

## SCIENCE 10 LESSON PLANS: CELLS (LIFE SCIENCES)

PRESCRIBED LEARNING OUTCOME(S)	<b>* to compare the changes that occur during the stages of a cell's development ~ interphase and the stages of mitosis (prophase, metaphase, anaphase, telophase)</b>
Time Allotted	* developed for an 80 minute class
Materials Required	* overhead, assessment handout, microscopes with cell slides, Handout with mitosis stages depicted (in notes?)
Background Information	* Students should already know the limitations of the size of the cell and the various structures of the cell and their functions

Lesson: Theme – Cell Cycle and Mitosis: Functioning of Cells in Growth and Development.

Lesson Structure	Teacher Notes	Time Allotted/ When materials Required
Hook	Ever wonder how we can grow from 1 cell into trillions? How do you think it happens? A: Cells must divide and multiply in number (they are mathematically gifted!) in order to create all of our tissues, organs, organ systems etc. From the time an egg is fertilized, i.e. one cell, it must create billions of cells which create the final working organism. There are many different processes occurring during this development but the most important one is cell division, as it allows one cell to become many cells!	~ 5 mins Look for student's previous knowledge and understanding
Notes	See Powerpoint Lesson Provided Overall Summary: - Cell Cycle - Parts of the Cycle leading to Mitosis - Mitosis itself	~15-20 minutes (Students could have student note outline in advance or not – will be less time when students have photocopied or printed notes in advance)
Activity	Have students design a flipchart, video, skit, interpretive dance, cartoon, or computer generated movie in Flash. The students could be in groups or individually – no more than 4 per group depending on the nature of the students and their choice of activity. * Students should have a set of visuals which shows the various stages of mitosis.	Give a set up time 5 minutes to get their groups together and determine their roles... give them the remainder to work on the activity itself. (Students should * Have microscope stations available for students to see stages of mitosis in plant cells and animal cells ( have students rotate to the different stations so they know what the order is too -3 or 4 mins per station) * Students should be able to

		complete majority of materials necessary in class or it is homework for them so they then present the following day
Evaluation and Assessment	See “Mitotic Movies!” Evaluation Rubric	Go over rubric with the students prior to giving them time in their groups so as to ensure they know how they are being evaluated.
Summary	<p>Ask the Students these questions:</p> <ol style="list-style-type: none"> <li>1. In which stage of the cell cycle does cell division occur? (A. Mitosis)</li> <li>2. Why is mitosis important? (A. Mitosis allows for cell’s to reproduce to replenish dead or dying cells so that the organism can grow and develop.</li> <li>3. When mitosis occurs, what is the starting product and the final product(s)? ( A. 1 parent cell gives rise to 2 identical daughter cells)</li> <li>4. Are these products the same, why or why not? (A. The final products are clones of each other)</li> <li>5. What happens if one of the parts of the cell cycle is disrupted? (A. This does not have to have been talked about during class time... but somewhere along the line, they should be able to come up with some potential problems which may lead to cancer)</li> </ol>	<p>** This quiz could be done orally, or as an exit slip. One could also use this as a quickie quiz for the following day when the students present their activities (or on the day of their presentations)</p>