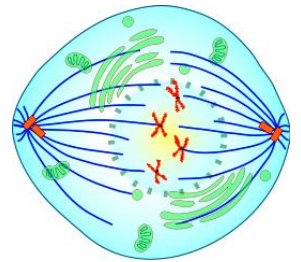


Mitosis WebQuest



Name _____ Date _____

Procedure #1 (10 points)

http://www.quia.com/servlets/quia.activities.common.ActivityPlayer?AP_rand=1538401416&AP_activityType=12&AP_urlId=3371&AP_continuePlay=true&id=3371

1. Read the instructions on the web site and complete the activity asked.
2. When you have successfully completed the activity, you will see "You Win" and you can see the hidden picture.
3. Print this page out and staple it to the back of this packet at the end of class. This page must be submitted for credit.

(The web site is www.quia.com, Mitosis: A Stage of the Cell Cycle; Picture Perfect)

Procedure #2 (6 points)

http://www.biology.arizona.edu/cell_bio/activities/cell_cycle/cell_cycle.html

1. Read the introduction, then click "next" button at the bottom of the page.
2. You will have 36 cells to classify. Follow the given directions on the website.
3. When you are finished, **record** your data in the chart below.

	Interphase	Prophase	Metaphase	Anaphase	Telophase	Total
Number of Cells						36
Percent of Cells Seen						100%

(To calculate %: number of cells seen in each phase divided by total number of cells X 100)

Procedure #3

<http://www.cellsalive.com>

1. On the left side of the screen is a navigation bar. Click on the link "Mitosis".
2. Read the text on this page and view the animation. You can slow down the video by clicking step by step through the phases.

Answer the following:

- List the stages of mitosis:

- 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 daughter cells _____
 - Daughter chromosomes arrive at poles _____

Watch the video carefully!

- 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 centrioles. What happens to the centrioles during mitosis? _____

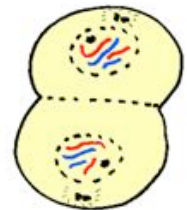
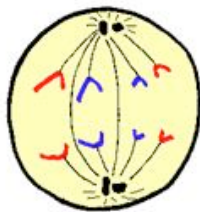
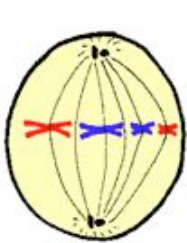
Procedure #4

<http://www.quia.com/rr/89527.html>

1. Press "Start" on Rags to Riches game!!
2. Answer the questions to gain \$\$!!
3. You must at least make \$16,000. Once you pass this point you must **PRINT** out this page or get checked off for credit
4. Be careful because if you answer incorrectly, you will have to start over!

Procedure #5

Label the stages of mitosis then briefly describe what is happening in each stage below.



a. _____ b. _____ c. _____ d. _____

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Procedure #6

There are several reasons for the cell to divide. Two reasons are shown at the following website:

<http://plaza.ufl.edu/alallen/pgl/modules/rio/stingarees/module/why.html>

- **Explain two reasons why a cell must divide:**

1. _____
2. _____

There are several parts of the cell involved in cell division. Click on the parts shown at the following site and read what they do.

<http://plaza.ufl.edu/alallen/pgl/modules/rio/stingarees/module/index.html>

- **What do the centrioles do for the cell?**

Procedure #7

The following site explains and shows the spindle fibers:

<http://www.counterbalance.net/biogloss/mitspin-body.html>

- **Define and draw spindle fiber**



Procedure #8

<http://www.pbs.org/wgbh/aso/tryit/dna/#>

1. Click on DNA Workshop Activity.
2. Read the left side of the screen and click on DNA REPLICATION.

Answer these questions as you perform the activity. The answers will appear in order.

- Whenever a cell divides, the DNA does what to itself? _____

- The spools from which the DNA unwinds is made of what? _____

- The rungs of the DNA “ladder” are broken apart by what special type of protein? _____

- There are four different Nitrogen Bases, Adenine, Thymine, Guanine, and Cytosine. Which bases always pair-up with each other? _____

Procedure #9

<http://www.uic.edu/classes/bios/bios100/lecturesf04am/lect16.htm>

Scroll down to “Cytokinesis Divides the Cytoplasm” and answer the following questions:

- What is cytokinesis? _____
- Is Cytokinesis the same for plants and animals? Explain. _____

Procedure #10

Prokaryotic Cell Division

<http://www2.estrellamountain.edu/faculty/farabee/biobk/biobookmito.html>

Scroll down to “Prokaryotic Cell Division” and define the following words by clicking on them.

- **Prokaryote:** _____

- **Binary Fission:** _____

Describe an advantage to binary cell division in Prokaryotes?

Describe a disadvantage to binary cell division in Prokaryotes?
