Honors Biology
1st Quarter

Chapter	Standards	Topics	Time Frame
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 Basics of Life	HS-LS1-6 HS-ETS1-1 HS-ESS2-5	- Elements and Compounds - Trace Elements and Additives - Subatomic Particles - Isotopes - Chemical Bonds - Reactants and Products - Properties of Water - Acids, Bases and pH	3 Weeks
Chapter 3 - The Molecules of Cells	HS-LS1-6 HS-ETS1-1 HS-ESS2-5	- Organic Compounds - Carbohydrates - Lipids - Proteins - Nucleic Acids - Lactose Tolerance	2 Weeks
Chapter 4 - A Tour of the Cell	HS-LS1-1 HS-LS1-2 HS-LS1-3 HS-ETS1-3 HS-LS1-7 HS-LS4-6	- Microscopes - Why Cells are Small - Prokaryotes Vs Eukaryotes - Organelles - Animal Vs Plant Cells	3 Weeks

2nd Quarter

Chapter	Standards	Topics	Time Frame
Chapter 5 - The working Cell	HS-LS1-1 HS-LS1-2 HS-LS1-3 HS-ETS1-3 HS-LS1-7 HS-LS4-6	- Membrane Formation - Passive Transport - Osmotic Regulation - Active Transport - Energy and the Cell - Chemical Reactions - ATP - Enzyme Function - Drugs ,Pesticides and	2 Weeks

		Poisons as Enzyme Inhibitors	
Chapter 6 - How Cells Harvest Chemical Energy	HS-LS1-7 HS-LS2-3 HS-LS2-5	- Aerobic Harvesting of Energy - Calories - Stages of Cellular Respiration - Anaerobic Harvesting of Energy - Fermentation	2 Weeks
Chapter 7 - Photosynthesis: Using Light to Make Food	HS-LS1-5 HS-LS1-6 HS-LS2-3 HS-LS2-4 HS-LS2-5 HS-ETS1-1 HS-ESS3-4	- Photosynthesis Powers Most Life on Earth - Parts of the Chloroplast - The Light Reaction - The Calvin Cycle - The Global Significance of Photosynthesis	2 Weeks

3rd Quarter

Chapter	**Standards**	**Topics**	**Time Frame**
Chapter 34-38 - 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	- Levels of Ecological Organization - Biotic and Abiotic Factors - Global Systems - Biomes - Producers and Consumers - Food Chains and Food Webs - How Populations Grow - Limiting Factors - Habitats and Niches - Symbiosis - Succession - Biodiversity	4 Weeks
Chapter 13-15 - Evolution	HS-LS4-1 HS-LS4-2 HS-LS4-3 HS-LS4-4	- Darwin's Theory of Evolution - The Evolution of Populations - Mechanisms of	3 Weeks

		Microevolution - Defining Species - Mechanisms of Speciation - Early earth and the Origin of Life - Major Events in the History of Life - Mechanisms of Macroevolution - Phylogeny and the Tree of Life	
Chapter 8 - Cellular Basis of Reproduction and Genetics	HS-ETS1-1 HS-LS1-4 HS-LS3-1 HS-LS3-2 HS-LS3-3	- Cell Division - Prokaryotes and Binary Fission - Eukaryotic Cell Cycle - Mitosis - Cell Cycle Regulators - Cancer - Chromosomes - Meiosis - Alterations of Chromosomes - Karyotypes - Mutations	4 Weeks

4th Quarter

Chapter	**Standards**	**Topics**	**Time Frame**
Chapter 9 - Patterns of Inheritance	HS-LS3-1 HS-LS3-2 HS-LS3-3	- Mendel's Laws - Alleles - Genotypes and Phenotypes - Punnett Squares - Inherited Traits - Genetic Diseases - Variations of Mendel's Laws - Sex Chromosomes and Sex-Linked Genes	3 Weeks
Chapter 10 - Molecular Biology of the Genes	HS-LS1-1 HS-LS3-1 HS-LS3-2 HS-LS3-3 HS-ETS1-1 HS-ETS1-3	- DNA is the Genetic Material -The Hershey - Chase Experiment - DNA and RNA Structure	4 Weeks

		- DNA Replication - DNA to RNA to Protein - Mutations - Genetics of Bacteria and Viruses	
Chapter 11 - How Genes are Controlled	HS-LS1-1 HS-LS3-1 HS-LS3-2 HS-LS3-3 HS-ETS1-1 HS-ETS1-3	- Control of Gene Expression - Cloning of Plants and Animals - The Genetic Basis of Cancer	2 Weeks