Education in Action's "Water Rocks" Discover Texas Field Trips
5th Grade Science Curriculum by Strand

Education in Action's "Water Rocks" program takes student scientists to the Cameron Park Zoo to explore the Brazos River Country Exhibit with a focus on the water cycle, wetland ecosystems and environmental conservation. They travel to the Waco Mammoth Site next to explore sedimentary rocks and fossils. Participants continue their day at the Inner Space Cavern in Georgetown or Natural Bridge Caverns in San Antonio, where they actively experience the physical properties of the Earth's crust including minerals, rocks and soils. Program is aligned with 5th grade science TEKS and covers the following:

Subsection 112.7. Science, Grade 5

(a) Introduction.

(1) In Kindergarten through Grade 5 Science, content is organized into recurring strands. The concepts within each grade level build on prior knowledge, prepare students for the next grade level, and establish a foundation for high school courses. In Grade 5, the following concepts will be addressed in each strand.

(D) Earth and space. This strand is focused on identifying recognizable patterns and processes as students learn about Earth's rotation and demonstrate the effects this movement has on Earth's surface, including day and night, shadows, and the rotation of Earth on its axis. Students continue their learning of patterns and processes on Earth while exploring weather, climate, the water cycle, the formation of sedimentary rock and fossil fuels, and the formation of landforms. Finally, students learn ways to manage natural resources to support a healthy environment.

(E) Organisms and environments. This strand focuses on identifying relationships, systems, and cycles within organisms and environments. Students describe the interactions of biotic and abiotic factors in an ecosystem. Students build on their understanding of food webs from Grade 4 by predicting how ecosystem changes affect the flow of energy. Additionally, they describe how humans impact the ecosystem. Students also learn how organisms' structures help them to survive, and they distinguish between instinctual and learned behaviors in animals. This will set the foundation for Grade 6 where students compare and contrast variations within organisms and how they impact survival.

Name of Activity	TEKS Knowledge and Skills
• All	(b) (1) Scientific and engineering practices. The student asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to: (A) ask questions and define problems based on observations or information from text, phenomena, models, or investigations; (4) Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation for society. The student is expected to: (A) explain how scientific discoveries and innovative solutions to problems impact science and society; and (B) research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field to investigate STEM careers. (5) Recurring themes and concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to: (A) identify and use patterns to explain scientific phenomena or to design solutions; (B) identify and investigate cause-and-effect relationships to explain scientific phenomena or analyze problems;

	(D) examine and model the parts of a system and their interdependence in the function of the system; (F) explain the relationship between the structure and function of objects, organisms, and systems; and (G) explain how factors or conditions impact stability and change in objects, organisms, and systems.
• Cavern Tour	(b) (10) Earth and space. The student knows that there are recognizable patterns and processes on Earth. The student is expected to: (A) explain how the Sun and the ocean interact in the water cycle and affect weather; (B) model and describe the processes that led to the formation of sedimentary rocks and fossil fuels; and (C) model and identify how changes to Earth's surface by wind, water, or ice result in the formation of landforms, including deltas, canyons, and sand dunes. (13) Organisms and environments. The student knows that organisms undergo similar life processes and have structures and behaviors that help them survive within their environments. The student is expected to: (A) analyze the structures and functions of different species to identify how organisms survive in the same environment; and (B) explain how instinctual behavioral traits such as turtle hatchlings returning to the sea and learned behavioral traits such as orcas hunting in packs increase chances of survival.
• Mammoth Site	(b) (10) Earth and space. The student knows that there are recognizable patterns and processes on Earth. The student is expected to: (B) model and describe the processes that led to the formation of sedimentary rocks and fossil fuels; and (C) describe a healthy ecosystem and how human activities can be beneficial or harmful to an ecosystem.
• Cameron Park Zoo	(b) (11) Earth and space. The student understands how natural resources are important and can be managed. The student is expected to design and explain solutions such as conservation, recycling, or proper disposal to minimize environmental impact of the use of natural resources. (12) Organisms and environments. The student describes patterns, cycles, systems, and relationships within environments. The student is expected to: (A) observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem; (B) predict how changes in the ecosystem affect the cycling of matter and flow of energy in a food web; and (C) describe a healthy ecosystem and how human activities can be beneficial or harmful to an ecosystem. (13) Organisms and environments. The student knows that organisms undergo similar life processes and have structures and behaviors that help them survive within their environments. The student is expected to: (A) analyze the structures and functions of different species to identify how organisms survive in the same environment; and (B) explain how instinctual behavioral traits such as turtle hatchlings returning to the sea and learned behavioral traits such as orcas hunting in packs increase chances of survival.