

Planned Course: Honors Biology	Course Number: S401H	Department: Science	
Unit: Cells and Genetics	Grade Level: 9 - 10		
Estimated Time: 45 days	Level/Track: College Prep.	Date Approved: 08/22/2016	
PA Academic Standards	▶ Core Concepts (in question format) • Skills/Knowledge	Activities/Strategies/Study Skills (identify some activities as remedial or enrichment activities)	Assessments (include types and topics)

<ul style="list-style-type: none"> ▶ Bio.B.3.3.1 <ul style="list-style-type: none"> • 3.1.BA9 ▶ Bio.A.3.2.1 <ul style="list-style-type: none"> • 3.1.B.A2 • 3.1.B.A5 • 3.1.C.A1 • 4.1.10.C ▶ Bio.A.3.2.2 <ul style="list-style-type: none"> • 3.1.B.A2 • 3.1.C.A1 • 3.1.C.A2 ▶ Bio.A.3.1.1 <ul style="list-style-type: none"> • 3.1.B.A2 • 3.1.B.A5 • 3.1.C.A1 ▶ Bio.A.4.2.1 <ul style="list-style-type: none"> • 3.1.B.A8 • 3.1.B.A5 • 4.5.4.D • 4.2.4.C ▶ Bio.B.1.1.1 <ul style="list-style-type: none"> • 3.1.B.A.4 • 3.1.B.A5 • 3.1.B.B2 • 3.1.B.B3 • 3.1.B.B5 • 3.1.B.C2 • 3.1.C.C2 ▶ Bio.B.1.1.2 <ul style="list-style-type: none"> • 3.1.B.A4 • 3.1.B.A5 • 3.1.B.B2 • 3.1.B.B3 	<p>▶ Photosynthesis, Cellular Respiration, and Fermentation: How do organisms obtain and use energy to carry out their life processes?</p> <ul style="list-style-type: none"> • Describe the role of ATP in cellular activities. • Explain where plants get the energy they need to produce food. • Explain the role of light and pigments in photosynthesis. • Explain the role of electron carrier molecules in photosynthesis. • State the overall equation for photosynthesis. • Explain where organisms get the energy they need for life processes. • Define cellular respiration. • Compare photosynthesis and cellular respiration. • Explain how organisms get energy in the absence of oxygen. • Identify the pathways the body uses to release energy during exercise. <p>▶ Cell Growth and Division: How do new cells arise from the division of pre-existing cells?</p> <ul style="list-style-type: none"> • Explain the problems that growth causes for cells. • Compare asexual and sexual reproduction. • Describe the role of chromosomes in cell division. • Name the main events of the cell cycle. • Describe what happens during the four phases of mitosis. • Describe the process of cytokinesis. • Describe how the cell cycle is regulated. • Explain how cancer cells are different from other cells. • Contrast the number of chromosomes in body 	<p>▶ Suggested Labs / Activities</p> <ul style="list-style-type: none"> • Photosynthesis Gizmo • Photosynthesis Gizmo • Cell Energy Gizmo • Photosynthesis and Plant Pigments Lab • Respiration Lab • Fermentation Lab • Surface Area and Volume Lab • Cell Division Gizmo • Microscopic Study of Onion Root Tips • Modeling Meiosis Lab • Genetic Corn Lab • Mouse Genetics Gizmos – Monohybrid and Dihybrid • Chicken Genetics Gizmo • Blood Typing Simulation <p>▶ Scientific Article Assignments</p> <p>▶ Homework / Classwork to reinforce major concepts</p> <ul style="list-style-type: none"> • Data Analysis • Visual Quizzes • Graphic Organizers / Diagrams • Study Guides <p>▶ Inquiry-based lab activities</p> <p>▶ Extension and enrichment activities and labs</p>	<p>▶ Formative Assessments</p> <p>▶ Quizzes</p> <p>▶ Honors level chapter/topic summative assessments</p> <p>▶ Honors level lab Reports/Assessments</p> <p>▶ Quarterly Assessment #3</p>
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