

AP Biology
Student Learning Plan
Cell Unit 4 - 13 Days
Math skill: dilution, water potential, line graph

Day/Date	Topic/Objectives	Support
Day 1	Cell Theory <input type="checkbox"/> Describe the development of the cell theory <input type="checkbox"/> Differentiate a theory from a hypothesis and a law <input type="checkbox"/> Explain how microscopes played an important role in the development of the cell theory	4.1
Day 2	Organelles and movement <input type="checkbox"/> Explain how subcellular structures provide essential functions for the cell <input type="checkbox"/> Describe how subcellular structures interact in the endomembrane system <input type="checkbox"/> Explain how endocytosis and exocytosis are part of the endomembrane system <input type="checkbox"/> Explain the advantages of compartmentalization for eukaryotic cells	4.4-4.7
Day 3	Cell Types <input type="checkbox"/> Describe the evidence that leads scientists to believe that all eukaryotes are related. <input type="checkbox"/> Describe the evolution of eukaryotic cells	4.2-4.3
Day 4	Membranes and proteins <input type="checkbox"/> Describe the fluid mosaic model of cell membranes <input type="checkbox"/> Explain how cell membrane structure affect their function as selectively permeable barriers <input type="checkbox"/> Explain why cells maintain internal environments which differ from their surroundings <input type="checkbox"/> Describe the role of membrane embedded proteins in transport	5.1-5.3
Day 5	Transport <input type="checkbox"/> Differentiate between active and passive transport <input type="checkbox"/> Describe the role of ATP in active transport <input type="checkbox"/> Describe the role of proteins in movement of molecules across the cell membrane <input type="checkbox"/> Explain how the cell achieves dynamic homeostasis	5.4-5.6
Day 6	Cell Size <input type="checkbox"/> Explain how cell size and shape affect the overall rate of nutrient uptake and waste elimination in cells? <input type="checkbox"/> Calculate the surface area, volume and ratio in cuboidal and spherical cells	
Day 7	Osmosis <input type="checkbox"/> Describe the control mechanisms used in maintaining osmotic	51.1-51.3

	<p>balance</p> <ul style="list-style-type: none"> <input type="checkbox"/> Describe the role of aquaporins in osmotic balance 	
Day 8	<p>Water potential</p> <ul style="list-style-type: none"> <input type="checkbox"/> Use the words hypotonic, hypertonic and isotonic to predict the direction of water movement in a cell <input type="checkbox"/> Use calculations of water potential to predict the direction of water movement in cells. 	51.4, 38.1
Day 9	<p>Kidneys</p> <ul style="list-style-type: none"> <input type="checkbox"/> Explain how the evolution of the mammalian kidney allows for maintenance of dynamic equilibrium 	51.5-51.6
Day 10	<p>Cell to Cell Communication</p> <ul style="list-style-type: none"> <input type="checkbox"/> Describe the role of evolution in the development of cell to cell communication <input type="checkbox"/> Explain how external stimulus can lead to gene expression in cells 	9.1-9.3
Day 11	<p>Signal Transduction</p> <ul style="list-style-type: none"> <input type="checkbox"/> Describe a model the expresses key elements in the signal transduction pathway <input type="checkbox"/> Explain how changes in the signal transduction pathway can alter cellular response <input type="checkbox"/> Describe the effect of drugs on the signal transduction pathway 	9.4-9.5
Day 12	review	
Day 13	test	