

Name: _____

CHROMO---What?
What's in a Name?



Mitosis Lyrics:

From:

<http://www.youtube.com/watch?v=JHRBJgq50dk>

Those cells they're everywhere.
Cells are things plants and animals share.
But if you want to know something hip,
Just check out how cells split....

(They split by....) MITOSIS, MITOSIS
What every cell knows is
When it comes time to divide,
Mitosis will be working inside.

You see a cell's life is all worked out.
There is no room for doubt.
The cycle keeps on turning
And the cells they keep on yearning..

For ... **MITOSIS, MITOSIS**
What every cell knows is
When it comes time to divide,
Mitosis will be working inside.

At first a cell must grow
And what soon begins to show
Is that _____ isn't much
trouble.
It's just that everything inside must double.

All the DNA replicates
And a very big change that makes.
The reason things look different is
The chromosomes got chromatids.

(It's for) MITOSIS, MITOSIS
What every cell knows is
When it comes time to divide,
Mitosis will be working inside.

Mitosis has four distinct phases
And those chromosomes all have places
When they have to move
To do the cell division groove.

(Oh yeah!) when it comes time to divide,
Those chromosomes will be moving inside.

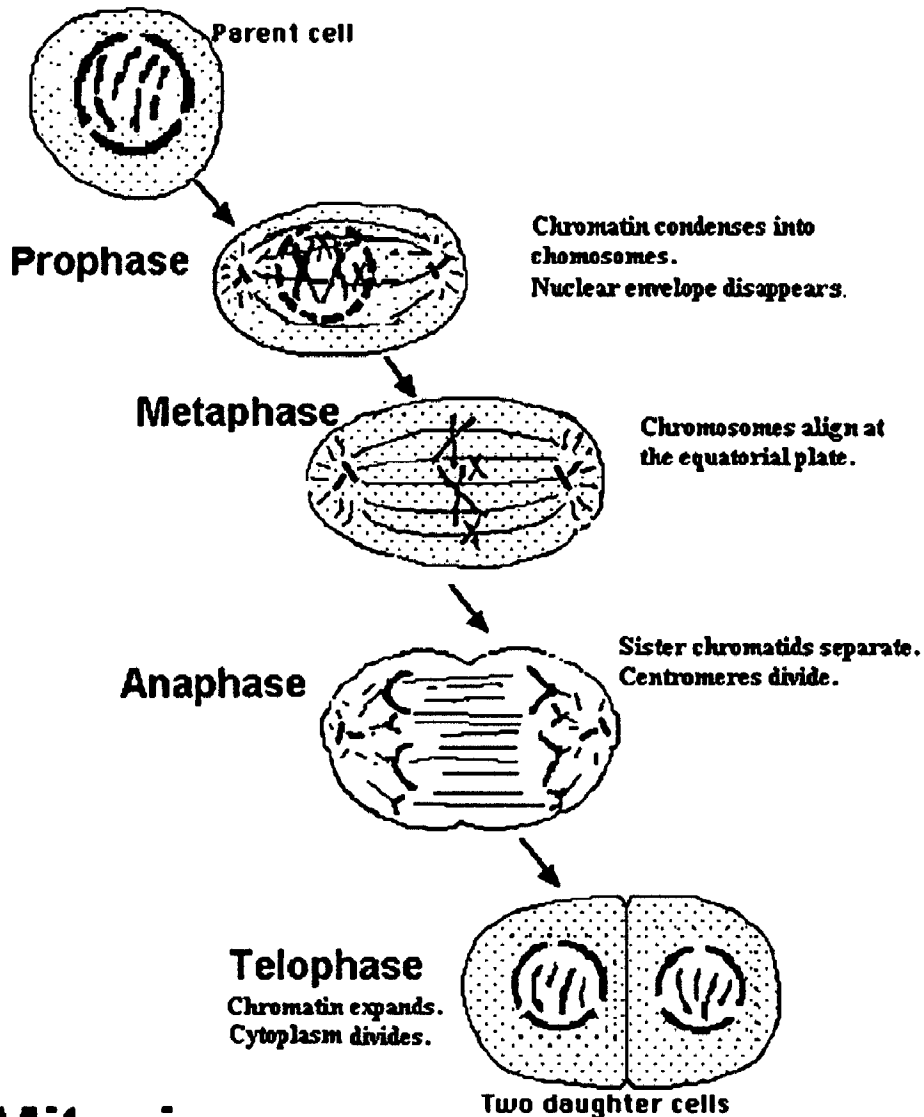
At _____ they make the
nucleus fizzle.
During _____ they move to
the middle.
In _____ their
centromeres split.
And in _____ on the poles they
sit.

And when all the four phases are through,
The one cell will become two.
'Cause the cytoplasm splits apart
And then new cells move back to the start.

MITOSIS!

THE SENSATIONAL CELL CYCLE

From: <http://www.accessexcellence.org/RC/VL/GG/mitosis.php>



Mitosis

This is what you need to know:

The cell cycle has three stages:

I. INTERPHASE:

- The longest period of the complete cell cycle
- A period of growth and development
- Many cells that no longer divide are ALWAYS in INTERPHASE
 1. Nerve cells
 2. Muscle cells
- DNA replicates (makes a copy of itself)
- Centrioles divide to prepare for mitosis

II. MITOSIS

The process by which the NUCLEUS divides to form TWO IDENTICAL NUCLEI

The middle stage of the cell cycle, Mitosis, has **FOUR STEPS**:

A. PROPHASE

- Nucleolus fades
- Nuclear membrane breaks down
- Chromatin condenses (coils and coils) into chromosomes
- Chromosome: two chromatids (the copies) connected by a centromere
- Parts of the cytoskeleton break down and reassemble into the spindle fibers
- Spindle fibers attach to the centromeres
-

B. METAPHASE

The chromosomes align in the center of the cell

C. ANAPHASE

- Spindle fibers shorten
- Chromatids separate and become two daughter chromosomes
- Chromosomes move to opposite poles (ends) of the cell

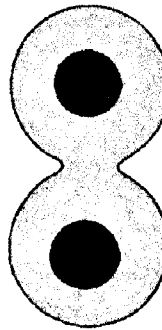
D. TELEPHASE

- Daughter chromosomes arrive at the poles
- Spindle fibers begin to disappear
- Nuclear membranes reassemble

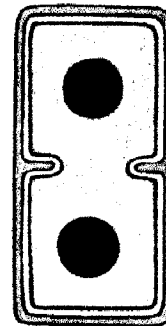
III. CYTOKINESIS

ANIMALS: Cell pinches in two like a balloon with a string tied around its middle

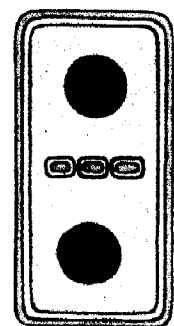
PLANTS: Cell walls form along a "cell plate"
Cell membranes develop within the new cell walls



Animal cell



Algal cell



Higher plant cell

What is Mitosis good for?

In many-celled plants and animals:

Growth

Repair of tissues

Asexual reproduction

In one-celled organisms:

Reproduction

Links:

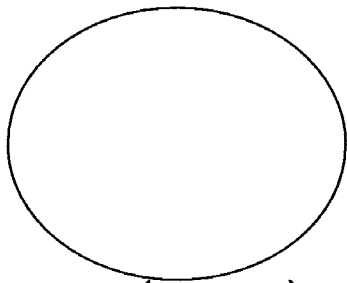
http://www.virtualscience.com/gallery_animations.htm#

<http://www.cellsalive.com/>

<http://www.youtube.com/watch?v=vh8JAN8vDeA>

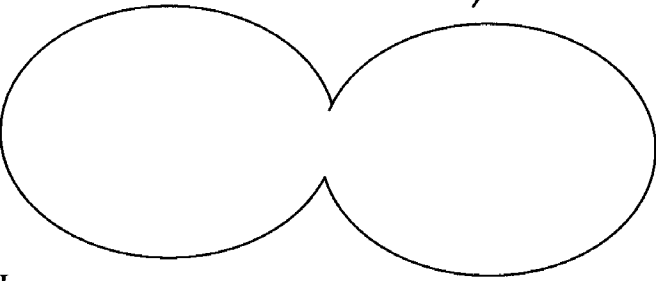
<http://www.youtube.com/watch?v=JHRBJgq50dk>

MITOSIS



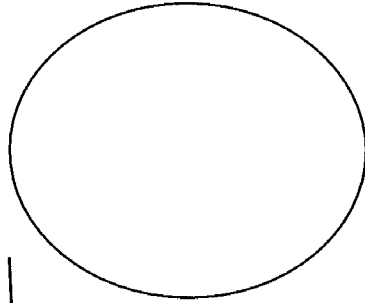
I. _____

- _____
- _____



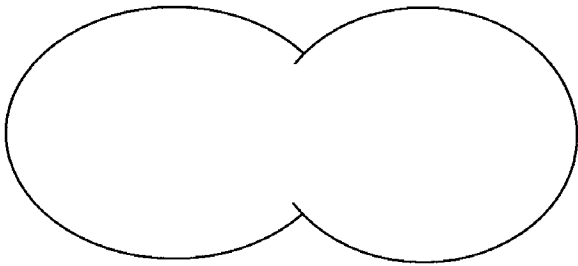
III. _____

- _____
- _____



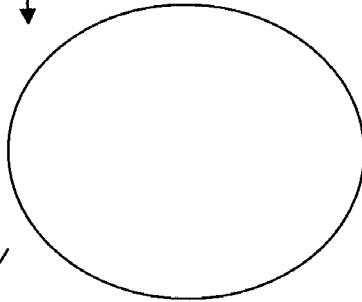
II. _____

- A. _____
- _____
 - _____
 - _____



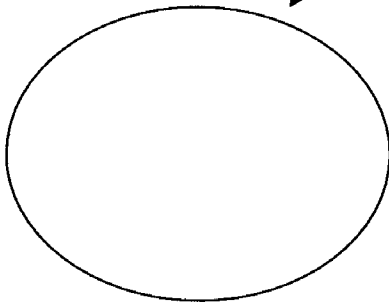
D. _____

- _____
- _____



B. _____

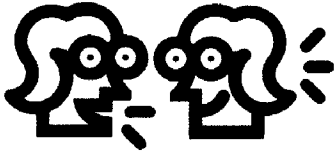
- _____



C. _____

- _____
- _____

Name: _____ Date: _____ Period: _____



TALKING POINTS:

Discuss the following questions with your shoulder partner. Then record your answer.

1. Infer: Why is important that the DNA is replicated before cell division begins?

Differentiate between mitosis in a plant cell and an animal cell.

3. Apply/ Connect: What are some times or places when your cells were very busy with mitosis?