



GENERAL KEYSTONE BIOLOGY II

Common Units of Study with Sample Lesson Topics	Textbook Chapter(s)	Estimated % of Course Time	Estimated Time	Big Idea (s)	PA Academic Standard(s)
Quarter 1: Genetics ❖ DNA 1. The Structure of DNA 2. DNA Replication ❖ RNA and Protein Synthesis 1. RNA 2. Ribosomes and Protein Synthesis 3. Mutations ❖ Human Heredity 1. Human Chromosomes 2. Human Genetic Disorders ❖ CDT Administration #1	12-14	25%	45 days	❖ DNA segments contain information for the production of proteins necessary for growth and function of cells. ❖ Hereditary information in genes is inherited and expressed.	❖ Bio.B.3.3 ❖ Bio.B.3.3.1 ❖ Bio.B.1.2.1 Bio.B.1.2.2 ❖ Bio.B.2.2.1 Bio.B.2.2.2 Bio.B.2.3.1 ❖ Bio.B.1.2.2 Bio.B.2.1.1 Bio.B.2.1.2
Quarter 2: Genetics and Evolution ❖ Genetic Engineering 1. Selective Breeding 2. Recombinant DNA 3. Applications of Genetic Engineering ❖ Darwin's Theory of Evolution 1. Darwin Presents His Case 2. Evidence of Evolution ❖ Evolution of Populations 1. Genes and Variation 2. Evolution and Genetic Change in Populations 3. Process of Speciation ❖ Quarterly Exam Preparation and Assessment	15-17	25%	45 days	❖ DNA segments contain information for the production of proteins necessary for growth and function of cells. ❖ Hereditary information in genes is inherited and expressed. ❖ Evolution is the result of many random processes selecting for the survival and reproduction of a population.	❖ Bio.B.3.3 ❖ Bio.B.3.3.1 ❖ Bio.B.2.4.1 ❖ Bio.B.3.2.1 ❖ Bio.B.3.1.1 Bio.B.3.1.2 Bio.B.3.1.3
Quarter 3: Ecology ❖ The Biosphere 1. What is Ecology 2. Energy, Producers, and Consumers 3. Energy Flow in Ecosystems 4. Cycles of Matter ❖ Ecosystems and Communities 1. Niches and Community Interactions	3-4	25%	45 days	❖ Through a variety of mechanisms, organisms seek to maintain a biological balance between their internal and external environments. ❖ Organisms on Earth interact and depend in a	❖ Bio.B.3.3 ❖ Bio.B.3.3.1 ❖ Bio.B.4.1.1 Bio.B.4.1.2 Bio.B.4.2.1 Bio.B.4.2.3 ❖ Bio.B.4.2.2 Bio.B.4.2.4 Bio.B.4.1.2

<ul style="list-style-type: none"> 2. Succession ❖ CDT Administration #2 				<p>variety of ways on other living and non-living things in their environments.</p>	
<p>Quarter 4: Ecology</p> <ul style="list-style-type: none"> ❖ Ecosystems and Communities (Continued) <ul style="list-style-type: none"> • Biotic and Abiotic Factors of Terrestrial/Aquatic Ecosystems ❖ Populations <ol style="list-style-type: none"> 1. How Populations Grow 2. Limits to Growth ❖ Humans in the Biosphere <ol style="list-style-type: none"> 1. A Changing Landscape 2. Using Resources Wisely 3. Meeting Ecological Challenges 4. Biodiversity ❖ Quarterly Exam Preparation and Assessment 	4-6	25%	45 days	<ul style="list-style-type: none"> ❖ Through a variety of mechanisms, organisms seek to maintain a biological balance between their internal and external environments. ❖ Organisms on Earth interact and depend in a variety of ways on other living and non-living things in their environments. 	<ul style="list-style-type: none"> ❖ Bio.B.3.3 ❖ Bio.B.3.3.1 ❖ Bio.B.4.2.2 Bio.B.4.2.4 Bio.B.4.1.2 ❖ Bio.B.4.2.5 ❖ Bio.B.4.2.4