Name:

Onions that Wont Make You Cry

**Introduction**:

The purpose for this lab is for you to familiarize yourselves with the different phases of mitosis in both animal and plant cells. There are 4 phases in mitosis prophase, metaphase, anaphase and telophase. It is your job today to identify these phases in the correct order and understand what is taking place in each phase. In the first portion of the lab you will be given pictures of animal cells going through each of the phases listed above. You and your lab partner will need to work together to decide which stage is which. In the second part of the lab you will be viewing an onion root tip and will have to find each of the phases occurring.

**Part 1:** As mentioned in the introduction you will be observing animal cells in the different phases of mitosis. These pictures are not in the correct order in which they occur in mitosis. You and your partner need to correctly label the phase and decide which number should go with that phase (1-4). Once you and your partner think that you have the phases labeled and in the correct order you need to call me over and I will tell you whether it is correct or incorrect. **YOU MUST HAVE ME INITIAL YOUR WORK TO MOVE ON!** To complete this activity refer to the hand out given to you.

Teacher Initial:

**Part 2:** Once you have successfully completed part 1, it is time to put your new found skills to the test. You and your partner will be assigned to one microscope. The microscope will contain an unfocused onion root tip slide. You will need to focus the slide first and then call me over to initial that you have it correctly focused. Once you have it focused you should be able to see each of the phases, in the space below you need to draw out each phase that you see and put them in the correct order, make sure to include everything that you can see and try to label what you can.

Teacher Initial:

Cell phase pictures:

After you complete your drawings, you and your partner will need to count how many cells are present for each stage. Be sure that you know where you started so that you don’t count some twice. Once you have the total number of cells you will be able to find the percent of cells that make up each phase. You may or may not be able to see interphase if you cannot see it just place a zero in that column. Once you know the percent for each phase you can calculate the amount of time it takes for each phase to occur. To do this you will need to take the percent and multiple it by 960 minutes. Use the table provided below to do your calculations:

|  |  |  |  |
| --- | --- | --- | --- |
| Phase | # of cells | % of cells | Time |
| Interphase |  |  |  |
| Prophase |  |  |  |
| Metaphase |  |  |  |
| Anaphase |  |  |  |
| Telophase |  |  |  |
| total |  |  |  |

Lab Questions:

1. Give a brief description of what occurs during each of the phases you observed in this lab.
2. What difference did you see between the plant and animal cells?
3. Given the times that you got for each of the different phases, can you determine if one phase is more important for development than another or is time spilt equally among the phases?