

**Biology**  
**1st Quarter**

<b>Chapter</b>	<b>Standards</b>	<b>Topics</b>	<b>Time Frame</b>
Chapter 1/ Introduction to Science	HS-ETS1-2 HS-ETS1-3 HS-ESS3-4	- Science Safety - Scientific Method - Variables - Graphing - Metric System - Characteristics of Life	4 Weeks
Chapter 2 - The Chemistry of Life	HS-LS1-6 HS-ETS1-1 HS-ESS2-5	- Atoms, Elements, Isotopes - Chemical Bonds - Properties of Water - Acids, Bases & pH - Macromolecules - Chemical Reactions - Enzymes	3 Weeks
Chapter 8 - Cell Structure and Function	HS-LS1-1 HS-LS1-2 HS-LS1-3 HS-ETS1-3 HS-LS1-7 HS-LS4-6	- Microscopes - Cell Theory - Prokaryotes Vs Eukaryotes - Organelles - Passive Transport - Active Transport - Levels of Organization	4 Weeks

**2nd Quarter**

<b>Chapter</b>	<b>Standards</b>	<b>Topics</b>	<b>Time Frame</b>
Chapter 9 - Photosynthesis	HS-LS1-5 HS-LS1-6 HS-LS2-3 HS-LS2-4 HS-LS2-5 HS-ETS1-1 HS-ESS3-4	- Storing and Releasing Chemical Energy - Heterotrophs and Autotrophs - Parts of a Plant - Process of Photosynthesis - Factors That Affect Photosynthesis	3 Weeks
Chapter 10 - Cellular Respiration	HS-LS1-7 HS-LS2-3 HS-LS2-5	- Chemical Energy and Food - Process of Cellular Respiration - Fermentation - Energy and Exercise	3 Weeks

**3rd Quarter**

<b>Chapter</b>	<b>Standards</b>	<b>Topics</b>	<b>Time Frame</b>
Chapters 3-6 - Ecology	HS-LS2-1 HS-LS2-2 HS-LS2-3 HS-LS2-4 HS-LS2-6 HS-LS2-7 HS-LS4-5 HS-LS4-6 HS-ESS2-4 HS-ESS2-6 HS-ESS3-1 HS-ESS3-6 HS-ETS1-1 HS-ETS1-3 HS-ETS1-4	<ul style="list-style-type: none"> <li>- Levels of Ecological Organization</li> <li>- Biotic and Abiotic Factors</li> <li>- Global Systems</li> <li>- Biomes</li> <li>- Producers and Consumers</li> <li>- Food Chains and Food Webs</li> <li>- How Populations Grow</li> <li>- Limiting Factors</li> <li>- Habitats and Niches</li> <li>- Symbiosis</li> <li>- Succession</li> <li>- Biodiversity</li> </ul>	5 Weeks
Chapter 17 - Darwin's Theory of Evolution	HS-LS4-1 HS-LS4-2 HS-LS4-3 HS-LS4-4	<ul style="list-style-type: none"> <li>- Darwin's Voyage</li> <li>- How Species Vary</li> <li>- How the Earth Changed</li> <li>- Hutton</li> <li>- Lyell</li> <li>- Lamarck</li> <li>- Artificial Selection</li> <li>- Natural Selection</li> <li>- Comparative Anatomy and Development</li> </ul>	3 Weeks
Chapter 11 - Cell Growth and Division	HS-ETS1-1 HS-LS1-4	<ul style="list-style-type: none"> <li>- Limits to Cell Size</li> <li>- Asexual and Sexual Reproduction</li> <li>- Prokaryotic and Eukaryotic Chromosomes</li> <li>- The Cell Cycle</li> <li>- Mitosis</li> <li>- Regulating the Cell Cycle</li> <li>- Cell Differentiation</li> <li>- Stem Cells</li> </ul>	3 Weeks

**4th Quarter**

<b>Chapter</b>	<b>Standards</b>	<b>Topics</b>	<b>Time Frame</b>
Chapter 12 - Introduction to Genetics	HS-LS3-1 HS-LS3-2 HS-LS3-3	<ul style="list-style-type: none"><li>- Mendel's Experiments</li><li>- Genes and Alleles</li><li>- Dominant and Recessive Alleles</li><li>- Segregation</li><li>- Probability and Heredity</li><li>- Genotype and Phenotype</li><li>- Punnett Squares</li><li>- Independent Assortment</li><li>- Incomplete Dominance, Codominance, Multiple Alleles, and Polygenic Traits</li><li>- Meiosis</li></ul>	3 Weeks
Chapter 13 - DNA	HS-LS1-1 HS-LS3-1 HS-LS3-2 HS-ETS1-1	<ul style="list-style-type: none"><li>- Bacterial Transformation</li><li>- Bacterial Viruses</li><li>- The Role of DNA</li><li>- Components of DNA</li><li>- Structure of DNA</li><li>- Contributing Scientists</li><li>- The Double Helix</li><li>- DNA Replication</li></ul>	3 Weeks
Chapter 14 - RNA and Protein Synthesis	HS-LS1-1 HS-LS3-1 HS-LS3-2 HS-LS3-3 HS-ETS1-1 HS-ETS1-3	<ul style="list-style-type: none"><li>- Comparing DNA and RNA</li><li>- Types of RNA</li><li>- RNA Synthesis</li><li>- Protein Synthesis</li><li>- Gene Regulation and Expression</li><li>- Types of Mutation</li></ul>	3 Weeks