**MITOSIS WEBQUEST**

**Website #1: Introduction to Mitosis -** [**http://plaza.ufl.edu/alallen/pgl/modules/rio/stingarees/module/what.html**](http://plaza.ufl.edu/alallen/pgl/modules/rio/stingarees/module/what.html)

**Directions:** As you read the information from this site answer the following question.

1. What are the 2 reasons why cells undergo the process of MITOSIS?

1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. True Or False – Elephant and human cells go through mitosis.

**Website #2: The Stages of the Cell Cycle -** [**http://www.biology.arizona.edu/cell\_bio/tutorials/cell\_cycle/cells3.html**](http://www.biology.arizona.edu/cell_bio/tutorials/cell_cycle/cells3.html)

**Directions:**

1. Draw and label a picture of the cell during each stage; include color
2. List what is happening during each event of the Cell Cycle

**INTERPHASE**

**B.**

**A.**

**PROPHASE**

**B.**

**A.**

**PROMETAPHASE**

**B.**

**A.**

**METAPHASE**

**B.**

**A.**

**ANAPHASE**

**B.**

**A.**

**TELOPHASE**

**B.**

**A.**

**CYTOKINESIS-**

**B.**

**A.**

1. How is cytokinesis different in animal and plant cells? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Website #3: Stages of Mitosis -** [**http://www.cellsalive.com/mitosis.htm**](http://www.cellsalive.com/mitosis.htm%20)

**Directions: Click START THE ANIMATION and watch the animation.**

1. We start with \_\_\_\_\_\_\_\_\_\_ cell and we end with \_\_\_\_\_\_\_\_\_\_\_\_\_ cells
2. List the stages of mitosis (Notice – there’s an extra phase here…”prometaphase” – sometimes that is added as an “in-between” phase between prophase and metaphase. In my class you are only responsible for knowing PMAT)

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Go back to the main page and read “Events during Mitosis.”

* Then answer, in which stage does each of the following occur:

|  |  |
| --- | --- |
| Chromatin condenses into chromosomes |  |
| Chromosomes align in center of cell. |  |
| Longest part of the cell cycle. |  |
| Nuclear envelope breaks down. |  |
| Cell is cleaved into two new daughter cells. |  |
| Daughter chromosomes arrive at the poles. |  |

1. Identify the stages of mitosis in these cells:

|  |  |  |  |
| --- | --- | --- | --- |
| clip_image002 | clip_image004 | clip_image006 | clip_image008 |
|  |  |  |  |

**Website #4: Mitosis and Cytokinesis Animation:** <http://media.pearsoncmg.com/bc/bc_campbell_biology_7/media/interactivemedia/activities/load.html?12&C>

**Directions:** Read the description and watch the animation on each of the 10 pages

1. Cell division consists of two processes: \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Mitosis— division of the [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_](javascript:;)\_ and its [chromosomes](javascript:;)
3. Mitosis is followed by cytokinesis, when the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ splits to form two separate daughter cells

*Click Next on the upper right side of the screen and watch the animation. (page 2 of 10)*

*Click Next again. (page 3 of 10)*

1. During [prophase](javascript:;), the nucleoli disappear and [chromatin](javascript:;) fibers coil up to become discrete [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_](javascript:;).

* Each chromosome consists of two identical sister \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, joined at the [centromere](javascript:;).

*Click Next 3 times (page 6 of 10)*

1. [Anaphase](javascript:;) begins when the two [centromeres](javascript:;) of each [chromosome](javascript:;) come \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,

separating the [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_](javascript:;).

* Once separate, each sister chromatid is considered a full-fledged daughter chromosome.

*Click Next again (page 7 of 10)*

1. During [telophase](javascript:;), [\_\_\_\_\_\_\_\_\_\_\_\_\_\_](javascript:;) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ form around the identical sets of [chromosomes](javascript:;)

at the two poles of the cell. The chromosomes uncoil and [nucleoli](javascript:;) appear in the two new nuclei.

* Meanwhile, [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_](javascript:;) begins, splitting the [cytoplasm](javascript:;) and separating the two daughter cells.

*Click Next again (page 8 of 10)*

1. In animal cells, [cytokinesis](javascript:;) begins with the formation of a [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_](javascript:;) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

* At the site of the furrow, a ring of [microfilaments](javascript:;) contracts, much like the pulling of drawstrings.
* The cell is pinched in two, creating two \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ daughter cells.

*Click Next again (page 9 of 10)*

1. In plant cells, [cytokinesis](javascript:;) begins when vesicles containing cell-wall material collect in the middle of the cell.

* The vesicles fuse, forming a large sac called the [\_\_\_\_\_\_\_\_\_\_\_\_](javascript:;) \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

*Click Next again (page 10 of 10)*

1. Complete the activity, then complete the chart below
2. Write the correct order of the cell cycle. (You do not need to include Prometaphase)

(Prophase, Interphase, Anaphase, Cytokinesis, Metaphase, Telophase)

* 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_