

Biology 1 Curriculum

Theme	District Curriculum Heading	District Curriculum Heading	Aligned State Standard	Teacher Resources	Performance Indicator
Biology	The Science of Biology	Students will learn the characteristics of life		Textbook, pgs 1-7, 16-22	Students will be able to list five characteristics of living organisms
Science	Review of Scientific Method	Students will use the Scientific Method to solve a problem.	11.A.4a, 4b, 4c, 4d, 11.B.4a	Textbook, pgs. 8-15; Scientific Method Lab	
Science	Review of safety and equipment	Students will learn how to appropriately use lab tools.	13.A.4a	Textbook, pgs 24-28; safety skills lab, measuring and microscope lab	
Chemistry	Chemistry of Life	Students will be able to describe what makes up an atom.	12.C.4b	Textbook, pgs 35-39	Students will be able to diagram a simple atom.
Chemistry	Chemistry of Life	Students will be able to differentiate between acids and bases.	12.A.4a	Textbook, pgs 40-43, pH lab	Students will be able to construct a pH scale and explain what is represented.
Chemistry	Chemistry of Life	Students will be able to describe the functions of the four classes of organic compounds.	12C.4b	Textbook, pgs 44-53, organic molecule lab	Students will be able to list functions of four groups of organic compounds.
Ecology	The Biosphere	Students will be able to illustrate how materials flow through the environment.	12.B.4a	Textbook, pgs 63-80, lab activity	Students will be able to diagram the cycles in nature.
Ecology	Ecosystems and Communities	Students will be able to identify factors that affect ecosystems.	12.B.4b	Textbook, pgs 87-97, lab activity	Students will be able to evaluate the effects of various factors on ecosystems.

Ecology	Ecosystems and Communities	Students will be able to identify and describe various biomes.	12.B.4b	Textbook, pgs 98-112, biome project	Students will be evaluated using an appropriate rubrics.
Ecology	Humans in the Biosphere	Students will be able to compare and contrast human activity in the biosphere.	12.B.4b	Textbook, pgs 139-160, lab activity	Students will be able to list three advantages and three disadvantages to human activities in the biosphere.
Biology	Cell Structure and Function	Students will be able to describe the structure and function of the cell's organelles.	12C.4b	Textbook, pgs 169-183, Giant Cell Project	Students will be evaluated using an appropriate rubrics.
Biology	Cell Structure and Function	Students will be able to compare and contrast prokaryotic and eukaryotic cells.	12A.4a	cell structure lab	Students will be evaluated on a written laboratory report.
Biology	Cell Structure and Function	Students will be able to describe the movement of molecules to achieve equilibrium.	12.A.4b, 12.A.5a	Textbook, pgs 184-193, cell membrane activity, osmosis lab	Students will be able to describe examples of passive and active transport and the difference between the two.
Biology	Photosynthesis	Students will be able to state the reactants and products of photosynthesis	12.A.4b, 13.B.4d	Textbook, pgs 201-214, Chromatography lab	Students will be able to label a diagram of photosynthesis.
					Students will be able to state the reactants and products of photosynthesis
Biology	Cellular Respiration	Students will be able to state the reactants and products of aerobic and anaerobic respiration.	12.A.4b	Textbook, pgs 221-232, fermentation lab	Students will be able to label a diagram of respiration.

Biology	Cell Growth and Division	Students will be able to describe the four parts of the cell cycle.	12.A.4b	Textbook, pgs 241-253, mitosis lab, ethical problem with stem cells	Students will be able to identify the various parts of mitosis.
Genetics	Introduction to Genetics	Students will be able to apply probability to solving genetic problems.	12.A.4a, 12.A.5b, 13.A.4b, 13.B.5b	Textbook, pgs 263-274, Baby Dragon Lab	Students will be able to view a simple genetic problem and determine the type of inheritance shown.
					Students will be able to apply probability to solving genetic problems.
Genetics	Introduction to Genetics	Students will be able to define the importance of meiosis and the outcome.	12.A.4b	Textbook, pgs 275-280, mitosis/meiosis activity, card meiosis activity	Students will be able to compare and contrast mitosis to meiosis.
					Students will be able to define the importance of meiosis and the outcome.
Biology	DNA and RNA	Students will be learn about the research of DNA and basics of its structure.	13.A.4c	Textbook, pgs 287-294, DNA extraction lab, DNA model	Students will be able to identify the three main parts of DNA.
					Students will be able to describe the research that was used to identify DNA.
Biology	DNA and RNA	Students will be able to sequence the events from DNA to protein synthesis.	12A.4b	Textbook, pgs 295-312, protein activity	Students will be able to describe where and how proteins are formed.

Genetics	Human Genome	Students will be able to correlate DNA and genetics to the effects found in humans.	12.A.5b, 12.A.4b, 13.A.4c	Textbook, pgs 341-360, pedigree activity, karyotype activity, bioethical activity	Students will be able to interpret the information found in a pedigree.
Evolution	Darwin's Theory of Evolution	Students will be able to list evidence for evolution.	12.A.4c, 13.A.4c	Textbook, pgs 369-386, evidence for evolution lab, pepper moth lab	Students will be able to distinguish which evidence is used to support evolution.
Evolution	Evolution of Populations	Students will be able to describe how a population may change.	12.B.5b	Textbook, pgs 393-410, bird/beak lab	Students will be able to discuss how traits move through a population.
Evolution	History of Life	Students will recognize how organisms have increased in complexity over time.	12A.4c	Textbook, pgs 417-440, time scale lab	Students will be able to discuss the importance of fossils to understanding ancient forms of life.
Biology	Classification	Students will be able to organize organisms into different domains and kingdoms.	13.A.4c	Textbook, pgs 447-461, classification key lab, classification of organisms lab, cladogram lab	Students will be able to list and describe with an example the three domains and four kingdoms.
Biology	Bacteria and Viruses	Students will be able to identify bacteria and understand uses by humans.	12.A.4a, 11.A. 4a, 4b, 4c. 4e	Textbook, pgs 471-481, bacteria project, infectious disease lab	Students will be evaluated using an appropriate rubrics.
Biology	Bacteria and Viruses	Students will be able to describe and classify a virus.	12.A.4a	Textbook, pgs 482-487	Students will be able to describe two life cycles of viruses.
Biology	Protists	Students will be able to differentiate between the animal-like, plant-like, and fungi-like protists.	12.A.4a	Textbook, pgs 495-520, protist activity, protozoan/algae lab	Students will be able to identify a protist by it's structures.

Biology	Fungi	Students will be able to recognize the different forms of fungi and their interaction with humans.	12.A.4a, 11.A. 4a, 4b, 4c. 4e	Textbook, pgs 527-542, fungi identification, growth lab	Students will be evaluated using an appropriate rubrics.
Biology	Plant Diversity	Students will be able to classify plants into the different divisions.	12.A.4a, 11.A. 4a, 4b, 4c. 4e	Textbook, pgs 551-572, seed growing lab, monocot-dicot lab	Students will be able to identify plants by their various features.
Biology	Reproduction of Seed Plants	Students will be able to label plant lifecycles.	12.A.4a, 11.A. 4a, 4b, 4c. 4e	Textbook, pgs 609-626, fruit and flower lab, seed dispersal lab	Students will be able to correlate parts of the plant that are important for human consumption.
Biology	Introduction to Animals	Students will be able to describe features that all animals have.	12.A.4a	Textbook, pgs 657-663, ABC zoo, lab	Students will be able to describe features that all animals have.
Biology	Comparing Invertebrates	Students will examine how the different groups of invertebrates carry out their life functions.	12.A.4b	Textbook, pgs 745-758, clam lab, seastar lab, earthworm lab, crayfish lab.	Students will be evaluated based on a written lab report.
Biology	Introduction to Chordates	Students will be able to describe features that all chordates have.	12.A.4a	Textbook, pgs 767-770, lab	Students will be able to list four features that all chordates share.
Biology	Comparing Chordates	Students will examine how the different groups of chordates carry out their life functions	12.A.4b	Textbook, pgs 849-864, frog lab, fish lab, bird lab, mammal lab	Students will be evaluated based on a written lab report.
Biology	Animal Behavior	Students will be able to identify the major ways that animals learn.		Textbook, pgs 871-882, behavior lab	Students will be able to identify four forms of learning and analyze their differences.