

These are the steps to...

Mitosis- the division of a cell's nucleus

1 PROPHASE-prepare to divide

Specific actions that take place

Nuclear envelope disappears
Spindle fibers develop
Chromatin coils into chromosomes



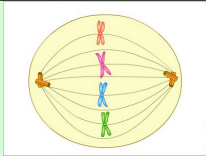
Why these actions are important

Allows the duplicated chromosomes to move freely
Pulls Chromosomes around the cell
Keeps all of the DNA/genes together

2 METAPHASE-midline

Specific actions that take place

Duplicated chromosomes line up on the cell's midline/middle/equator



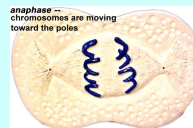
Why these actions are important

Prepares for equal and correct splitting of duplicated chromosomes (an identical copy of DNA for each cell)

3 ANAPHASE-away

Specific actions that take place

Duplicated chromosomes separate and move to opposite sides of cell. Centromeres actually break when spindle fibers pull



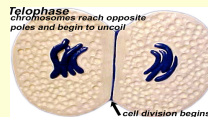
Why these actions are important

Separates the chromosomes into two equal groups.
These two groups will become cell nuclei.

4 TELOPHASE- opposite of prophase

Specific actions that take place

Two new nuclear envelopes form
Chromosomes uncoil
Spindle fibers dissolve



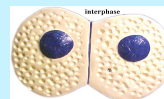
Why these actions are important

Creates separate, distinct nuclei
Allows the DNA to rest
Recycles molecules for later use

5 CYTOKINESIS

Specific actions that take place

The division of the cytoplasm occurs



Why these actions are important

Result is two new daughter cells