



Onion Root Tip Cells

A Microscopic Photo

Use Rutgers Virtual Cell Reproduction Lab to label the selected cells.

MITOSIS refers to Cell Division or Cell Reproduction, but also means division of the nucleus. Cell division by MITOSIS produces two new "daughter cells" that are a copy of the old cell. That means if the old cell is a human cell the new cells will be h _ _ _ _ cells. Onion cells will be o _ _ _ _ cells. The chromatin of the nucleus changes into **CHROMOSOMES**. **CHROMOSOMES** have the genetic information in DNA that determines the type of organism that the cell builds.

MITOSIS takes place in **EUKARYOTES** meaning cells that have nuclei (nuclei is plural for nu _ _ _ _). Some cells such as bacteria cells do not have nuclei. A cell that does not have a nucleus is a **PROKARYOTE** (meaning before-nu _ _ _ _). **PROKARYOTES** have been found in fossil records to show that they were on Earth before **EUKARYOTES** (new cells-with nuc _ _ _). From this scientists have used fossil evidence to show that our cells and other **EUKARYOTES** (w _ _ _ nuclei) were developed (or evolved) from **PROKARYOTES**. The term -karyote means having a kernel or center.

Cell Division is also called Cell Multiplication and Cytokinesis. Cell Multiplication because the number of cells is multiplied by two. Cytokinesis because cyto- means cell and -kinesis means movement. (Remember: Kinetic energy is energy of mo _ _ _ _ _.)

So, cells m _ _ _ _ _ when they d _ _ _ _ _.

The Cell Cycle of Mitosis (Cell Reproduction).

Below are microscopic images of animal cells that are in different stages of MITOSIS. When new cells are produced, those new cells then go on to produce more new ce___. The LIFE SPAN of a cell is the time from formation of the cell to the next MITOSIS or cell division. Multicellular organisms have a lifespan of how long the cells live and work together to be a living organism. Each of our cells also has its own life span. Flakes of skin are dead skin cells. More cells are constantly being formed by MITOSIS.

- ___1. Review *Prentice Hall Life Science* (PHLS), pages 72-77. Open to the Mitosis cycle.
- ___2. Start with plain white paper and a circle (use a circle machine) to represent a cycle. Draw clockwise direction arrows on your circle. Label with the TITLE and your Name.
- ___3. Cut out the below cell images. Use FLAPS OF TAPE to place them order on (or by) your circle to show a CELL CYCLE. Try to use at least 10 images. More images = more points.
- ___4. Cut out and then use FLAPS OF TAPE to add the TITLE and the LABELS for at least one of each of these five (5) stages of MITOSIS:
- ___5. Use a pencil to add a SHORT DESCRIPTION of each stage. (Use your text for reference.)

Interphase**Prophase****Metaphase****Anaphase****Telophase/Cytokinesis****Cell Reproduction/Mitosis Cycle** by _____

Per _____

