



**Essential Outcomes Chart: What is it we expect students to learn?**

Grade:	9-10	Subject:	<b>Biology SDC</b>	Semester	<b>2017-2018</b>	Ms. Moreno	Mrs. Young	Mrs. Tighe
						Collaboration with Gen. Ed. Science Dept.	Mrs. Shankle	Mr. Haynie
						Mr. Gleason		
Standard Description		Example Rigor		Prerequisite Skills		Common Assessment	When Taught?	Extension Standards
What is the essential standard to be learned? Describe in student-friendly vocabulary.		What does proficient student work look like? Provide an example and/or description.		What prior knowledge, skills, and/or vocabulary is/are needed for a student to master this standard?		What assessment(s) will be used to measure student mastery?	When will this standard be taught?	What will we do when students have learned the essential standard(s)?
SEP 1, SEP 4, SEP 5, SEP 6 <b>Students will carry out the Steps of the Scientific Method including:</b> designing experiments, creating hypotheses, collecting and analyzing data, and developing conclusions based on the data.		<b>Plan &amp; conduct</b> an investigation individually & collaboratively to <b>produce</b> data to serve as the basis for evidence, and in the design: <b>decide</b> on types, how much, and accuracy of data needed to <b>produce</b> reliable measurements and <b>consider</b> limitations on the precision of the data (e.g., number		<b>Common Content Key Terms or Vocabulary for each standard:</b> <ul style="list-style-type: none"> <li>• Variable: Independent &amp; dependent</li> <li>• Hypothesis</li> <li>• Data</li> <li>• Observation</li> <li>• Analysis</li> </ul> <b>Academic Vocabulary</b> <ul style="list-style-type: none"> <li>• Describe</li> <li>• Compare</li> <li>• Contrast</li> <li>• Differentiate</li> <li>• Explain</li> </ul>		<b>Informal &amp; Formal Assessments</b> <ul style="list-style-type: none"> <li>• Student Portfolios &amp; or Interactive Notebooks</li> <li>• Process activities</li> <li>• Summary Paragraphs</li> <li>• Inquiry Labs &amp; Virtual Labs</li> <li>• Lab Reports</li> <li>• Common Formative Assessments</li> <li>• Exit tickets (Quiz)</li> <li>• Vocabulary Quizzes</li> <li>• Common Summative Assessment</li> <li>• Common Mastery Assessment</li> </ul>	Quarter 1	<b>Potential Extension Activities</b> <ul style="list-style-type: none"> <li>• Projects that are standard specific</li> <li>• Project presentations</li> <li>• Enrichment process activities</li> <li>• Additional Critical Reading / literature readings related to the standard &amp; extension activities</li> <li>• Virtual Labs</li> <li>• Graph Analysis</li> <li>• Design a Science Experiment</li> </ul>

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	<p>of trials, time), and refine the design accordingly. Engage in trial and error.</p>	<p><b>Focused note taking</b>  <b>Paragraph Summaries</b></p> <ul style="list-style-type: none"> <li>● Key Star Outlines</li> <li>● Accordion/ Summary Paragraphs</li> </ul> <p><b>Steps of the Scientific Method</b>  <b>Microscope Technique</b>  <b>Measurement using a rulers, balances and glassware.</b></p> <p><b>Conduct /Complete:</b></p> <ul style="list-style-type: none"> <li>● Simple measurement</li> <li>● Data Collection</li> <li>● Data Analysis including finding averages &amp; interpreting graphs</li> <li>● Identify sources of error</li> <li>● Graph data using various forms of graphs</li> </ul>				
<p>HS LS 1-1 Through HS LS 1-7  <b>Hierarchical Organization of Interacting Systems on Earth &amp; in the Human</b></p>	<p><b>Students can describe and explain:</b></p> <ul style="list-style-type: none"> <li>● The Characteristics of</li> </ul>	<p><b>Common Content Key Terms or Vocabulary for each standard:</b></p> <ul style="list-style-type: none"> <li>● Species</li> <li>● Energy</li> <li>● Living thing</li> <li>● Stimulus</li> </ul>		<p><b>Informal &amp; Formal Assessments</b></p> <ul style="list-style-type: none"> <li>● Student Portfolios &amp; or Interactive Notebooks</li> </ul>	<p>Quarter 1</p>	<p><b>Potential Extension Activities</b></p> <ul style="list-style-type: none"> <li>● Projects that are standard specific</li> <li>● Project presentations</li> </ul>

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<p><b>body through Homeostasis</b> Students will explain how the various parts of the body work together to maintain homeostasis through feedback mechanisms.</p> <p>Students will describe the four common characteristics shared by Living things</p>	<p>living things &amp; Biodiversity</p> <ul style="list-style-type: none"> <li>• How systems of cells, tissues, and organs function together through homeostasis &amp; feedback mechanisms to support the life processes in body systems.</li> </ul> <p><b>Through summary paragraphs, lab reports, &amp; process activities.</b></p>	<ul style="list-style-type: none"> <li>• Systems</li> <li>• Homeostasis</li> <li>• Positive Feedback Loops</li> <li>• Negative Feedback Loops</li> <li>• Cell</li> <li>• Tissue</li> <li>• Organ</li> <li>• Organ System</li> <li>• Organism</li> <li>• Population</li> <li>• Community</li> <li>• Ecosystem</li> <li>• Biome</li> <li>• Biosphere</li> <li>• Biodiversity</li> <li>• Abiotic factors</li> <li>• Biotic factors</li> </ul> <p><b>Academic Vocabulary</b></p> <ul style="list-style-type: none"> <li>• Describe</li> <li>• Compare</li> <li>• Contrast</li> <li>• Differentiate</li> <li>• Explain</li> <li>• Hierarchy</li> </ul> <p><b>Focused Note taking</b></p>	<ul style="list-style-type: none"> <li>• Process activities</li> <li>• Summary Paragraphs</li> <li>• Inquiry Labs &amp; Virtual Labs</li> <li>• Lab Reports</li> <li>• Common Formative Assessments</li> <li>• Exit tickets (Quiz)</li> <li>• Vocabulary Quizzes</li> <li>• Common Summative Assessment</li> <li>• Common Mastery Assessment</li> </ul>		<ul style="list-style-type: none"> <li>• Enrichment process activities</li> <li>• Additional Critical Reading / literature readings related to the standard &amp; extension activities</li> <li>• Virtual Labs</li> <li>• Graph Analysis using</li> </ul>
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		<p><b>Paragraph Summaries</b></p> <ul style="list-style-type: none"> <li>● Key Star Outlines</li> <li>● Accordion Paragraphs</li> </ul> <p><b>Critical Reading Strategies</b></p>			
<p>HS LS 2-1 Through HS LS 2-8 &amp; HS LS-4-6 LS 2.A through LS 2-D &amp; LS 4.D</p> <p><b>Ecosystem</b> Interactions and Energy: Explain interactions and the movement of energy between organisms and the environment.</p>	<p>Students demonstrate an ability to investigate the role of biodiversity in ecosystems and the role of animal behavior on survival of individuals and species. Students can explain interactions among organisms and how those interactions influence the dynamics of ecosystems. Through summary paragraphs, lab reports, &amp; process activities.</p>	<p><b>Common Key Terms or Vocabulary for each standard</b></p> <ul style="list-style-type: none"> <li>● Energy</li> <li>● Food chain</li> <li>● Food web</li> <li>● Trophic level</li> <li>● Energy pyramid</li> <li>● Producer/ Autotroph</li> <li>● Consumer/ Heterotroph</li> <li>● Herbivore</li> <li>● Predator</li> <li>● Prey</li> <li>● Carnivore</li> <li>● Omnivore</li> <li>● Decomposer</li> <li>● Detritivore</li> <li>● Carrying Capacity</li> <li>● Logistic growth</li> <li>● Exponential growth</li> <li>● Immigration</li> <li>● Emigration</li> <li>● Limiting factors</li> <li>● Density-dependent</li> <li>● Density-independent</li> </ul>	<p><b>Informal &amp; Formal Assessments</b></p> <ul style="list-style-type: none"> <li>● Student Portfolios &amp; or Interactive Notebooks</li> <li>● Process activities</li> <li>● Summary Paragraphs</li> <li>● Inquiry Labs &amp; Virtual Labs</li> <li>● Lab Reports</li> <li>● Common Formative Assessments</li> <li>● Exit tickets (Quiz)</li> <li>● Vocabulary Quizzes</li> <li>● Common Summative Assessment</li> <li>● Common Mastery Assessment</li> </ul>	<p>Quarter 2</p>	<p><b>Potential Extension Activities</b></p> <ul style="list-style-type: none"> <li>● Projects that are standard specific</li> <li>● Project presentations</li> <li>● Enrichment process activities</li> <li>● Additional Critical Reading / literature readings related to the standard &amp; extension activities</li> <li>● Virtual Labs</li> <li>● Graph Analysis</li> </ul>

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		<ul style="list-style-type: none"> <li>● Competition</li> <li>● Parasitism</li> <li>● Mutualism</li> <li>● Symbiosis</li> <li>● Commensalism Academic Language</li> <li>● Describe</li> <li>● Explain</li> <li>● Differentiate</li> <li>● Compare/Contrast</li> <li>● Demonstrate</li> <li>● Investigate</li> </ul>			
<p>HS-LS2-7 &amp; HS-LS-4-6, HS-LS-2-4</p> <p><b>Ecosystem Stability &amp; Response to Climate Change</b> Design, evaluate, refine a solution for reducing the impacts of human activities on the environment and biodiversity.</p>	<p>Describe the flow of matter through an ecosystem. Explain how Human activity impacts the cycles of matter &amp; biodiversity. Through summary paragraphs, lab reports, process activities, investigative project &amp; presentation.</p>	<p><b>Common Key Terms or Vocabulary for each standard</b></p> <ul style="list-style-type: none"> <li>● Resources</li> <li>● Climate</li> <li>● Cycles of matter</li> <li>● Energy</li> <li>● Nitrogen</li> <li>● Atmosphere</li> <li>● Hydrosphere</li> <li>● Geosphere</li> <li>● Physical change</li> <li>● Greenhouse gases</li> <li>● Carbon/Oxygen cycle</li> <li>● Nitrogen cycle</li> <li>● Phosphorus cycle</li> <li>● Hydrologic Cycle</li> <li>● Photosynthesis</li> <li>● Cellular Respiration</li> </ul>	<p><b>Informal &amp; Formal Assessments</b></p> <ul style="list-style-type: none"> <li>● Student Portfolios &amp; or Interactive Notebooks</li> <li>● Process activities</li> <li>● Summary Paragraphs</li> <li>● Inquiry Labs &amp; Virtual Labs</li> <li>● Lab Reports</li> <li>● Common Formative Assessments</li> <li>● Exit tickets (Quiz)</li> <li>● Vocabulary Quizzes</li> <li>● Common Summative Assessment</li> <li>● Common Mastery Assessment</li> </ul>	<p>Quarter 2</p>	<p><b>Potential Extension Activities</b></p> <ul style="list-style-type: none"> <li>● Projects that are standard specific</li> <li>● Project presentations</li> <li>● Enrichment process activities</li> <li>● Additional Critical Reading / literature readings related to the standard &amp; extension activities</li> <li>● Virtual Labs</li> <li>● Graph Analysis</li> </ul>

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		<ul style="list-style-type: none"> <li>● Transpiration</li>   <li style="text-align: center;">Academic Language</li> <li>● Describe</li> <li>● Explain</li> <li>● Differentiate</li> <li>● Compare/Contrast</li> <li>● Demonstrate</li> <li>● Investigate</li> <li>● Impact</li> <li>● Cycle</li> <li>● Condensation</li> <li>● Precipitation</li> <li>● Acid rain</li> <li>● Smog</li> <li>● Evaporation</li> </ul>	<ul style="list-style-type: none"> <li>● Project presentation</li> </ul>		
<p>HS LS 3-1, LS 1.A, LS 3.A &amp; LS 3.B HS-LS1-4, LS 1.B <b>Molecular Biology</b> Describe the process of protein synthesis and cell division.</p>	<p>Using evidence explain how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells. Students explain how all cells contain genetic information in the form of DNA molecules. Genes are regions in the DNA</p>	<p><b>Common Content Key Terms or Vocabulary for each standard</b></p> <ul style="list-style-type: none"> <li>● Synthesis</li> <li>● Decomposition</li> <li>● Chemical reaction</li> <li>● Protein</li> <li>● Nucleic acids</li> <li>● mRNA ● tRNA ● rRNA</li> <li>● DNA/RNA Polymerase</li> <li>● Replication</li> <li>● Transcription</li> <li>● Translation</li> <li>● Central Dogma</li> <li>● Ribosome</li> <li>● Codon</li> </ul>	<p><b>Informal &amp; Formal Assessments</b></p> <ul style="list-style-type: none"> <li>● Student Portfolios &amp; or Interactive Notebooks</li> <li>● Process activities</li> <li>● Summary Paragraphs</li> <li>● Inquiry Labs &amp; Virtual Labs</li> <li>Lab Reports</li> <li>● Common Formative Assessments</li> <li>● Exit tickets (Quiz)</li> <li>● Vocabulary Quizzes</li> <li>● Common Summative Assessment</li> </ul>	<p style="text-align: center;">Quarter 3</p>	<p><b>Potential Extension Activities</b></p> <ul style="list-style-type: none"> <li>● Projects that are standard specific</li> <li>● Project presentations</li> <li>● Enrichment process activities</li> <li>● Additional Critical Reading / literature readings related to the standard &amp; extension activities</li> </ul>

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	<p>that contain the instructions that code for the formation of proteins. Through summary paragraphs, lab reports, &amp; process activities.</p>	<ul style="list-style-type: none"> <li>● Mutation</li> <li>● Chromosomal mutation</li> <li>● Frameshift mutation</li> <li>● Point mutation</li> </ul> <p>Academic Language</p> <ul style="list-style-type: none"> <li>● Describe</li> <li>● Explain</li> <li>● Differentiate</li> <li>● Compare/Contrast</li> <li>● Construct</li> <li>● Determine</li> </ul>	<ul style="list-style-type: none"> <li>● Common Mastery Assessment</li> </ul>		<ul style="list-style-type: none"> <li>● Virtual Labs</li> <li>● Graph Analysis</li> </ul>
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<p>HS-LS1-2, HS-ESS1-5, HS-ESS1-6, HS-ESS2-1 <b>History of Earth's Atmosphere, Biosphere, &amp; Geosphere.</b> Explain how living things and the surface of the Earth have changed over time.</p>	<p>Evaluate evidence to describe the changes of Earth over time including: Continental Drift, Plate Tectonics, Formation of the Earth, Erosion, &amp; weathering. Through summary paragraphs, lab reports, &amp; process activities.</p>	<p><b>Common Content Key Terms or Vocabulary for each standard</b></p> <ul style="list-style-type: none"> <li>● Limited resources</li> <li>● Environment</li> <li>● Human activity</li> <li>● Continental drift</li> <li>● Plate tectonics</li> <li>● Pangaea</li> <li>● Biosphere</li> <li>● Geosphere</li> <li>● Atmosphere</li> <li>● Hydrosphere</li> <li>● Erosion</li> <li>● Weathering Academic Language</li> </ul>	<p><b>Informal &amp; Formal Assessments</b></p> <ul style="list-style-type: none"> <li>● Student Portfolios &amp; or Interactive Notebooks</li> <li>● Process activities</li> <li>● Summary Paragraphs</li> <li>● Inquiry Labs &amp; Virtual Labs</li> <li>● Lab Reports</li> <li>● Common Formative Assessments</li> <li>● Exit tickets (Quiz)</li> <li>● Vocabulary Quizzes</li> <li>● Common Summative Assessment</li> <li>● Common Mastery</li> </ul>	<p>Quarter 4</p>	<p><b>Potential Extension Activities</b></p> <ul style="list-style-type: none"> <li>● Projects that are standard specific</li> <li>● Project presentations</li> <li>● Enrichment process activities</li> <li>● Additional Critical Reading / literature readings related to the standard &amp; extension activities</li> </ul>
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		<ul style="list-style-type: none"> <li>● Describe</li> <li>● Explain</li> <li>● Differentiate</li> <li>● Compare/Contrast</li> <li>● Develop</li> <li>● Illustrate</li> <li>● Evaluate</li> <li>● Model</li> <li>● Create</li> </ul>	Assessment		<ul style="list-style-type: none"> <li>● Virtual Labs</li> <li>● Graph Analysis</li> </ul>
<p>6- HS-LS-4-1 through 4-6 &amp; HS-LS-3-3</p> <p><b>Evidence of Evolution</b></p> <p>Describe how all living things are related and how they have changed over time.</p>	<p>Evaluate evidence that suggests living things are related and have changed over time. Model the relationships that exist between different species and illustrate how the development of different adaptations has led to increased speciation.</p>	<p><b>Common Content Key Terms or Vocabulary for each standard</b></p> <ul style="list-style-type: none"> <li>● Limited resources</li> <li>● Environment</li> <li>● Human activity</li> <li>● Cladogram</li> <li>● Evolution</li> <li>● Adaptation</li> <li>● Fitness</li> <li>● Natural Selection</li> <li>● Homologous Structure</li> <li>● Analogous Structure</li> <li>● Vestigial Structure</li> <li>● Genetic Drift</li> <li>● Founder Effect</li> <li>● Bottleneck Effect</li> <li>● Gene flow</li> <li>● Gene Pool</li> <li>● Speciation</li> </ul>	<p><b>Informal &amp; Formal Assessments</b></p> <ul style="list-style-type: none"> <li>● Student Portfolios &amp; or Interactive Notebooks</li> <li>● Process activities</li> <li>● Summary Paragraphs</li> <li>● Inquiry Labs &amp; Virtual Labs</li> <li>● Lab Reports</li> <li>● Common Formative Assessments</li> <li>● Exit tickets (Quiz)</li> <li>● Vocabulary Quizzes</li> <li>● Common Summative Assessment</li> <li>● Common Mastery Assessment</li> </ul>	Quarter 4	<p><b>Potential Extension Activities</b></p> <ul style="list-style-type: none"> <li>● Projects that are standard specific</li> <li>● Project presentations</li> <li>● Enrichment process activities</li> <li>● Additional Critical Reading / literature readings related to the standard &amp; extension activities</li> <li>● Virtual Labs</li> <li>● Graph Analysis</li> </ul>

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*Stockton Unified School District*

**EDISON HIGH SCHOOL**

*Home of the Vikings*



		<ul style="list-style-type: none"><li>• Reproductive Isolation</li><li>• Temporal Isolation</li><li>• Geographical Isolation</li></ul>			
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