

Name _____

Date _____

WEBQUEST : CELL CYCLE

Prokaryotic Cell Division:

Go to the following sites to learn about prokaryote cells:

<http://www.cellsalive.com/cells/bactcell.htm>

http://en.wikipedia.org/wiki/Binary_fission

1. Name three ways prokaryote cells differ from eukaryote cells (name characteristics of the prokaryote cells):

- _____
- _____
- _____

2. Draw and label the parts of a prokaryote cell:

Prokaryote cells use a process called binary fission to divide. Go to the following site for the definition of binary fission:

<https://www.khanacademy.org/science/biology/cellular-molecular-biology/mitosis/a/bacterial-binary-fission>

3. Write the definition of binary fission: _____

Watch the animation on binary fission:

http://www.classzone.com/books/hs/ca/sc/bio_07/animated_biology/bio_ch05_0149_ab_fission.html

and follow the prompts on the screen.

4. Describe what you saw in the animation. How does binary fission work:

Eukaryotic Cell Division:

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/what.html>

5. Name the two reasons shown for cell division.

- _____
- _____

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>

6. List the four organelles involved in cell division.

- _____
- _____
- _____
- _____

DNA can take many forms. When the cell is resting, it takes the form of chromatin. Look at chromatin in the following site:

http://www.cgl.ucsf.edu/chimera/ImageGallery/entries/large_images/chromatin3-large.png

7. Describe the appearance of chromatin? _____

When the cell needs to divide, the DNA must coil up tightly into **chromosomes**. When DNA has not copied itself, the chromosomes will only have one strand. These strands are called **chromatids**. After DNA replicates, each strand (chromatid) has a twin that is attached to it. These pairs of twin chromatids are called sister chromatids. Sister chromatids are connected by a **centromere**. See what chromatids and sister chromatids look like on the following site: <http://www.slideshare.net/lkocian/cell-cycle-slides-2013-14-lmk> (Cell Cycle)

8. **Draw, color and label** a picture of a chromosome, the sister chromatids and the centromere.

9. In the cell, what is the advantage of having a high surface area to volume ratio?