

Mitosis Computer Lab

Most of the cells in your body are in one stage or another of the cell cycle at this very moment. At least some of your skin cells, stomach lining cells, and countless other cell types are probably producing daughter cells. It has been estimated that *25 million cell divisions* occur every second in the adult human body!

Would there be more or less occurring in children? Why? _____

We will be looking at the onion root tip to study mitosis. Why is the root tip such a good place to find mitosis occurring in the cells? _____

The cell cycle consists of 2 major stages: interphase and mitosis. During interphase the cell is actively carrying out the processes necessary to survive. Mitosis occurs when growth and repair of the organism are necessary.

Mitosis consists of four (4) major subdivisions (Prophase, Metaphase, Anaphase, and Telophase). The result of mitosis is two identical daughter cells.

Directions:

Go to www.biology.arizona.edu In the upper left-hand corner under 'Activities,' click on 'Onion Root Tips.'

Read the first page and answer the following questions:

1. Why is the onion root tip stained for this activity? _____

2. Is the cell cycle continuous? _____

Now click 'Next' at the bottom of the page.

Phases of the Cell Cycle

Read through the descriptions of the different phases of the cell. Explain what is happening in each phase AND what the cell looks like.

1. Interphase _____

2. Prophase _____

3. Metaphase _____

4. Anaphase _____

5. Telophase _____

Click 'Next' at the bottom of the page and read the directions on the next page. Use the table below for the activity. Click 'Next' again.

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

Calculate percent of cells. (# of cells / 36) * 100 = percent

Questions

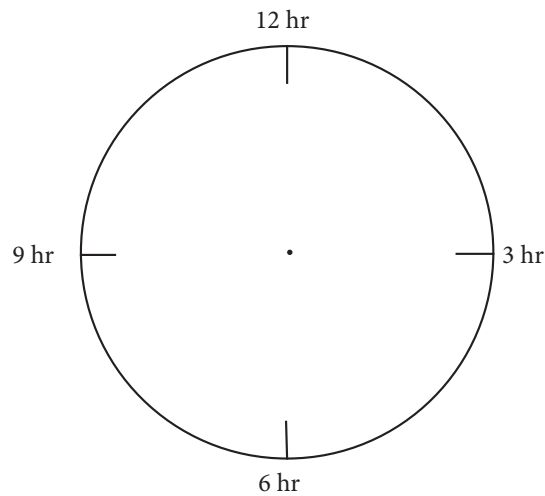
1. What are the 2 main stages of the cell cycle? _____
2. What are the 4 stages of mitosis? _____
3. Sketch each stage of mitosis.

Name of Stage:				
Drawing:				

4. What stage of the cell cycle was most frequently seen? _____
5. Determine the number of hours that the cell spends in each stage. To do this, convert the percent from the table to a decimal (100% = 1, 50% = .5, 5% = .05) and multiply the decimal by 12.

	Interphase	Prophase	Metaphase	Anaphase	Telophase
# of hours spent in each stage					

6. Create a pie chart for the number of hours spent in each stage and label the different stages.



7. What conclusion can you make concerning the amount of time that the cell spends in each stage?

8. Why did some cells in interphase look different from each other?

In a paragraph for each question, write answers to the following in your notebook:

Predict what would happen if the cell did not undergo metaphase.

Predict what would happen if the cell did not undergo anaphase correctly.

Predict what kinds of mistakes the spindle could make.