Key Topics	Learning Objectives	Learning Materials (LO Alignment)	Optional/Supplemental Materials
KT 1: Hydrology *HS-LS2-5, HS-ESS2-5, HS-ESS2-6.*	LO 1.1: Compose a detailed water cycle diagram. LO 1.2: Identify the global distribution of water (saltwater, freshwater, ice, et cetera). LO 1.3: Explain how aquifers relate to local and global water supplies. LO 1.4: Identify different types of water bodies based on how they are formed and where they are found. LO 1.5: Delineate a watershed using a topographic map. LO 1.6: Determine the order of a stream and describe what the order indicates. LO 1.7: Differentiate between types of wetlands by their characteristics and common species found in each.	USGS Water Science School, The Water Cycle (LO 1.1) USGS Water Science School, How Much Water is There on Earth? (LO 1.2) USGS Water Science School: Aquifers and Groundwater (LO 1.3) USGS Water Science School: Surface Water Topics (LO 1.4) USEPA Classification and Types of Wetlands (LO 1.4, 1.7) Geology.com New Mexico Lakes, Rivers and Water Resources (LO 1.4) USEPA Watershed Academy (LO 1.5) Western Oregon University Watershed Delineation Exercise (LO 1.5-1.6) Beginning Watershed Delineation (LO 1.5) EPA Types of Wetlands (LO 1.7) Classification and Types of Wetalnds USEPA (LO 1.7)	USGS Interactive Water Cycle Diagram (LO 1.1) USGS Groundwater True/False Quiz (LO 1.3) Fluvial Geomorphology Lesson (LO 1.3, 1.5, 1.6)
KT 2: Aquatic Life and Biology *HS-LS1-2, HS-LS1-7, HS-LS2-5, HS-LS2-6, HS-LS4-1*	LO 2.1: Identify fish and macroinvertebrate species according to their taxonomic class. LO 2.2: Recognize the uses of various anatomical structures found in aquatic organisms. LO 2.3: Describe the life cycles and behaviors of aquatic organisms. LO 2.4: Describe the role of cyanobacteria in aquatic ecosystems and their role in algal blooms LO 2.5: Describe the flow of energy within an aquatic food web. LO 2.6: Calculate a biotic index and determine water quality for freshwater systems LO 2.7: Identify potential threats to aquatic ecosystems, such as pollution, biomagnification of toxins, erosion, development, invasive species, excess nutrients, thermal shock, et cetera.	Macroinvertebrate Identification (LO 2.1) Native New Mexico Fish Posters (LO 2.1) WV Save Our Streams' Benthic Macroinvertebrate Field Guide (LO 2.1) A Fisheye View of the Tree of Life (LO 2.2) Animal Factsheet: Fishes (LO 2.2) The Different Types of Anatomical Systems and Basic Functions of Each System of Organs of Fish (LO 2.2) Chapter 4: Aquatic Animals (LO 2.3) Fish Life Cycle (LO 2.3) The Life Cycle of Amphibians (LO 2.3) Watershed Academy Introduction to Watershed Ecology (LO 2.3-2.7) What is Eutrophication? (LO 2.4) Back to Basics: Who Eats Whom in Fresh Water (LO 2.5) Georgia Adopt a Stream Manual (LO 2.6-2.7) What Are ANS? (LO 2.7)	FFA Wildlife Identification Slideshow (LO 2.1)
KT 3: Water Chemistry *HS-LS2-3, HS-LS2-5, HS-LS4-6, HS-ESS2-6*	LO 3.1: Explain the role of aquatic ecosystems in biogeochemical cycles, such as the carbon, nitrogen, and phosphorus cycles. LO 3.2: Identify causes of hypoxia and anoxia in aquatic systems, how these conditions impact the functioning of the ecosystem, and best management practices for prevention and treatment. LO 3.3: Interpret results of water quality monitoring measures (such as dissolved oxygen, turbidity, E. coli counts, pH, nutrient levels, et cetera).	Biogeochemical Cycles (LO 3.1) Hypoxia and Anoxia (LO 3.2) Georgia Adopt a Stream Manual (LO 3.3)	
KT 4: Water Policy and Scientific Literature *HS-LS2-7, HS-LS4-6, HS-ESS3-4*	LO 4.1: Identify biotic and abiotic factors that impact water quality. LO 4.2: Explain how human activities upstream can impact downstream water quality LO 4.3: Outline the various impacts humans have had on New Mexico's aquatic ecosystems historically. LO 4.4: Identify how State and Federal legislation protects water resources. LO 4.5: Identify key stakeholders, agencies, and organizations that oversee water resource protection and management in New Mexico. LO 4.6: Recommend best management practices for improving water quality and enhancing aquatic habitat, such as riparian buffers.	A Living Water Ecosystem Part 4 (LO 4.1) Effects of Human Activities on the Interaction of Ground and Surface (LO 4.2) History: The Politics of Water (LO 4.3) Water Resources & Management (LO 4.4) Water Quality Regulation (LO 4.5) Riparian-Zone Restoration (LO 4.6)	