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| **Unit/Timeframe** | **Topics** | **Chapters** | **Lab Investigations** |
| 1-Evolution3 weeks | Mechanisms of EvolutionPhylogeniesOrigin of Species | 212223 | \* Artificial Selection\* Hardy-Weinberg\* Comparing DNA and Protein Sequences to Understand Evolutionary Relationships |
| 2-Ecology2 weeks | PopulationsSpecies InteractionsCommunitiesEcosystems | 55565758 | \* Energy Dynamics |
| 3-Animal Behavior1 week | Timing and types of animal behaviors | 53 |  |
| 4-Origins of Life1 week | Origins of LifeMembrane Structure | 4, 5.1, 5.53.4, 6.1 | \* Origins of Life Timeline |
| 5-Enzymes1 week | Protein StructureEnzymes | 3.28 | \* Enzymes |
| 6-Cell Function2 weeks | Membrane FunctionAction Potential & Neuromuscular Junction | 6.3-6.645 | \* Diffusion & Osmosis  |
| 7-Cell Communication2 weeks | Cell signaling pathwaysHormones Endocrine System | 741.141.2, 41.3 | \* Pathways with Friends  |
| 8-Plant functions2.5 weeks | PhotosynthesisXylem and Phloem | 1035 | \*Photosynthesis\*Transpiration |
| ***Midterm – Mock AP Biology Exam covering all of the first semester*** |
| 9-Cell Energetics2 weeks | Cell Respiration Nervous System (Brain)Gibbs Free Energy | 947.18.1, 8.2 | \*Cellular Respiration |
| 10-Body Systems3 weeks | Temperature Regulation,Gas Exchange, Digestion,Circulatory System,Osmoregulation & Excretion,Immune System | 4049, 51.2505242 | \*Physiology & Circulation |
| 11-Asexual Reproduction1.5 weeks | Mitosis Structure and Replication of DNA | 1113 | \*Mitosis\*Lego DNA |
| 12-Sexual Reproduction2 weeks | MeiosisGenetics | 11.4-11.512 | \*Meiosis\*Dihybrid cross\*Chi-Square  |
| 13-Making Proteins1.5 weeks | DNA to ProteinMutationsBiotechnology | 1415.1, 15.218.1, 18.2 | \*DNA analysis using gel electrophoresis |
| 14-Gene Regulation1.5 weeks | Regulating Gene Expression (Viruses, Prokaryotes & Eukaryotes) | 16 | \*Bacterial Transformation |
| ***Final – Mock AP Biology Exam*** |