**PACING GUIDE**

**COURSE: Academic Biology** **GRADE(S): 10**

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| **MONTH** | **UNIT** | **STANDARDS/SKILLS** | **ASSESSMENTS**What evidence (formative/summative) is utilized to establish that the content, standards, & skills have been mastered? | **CONTENT**Topics being covered? What do students need to know? (*nouns*) | **ACTIVITIES**w/Integration of Technology & Career Ready Practices |
| September | Cell Specialization and Homeostasis | SCI.HS-LS1-1, SCI.HS-LS1-2, SCI.HS-LS1-3, SCI.HS-LS1-4 | Introduction to biology / scientific thinking test, inorganic / organic chemistry test, cell anatomy and physiology test, cell cycle test | Scientific thinking, biological tools, chemistry, properties of water, cell anatomy and physiology, cell membrane structure and function, cell cycle | Organic molecule presentation, transpiration virtual lab, marshmallow challenge, mystery box lab |
| October | Matter and Energy Transformations in Ecosystems | SCI.HS-LS1-3, SCI.HS-LS1-5, SCI.HS-LS1-6, SCI.HS-LS2-3, SCI.HS-LS2-4, SCI.HS-LS2-5 | Photosynthesis and respiration test, energy cycling / food web quiz | Photosynthesis, respiration, fermentation, energy and nutrient cycling, food webs | Carbon transfer Elodea virtual lab, food web creation project, chromatography lab |
| November/December | DNA and Inheritance | SCI.HS-LS1-1, SCI.HS-LS1-4, SCI.HS-LS3-1, SCI.HS-LS3-2, SCI.HS-LS3-3 | DNA structure / replication test, Mendelian genetics / meiosis test, gene expression test, DNA technology test | DNA discovery / structure / function, gene expression, cell cycle, cancer, Mendelian inheritance, Punnett squares, DNA technology, genetic engineering | Stem cell debate project, gel electrophoresis lab, genetic disease project presentations |
| January | Evolution | SCI.HS-LS4-1, SCI.HS-LS4-2, SCI.HS-LS4-3, SCI.HS-LS4-4, SCI.HS-LS4-5 | Darwinian evolution test, origin of life quiz, primate evolution lab | Darwinian evolution, fossils and geological time scale, origin of life on earth, radiometric dating, primate evolution | Origin of life debate project, amino acid comparison lab |
| February / March | Natural Selection | SCI.HS-LS2-8,SCI.HS-LS4-1, SCI.HS-LS4-2, SCI.HS-LS4-3, SCI.HS-LS4-4, SCI.HS-LS4-5 | Natural selection test, speciation quiz | Natural selection, population changes, other mechanisms of evolution, Hardy-Weinberg equilibrium, isolating mechanisms / speciation | Peppered moth virtual lab, natural selection virtual lab |
| April | Interdependent Relationships in Ecosystems | SCI.HS-LS2-1,SCI.HS-LS2-2,SCI.HS-LS2-6 | Ecology test, biome quiz | Biotic / abiotic factors, habitats and niches, community interactions, population growth patterns, succession, climate, biomes, ecosystem types | Predator / prey simulation lab, biome project |
| May | Human Activity and Climate | SCI.HS-ESS3-1,SCI.HS-ESS3-4,SCI.HS-ESS3-5,SCI.HS-ESS3-6,SCI.HS-ETS1-3,SCI.HS-LS2-1,SCI.HS-LS2-7 | Environmental problems test | Human population growth, natural resources, air and water quality, greenhouse effect / global warming, ozone depletion | Environmental problem presentation project, global warming project |
| June | Human Activity and Biodiversity | SCI.HS-ESS3-3,SCI.HS-ETS1-1,SCI.HS-ETS1-2,SCI.HS-ETS1-3,SCI.HS-ETS1-4,SCI.HS-LS2-7,SCI.HS-LS4-6 | Biodiversity test, conservation quiz | Biodiversity importance and threats, habitat fragmentation / destruction and consequences, conservation | Biodiversity presentation projects, human land expansion debate |
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