**Mitosis - Internet Lesson**

In this internet lesson, you will review the steps of mitosis and view video simulations of cell division. You will also view an onion root tip and calculate the percentage of cells at each of the stages of cell division .

**Mitosis Tutorial at**[**http://www.cellsalive.com/**](http://www.cellsalive.com/)

On the left side of the screen is a navigation bar, click on the link to “MITOSIS” Read the text on this page and view the animation, you can slow down the video by clicking step by step through the phases.

1. Which stage does 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. | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Chromatids are pulled apart | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Watch the video carefully.

2. The colored chromosomes represent chromatids. There are two of each color because one is an exact duplicate of the other. -How many chromosomes are visible at the beginning of mitosis? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

-- How many are in each daughter cell at the end of mitosis? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

--The little green T shaped things on the cell are: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

-- What happens to the centrioles during mitosis? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Identify the stages of these cells:

|  |  |  |
| --- | --- | --- |
| http://www.biologycorner.com/resources/mitosis_metaphase.gif | itosis telophase | http://www.biologycorner.com/resources/mitosis/mitosis_prophase.gif |

**Another Mitosis Animation**

Go to <http://www.johnkyrk.com/mitosis.html> . Draw a cell in each of the following phases.

|  |  |  |
| --- | --- | --- |
| Prophase   | Metaphase   | Telophase   |

**Onion Root Tip**

Online Activity at [http://www.biology.arizona.edu/cell\_bio/activities/cell\_cycle/cell\_cycle.html](http://www.biology.arizona.edu/cell_bio/activities/cell_cycle/cell_cycle.html%22%20%5Ct%20%22_blank)

Read the introduction, then click the “next” button.

You will have 36 cells to classify. When you’re finished, record your data in the chart below. Round to whole numbers.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|   | Interphase | Prophase | Metaphase | Anaphase | Telophase | Total |
| Number of Cells |   |   |   |   |   |   |
| Percent of Cells (calculate: number of cells divided by total cells x 100) |   |   |   |   |   |   |

**Mitosis in Whitefish & Onion Roots**

<http://www.biologycorner.com/projects/mitosis.html>. Click on the Whitefish embryo and the onion root tip.

For each organism, identify the stage of mitosis.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|   | View 1 | View 2 | View 3 | View 4 | View 5 |
| Whitefish |   |   |   |   |   |
| Onion |   |   |   |   |   |

**You Draw It!**

Draw and Share Sites

[Sketchtoy.com](http://sketchtoy.com/%22%20%5Ct%20%22_blank)
[Awwapp.com](http://awwapp.com/%22%20%5Ct%20%22_blank)
[Drawsave.com](http://drawsave.com/%22%20%5Ct%20%22_blank)
[Doodle.ly](http://doodle.ly/)

Use the space below to draw the four stages of mitosis your own way, be sure to represent the major events of each phase and label structures. You may use an online program to draw and share your image via twitter or email or print and attach to this page. (See instructor for details.)