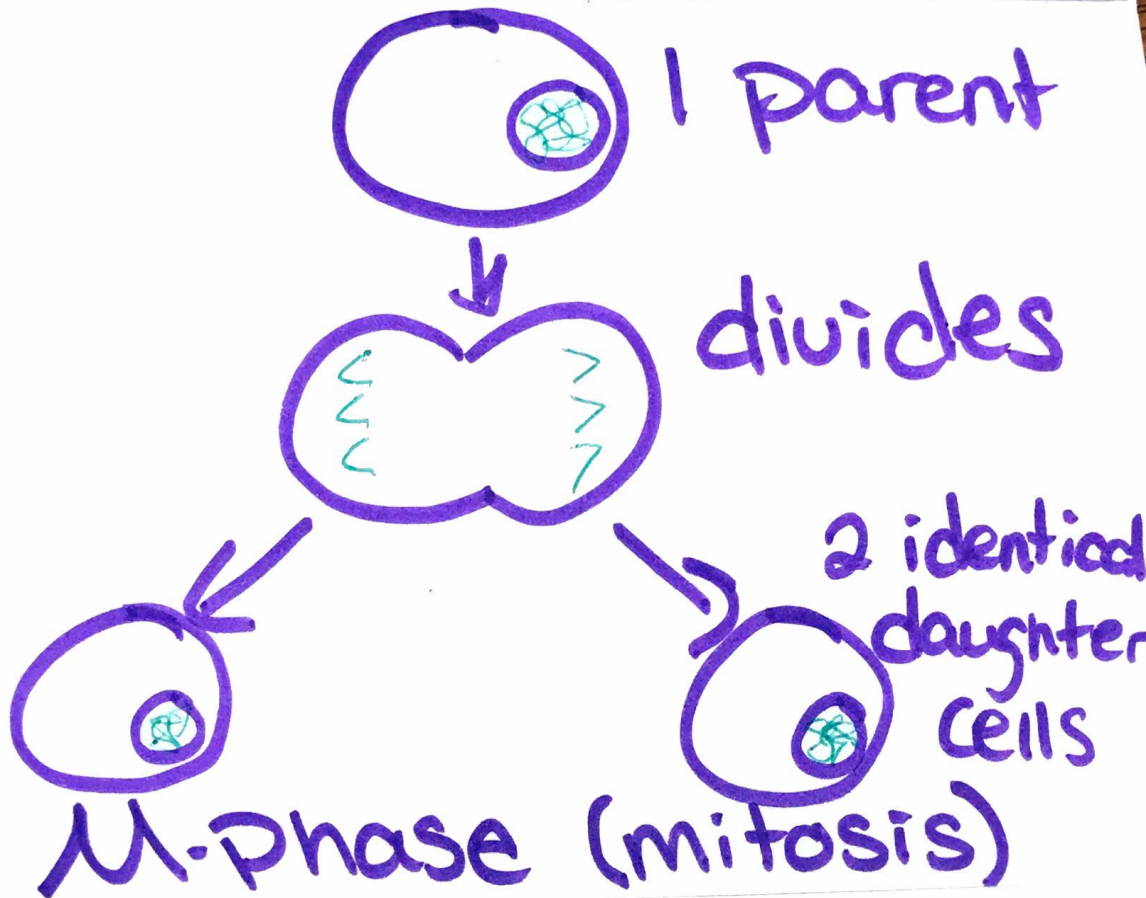
M-phase (mitosis)

1. Prophase
2. Metaphase
3. Anaphase
4. Telophase

Cytokinesis

The process of Cell division
where 1 parent cell divides into
2 identical daughter cells
- triggered by need to grow/heal
4 steps

Prophase
Metaphase
Anaphase
Telophase



1. Prophase
2. Metaphase
3. Anaphase
4. Telophase

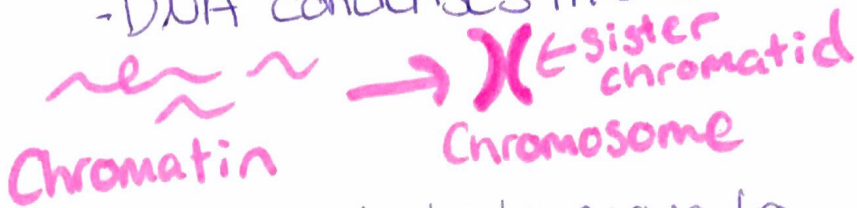
Cytokinesis

Pro phase

- nuclear membrane starts to disappear

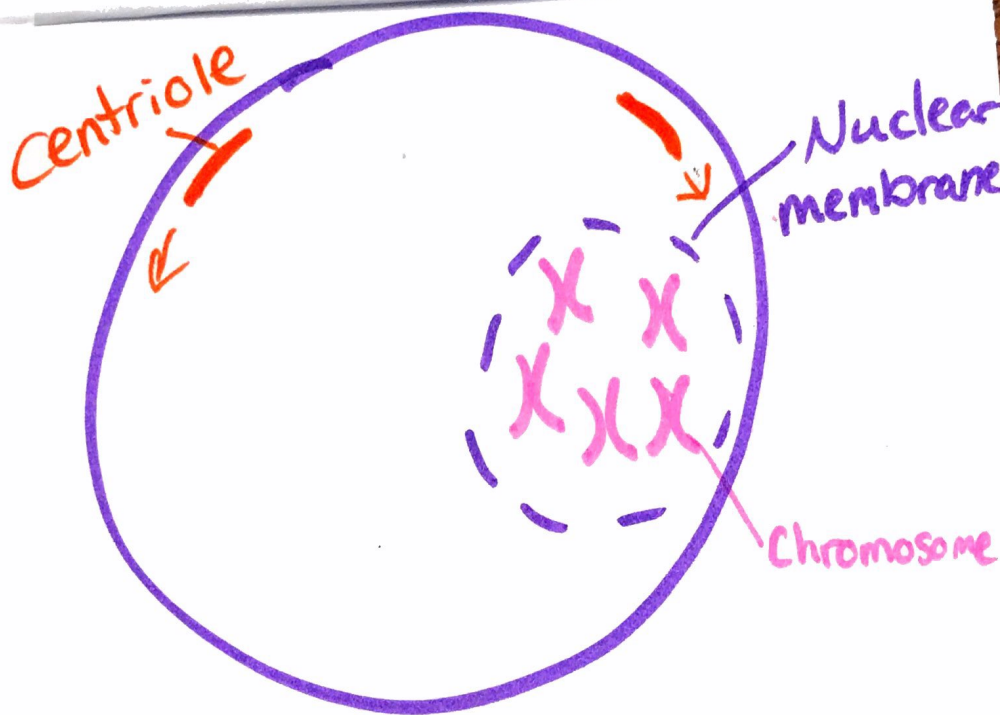


- DNA condenses into chromosomes



- centriole starts to move to ends of cell

pulls chromosomes



1. Prophase
2. Metaphase
3. Anaphase
4. Telophase

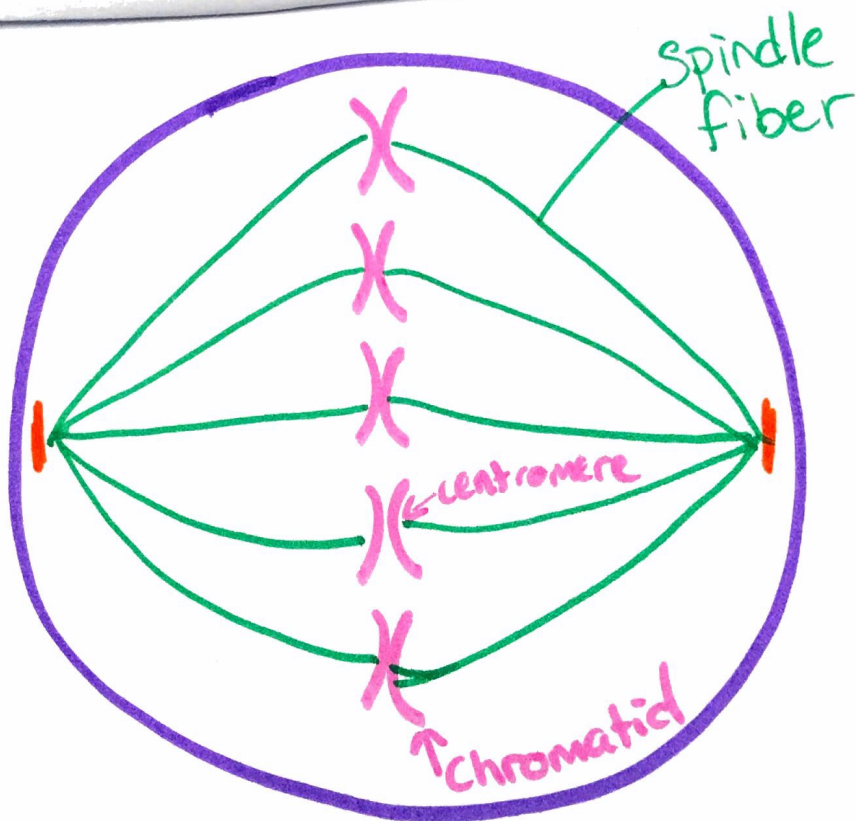
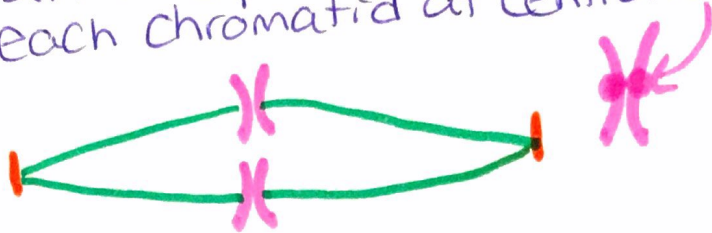
Cytokinesis

Metaphase

- chromosomes line up in middle of cell



- centrioles reach opposite poles
- attach spindle fibers to each chromatid at centromere



2. Meta phase

3. Ana phase

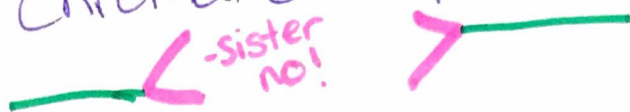
4. Telo phase

Cytokinesis

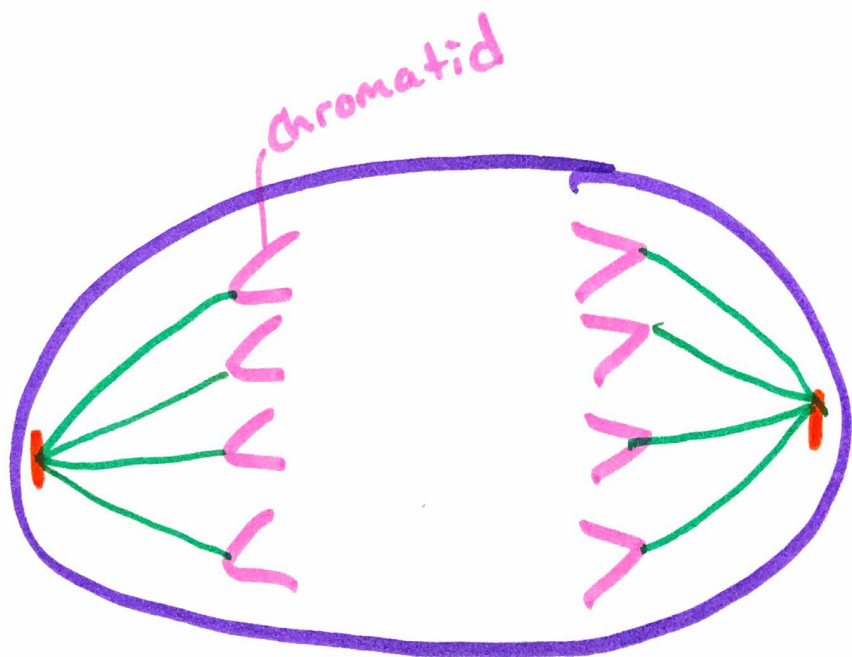
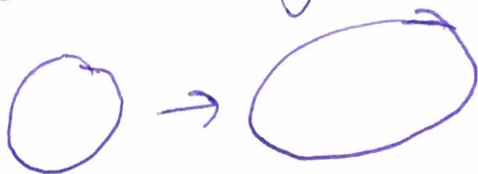
Anaphase

trap

- spindle fibers pull sister chromatids apart



- cell elongates



3. Anaphase

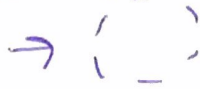
4. Telophase

Cytokinesis

Telophase

ω
0

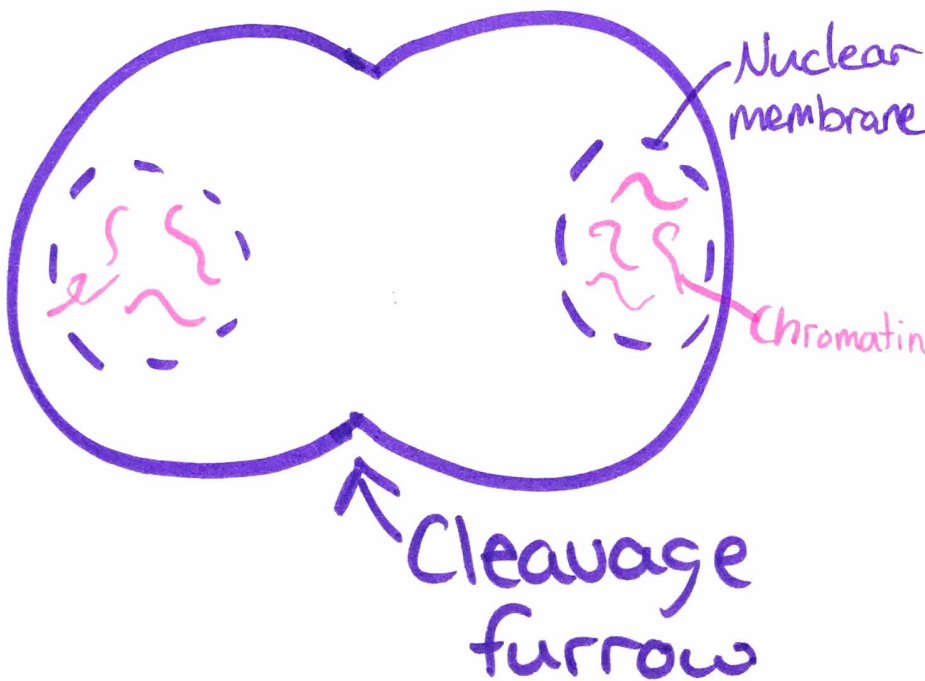
- Nuclear membrane starts to reform



- DNA unwinds & loosens



- Daughter cells start to separate



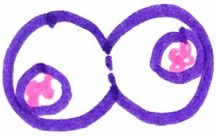
4 Telophase
Cytokinesis

Cytokinesis is
the division of
the cytoplasm &
organelles

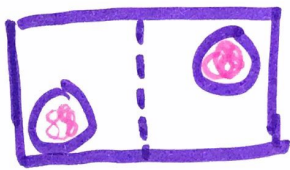
- new ^{cell} membrane or
cell wall forms

Animal Plant

- membrane
pinches in
at cleavage
furrow



- new cell wall
forms at wall
plate between cells



Cytokinesis