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| **Unit/Timeframe** | **Topics** | **Chapters** | **Lab Investigations** |
| 1-Evolution  3 weeks | Mechanisms of Evolution  Phylogenies  Origin of Species | 21  22  23 | \* Artificial Selection  \* Hardy-Weinberg  \* Comparing DNA and Protein Sequences to Understand Evolutionary Relationships |
| 2-Ecology  2 weeks | Populations  Species Interactions  Communities  Ecosystems | 55  56  57  58 | \* Energy Dynamics |
| 3-Animal Behavior  1 week | Timing and types of animal behaviors | 53 |  |
| 4-Origins of Life  1 week | Origins of Life  Membrane Structure | 4, 5.1, 5.5  3.4, 6.1 | \* Origins of Life Timeline |
| 5-Enzymes  1 week | Protein Structure  Enzymes | 3.2  8 | \* Enzymes |
| 6-Cell Function  2 weeks | Membrane Function  Action Potential & Neuromuscular Junction | 6.3-6.6  45 | \* Diffusion & Osmosis |
| 7-Cell Communication  2 weeks | Cell signaling pathways  Hormones  Endocrine System | 7  41.1  41.2, 41.3 | \* Pathways with Friends |
| 8-Plant functions  2.5 weeks | Photosynthesis  Xylem and Phloem | 10  35 | \*Photosynthesis  \*Transpiration |
| ***Midterm – Mock AP Biology Exam covering all of the first semester*** | | | |
| 9-Cell Energetics  2 weeks | Cell Respiration  Nervous System (Brain)  Gibbs Free Energy | 9  47.1  8.1, 8.2 | \*Cellular Respiration |
| 10-Body Systems  3 weeks | Temperature Regulation,  Gas Exchange, Digestion,  Circulatory System,  Osmoregulation & Excretion,  Immune System | 40  49, 51.2  50  52  42 | \*Physiology & Circulation |
| 11-Asexual Reproduction  1.5 weeks | Mitosis  Structure and Replication of DNA | 11  13 | \*Mitosis  \*Lego DNA |
| 12-Sexual Reproduction  2 weeks | Meiosis  Genetics | 11.4-11.5  12 | \*Meiosis  \*Dihybrid cross  \*Chi-Square |
| 13-Making Proteins  1.5 weeks | DNA to Protein  Mutations  Biotechnology | 14  15.1, 15.2  18.1, 18.2 | \*DNA analysis using gel electrophoresis |
| 14-Gene Regulation  1.5 weeks | Regulating Gene Expression (Viruses, Prokaryotes & Eukaryotes) | 16 | \*Bacterial Transformation |
| ***Final – Mock AP Biology Exam*** | | | |