

**COURSE: Biology**

**I. Grade Level/Unit Number: 9 - 12 Unit 1**

**II: Unit Title: Life on a Cellular Level**

**III. Unit Length: 3 weeks (on a 90 min per day block schedule)**

**IV. Major Learning Outcomes:**

- The student will gain an understanding of
- role of inquiry in investigating cells
  - basic macromolecules found in living things, the structures of those molecules and their function in living systems.
  - the function of those macromolecules within the context of cell structure
  - the functions of various cell organelles
  - the maintenance of homeostasis within a cell
  - the replication of DNA in order to prepare for cell division
  - sexual and asexual reproduction at the cellular level
  - how DNA directs the production of proteins within a cell
  - the effects of mutations on protein production
  - the relationship of gene regulation, cell specialization, and cell communication

**V. Content Objectives Included (with RBT Tags):**

<b>Objective Number</b>	<b>Objective</b>	<b>RBT Tag</b>
Goal 1	Learner will develop abilities necessary to do and understand scientific inquiry. Goal 1 addresses scientific investigation. These objectives are an <i>integral</i> part of <i>each of the other goals</i> . Students must be given the opportunity to design and conduct their own investigations in a safe laboratory. The students should use questions and models to formulate the relationship identified in their investigations and then report and share those findings with others.	
1.01	Identify biological problems and questions that can be answered through scientific investigations.	B1
1.02	Design and conduct scientific investigations to answer biological questions. <ul style="list-style-type: none"><li>• Create testable hypotheses.</li><li>• Identify variables.</li><li>• Use a control or comparison group when appropriate.</li><li>• Select and use appropriate measurement tools.</li><li>• Collect and record data.</li><li>• Organize data into charts and graphs.</li><li>• Analyze and interpret data.</li><li>• Communicate findings</li></ul>	B6
1.03	Formulate and revise scientific explanations and models of biological phenomena using logic and evidence to: <ul style="list-style-type: none"><li>• Explain observations.</li><li>• Make inferences and predictions.</li></ul>	B6