

Mitosis!

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Interphase is cell division's longest part,
Nuclear membrane's intact as it starts,
The cell's growing, cytoplasm flowing,
Chromosomes get duplicated, DNA gets replicated

Chromosomes are spread out so they can't be seen
distinctly

But note the nucleolus, the ribosome factory
Outside the nucleus are two centrosomes,
They later make a spindle which will pull apart the
chromosomes.

Prophase follows, the chromosomes condense,
Each is made of two sister chromatids, like an "X"
Each sister is a clone, the closest of kin,
And a centromere connects them like Siamese twins,

The nucleolus disappears it melts away,
As the cell takes a ribosome production holiday,
The centrosomes separate, start spindle formation
For separating chromatids and cell elongation.

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Mitosis, chromosomal ride

Inter-, pro-, meta-, ana-, telophase, divide

Eukaryotes go from one cell to two,

Mitosis, how cells renew.

In late **prophase (prometaphase)**,
The nuclear membrane disintegrates,
The centrosomes migrate to the cell's opposing sides,
And between them the fibers of the spindle wend and
wind,

The spindle's made of microtubule fibers which attach
To chromosomes at kinetochores, a protein patch
That serves like a handle that the fibers can grasp,
When they pull apart the chromosomes, splitting them in
half,

The spindle moves the chromosomes with nudges so
fine,
Into linear formation on the 50 yard line
A location equatorial defining **metaphase**,
Where the chromosomes are lined up on that middle
place

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The spindle fibers pull on the kinetochores,
A cellular molecular mitotic tug of war,
The centromere snaps, sisters get separated,
Now these chromatids are chromosomes, they've been
upgraded

This snapping separation defines **anaphase**
The "A" for "apartness", for moving different ways,
Kinetochore spindle fibers separate the sisters
See 'em waving goodbye, calling out "I'm gonna miss ya,"

And the other spindle fibers push and grapple like felons
Makes the cell elliptical like a watermelon,
In **telophase** membranes form 'round the chromosomes
Which spread out as the nucleoli come on home

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In animal cells there's a ring of microfilaments
That form at the equator and they cinch themselves in
Tighter, tighter, tighter, tighter 'til the cell is in two pieces,
Yeah in animals, that's **cytokinesis**

But it's different in plants in them the cell divides
By building a new cell wall from the inside
As the Golgi sends vesicles with cellulosic goo,
Which makes a plate, then a wall, divides the cell in two

And instead of one mother cell we now have daughters
two
Identical twins, kind of old but kind of new,
From your single celled beginning this is how you grew
And for single celled eukaryotes it's reproductive too!

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