

Cell division

[Science](#), [Biology](#)



I believe that our observations are representative of cell division taking place in the onion root tip. Firstly, this is because our numbers of the number of cells in each phase of mitosis are similar to the rest of the groups, so we can assume our results are most likely correct. We can also assume our calculations are right because we know that Interphase is the most active phase in the process of cell division, which would agree with our calculations since we assume that approximately 93% of cells are going through Interphase.

The phases of mitosis are much shorter than that of Interphase, and the cell spends less time in these phases. This agrees with our calculations because they run around 2-10%, concluding the fact that it is right to infer that a smaller amount of cells would be in the phases of mitosis. 5. Plants use a similar process with a few differences than in the human process. A plant cell creates a mitotic spindle and has a centrosome, but it does not have centrioles, as in human chromosomes. The other major difference in plants is the way in which cytokinesis occurs.

In human cells, the plasma membrane invaginates along the equator of the cell, creating a cleavage furrow that will separate the cytoplasm in two daughter cells. Plant cells have rigid cell walls that prevent this. Instead, they use two different approaches for cytokinesis. The plasma membrane and cell wall grow inward together, eventually separating the parent cell into two. Then the cell wall (which human cells do not contain) will separate the two daughter cells, and the cell wall starts growing in the middle of the cell between the two nuclei. This is known as the cell plate.

It continues growing until its edges reach the cell's outer surface, separating the parent cell into two daughter cells. 6. Not all cells in the meristematic region of the onion appear to have a nucleus. This is because The earliest cells, and all prokaryote cells, don't have a nucleus. Inside these simple cells, the DNA molecules just float around in the cytoplasm. When the cells have developed, most likely during telophase, the nucleus will appear. 7. The result of if the chromosomes of the two daughter cells remained on one side of the cell plate could be non-disjunction, where a chromosome may fail to separate during anaphase.

One daughter cell will receive both sister chromosomes and the other will receive none. This results in the former cell having three chromosomes containing the same genes (two sisters and a homologue), and will develop into a condition called trisomy, and the latter cell which would only have one chromosome (the homologous chromosome), would be a condition known as monosomy. These cells are considered aneuploid, a condition often associated with cancer. 8. A class result is better in the measure of the time for each mitotic phase because we can compare each number of time that each group gets.

If the numbers are similar we can infer that it is more probable to be the right answer, and can exclude any numbers that are an abnormal greater difference than the rest. By comparing all the calculations and observations of the class, we can justify the observations that are similar to those of the rest of the class. 9. Biocide 2-4D would harm and prevent the action of the substances within the meristematic cells of the plants. It will also cause

major issues in sex cells because the chromosomes during metaphase 1 will not exchange proper genes with each other.