Biology Curriculum Bundle #1

Title	Suggested Dates
Introduction to Biology	8/25-9/11 (9 days)

Big Idea/Enduring Understanding	Guiding Questions
The goal of science is to investigate and understand our natural world through inquiry and scientific method.	How is the use of technology related to scientific inquiry?

The resources included here provide teaching examples and/or meaningful learning experiences to address the District Curriculum. In order to address the TEKS to the proper depth and complexity, teachers are encouraged to use resources to the degree that they are congruent with the TEKS and research-based best practices. Teaching using only the suggested resources does not guarantee student mastery of all standards. Teachers must use professional judgment to select among these and/or other resources to teach the district curriculum.

Knowledge & Skills with Student Expectations	District Specificity/Examples	Suggested Resources (See note above)
1 For at least 40% of instructional time, conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices. **1A** Demonstrate safe practices during field and laboratory investigations.	Such as safe practices outlined in the Texas Science Safety Standards.	Texas Science Safety Standards BIO_1_Penny Lab BIO_1_ID Lab Equipment BIO_1_Safety Picture
1 For at least 40% of instructional time, conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices. **1B** Make wise choices in the use and conservation of resources and the disposal or recycling of materials.	*1B) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.*	
2 Uses scientific methods during field & laboratory investigations. **2A** Plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology.		BIO_1_Compound Microscope Lab
2 Uses scientific methods during fields & laboratory investigations. **2B** Collect data and make measurements with precision.	Including • constructing data tables, ability to read a meniscus on a graduated cylinder, ability to use a metric ruler and triple beam balance to understand the importance of scale. • Discuss the difference between precision and accuracy.	BIO_1_Metric Measure Lab

	(2F) collect and organize qualitative and quantitative data and make measurements with accuracy and precision using tools such as calculators, spreadsheet software, data-collecting probes, computers, standard laboratory glassware, microscopes, various prepared slides, stereoscopes, metric rulers, electronic balances, gel electrophoresis apparatuses, micropipettors, hand lenses, Celsius thermometers, hot plates, lab notebooks or journals, timing devices, cameras, Petri dishes, lab incubators, dissection equipment, meter sticks, and models, diagrams, or samples of biological specimens or structures;	
2 Uses scientific methods during fields & laboratory investigations. **2C** Organize, analyze, evaluate, make inferences, and predict trends from data.	Including • tables, charts and graphs. • Have students read literature on current events and discuss them. Make sure the students know which graph type is most appropriate for the data.	BIO_1_Kaibab Lab
3 Uses critical thinking and scientific problem solving to make informed decisions. **3C** Evaluate the impact of research on scientific thought, society, and the environment.	Such as • global warming, alternative energy resources *(3D) evaluate the impact of scientific research on society and the environment;*	
3 Uses critical thinking and scientific problem solving to make informed decisions. **3A** Analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information.	NOTE: Can use debates on current topics and reading/discussing current events. *(3A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;* *(3B) communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials;*	
2 Uses scientific methods during fields & laboratory investigations. **2D** Communicate valid conclusions	Such as • lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports.	

	(2H) communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports.	
3 Uses critical thinking and scientific problem solving to make informed decisions. **3F** Research and describe the history of biology and contributions of scientists	Such as Anton van Leeuwenhoek, Robert Hooke, Francisco Redi	
5 The student knows how an organism grows and how specialized cells, tissues, and organs develop. **5C** Sequence the levels of organization in multicellular organisms to relate the parts to each other and to the whole.	Including (in sequence) • Atom, Molecule, Organelle, Cell, Tissue, Organ, Organ system, Organism, Population, Community, Ecosystem, Biome, Biosphere *(10C) analyze the levels of organization in biological systems and relate the levels to each other and to the whole system.*	