Education in Action's "Water Rocks In a Box" – Discover Texas Field Trips
4th and 5th Grade Science and ELAR Curriculum Guide by Strand

Education in Action's "Water Rocks" program takes student scientists virtually 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 research the Waco Mammoth Site to explore sedimentary rocks and fossils. Participants also visit the Inner Space Cavern virtually, where they actively experience the physical properties of the Earth's crust including minerals, rocks and soils. The program is aligned with 4th and 5th grade science and ELAR TEKS and covers the following:

Name of Activity	**TEKS – 4th Grade §112.15 Science Knowledge and Skills**
• Virtual Tour Research Journal • Water Rocks Symbols Matching Game • Cavern Virtual Tour • Zoo Virtual Tour <u>SUMMARY</u> 1 – B 7 – A, B, C 8 – B 9 – A, B 10 – A	(b) Knowledge and skills. (1) Scientific investigation and reasoning. The student conducts classroom and outdoor investigations, following home and school safety procedures and environmentally appropriate and ethical practices. The student is expected to: (B) make informed choices in the use and conservation of natural resources and reusing and recycling of materials such as paper, aluminum, glass, cans, and plastic. (7) Earth and space. The students know that Earth consists of useful resources and its surface is constantly changing. The student is expected to: (A) examine properties of soils, including color and texture, capacity to retain water, and ability to support the growth of plants; (B) observe and identify slow changes to Earth's surface caused by weathering, erosion, and deposition from water, wind, and ice; and (C) identify and classify Earth's renewable resources, including air, plants, water, and animals, and nonrenewable resources, including coal, oil, and natural gas, and the importance of conservation. (8) Earth and space. The student knows that there are recognizable patterns in the natural world and among the Sun, Earth, and Moon system. The student is expected to: (B) describe and illustrate the continuous movement of water above and on the surface of Earth through the water cycle and explain the role of the Sun as a major source of energy in this process; and (9) Organisms and environments. The student knows and understands that living organisms within an ecosystem interact with one another and with their environment. The student is expected to: (A) investigate that most producers need sunlight, water, and carbon dioxide to make their own food, while consumers are dependent on other organisms for food; and (B) describe the flow of energy through food webs, beginning with the Sun, and predict how changes in the ecosystem affect the food web. (10) Organisms and environments. The student knows that organisms undergo similar life processes and have structures and behaviors that help them survive within their environment. The student is expected to: (A) explore how structures and functions enable organisms to survive in their environment;

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	TEKS – 4th Grade §110.6 ELAR Knowledge and Skills
SUMMARY 1 – D 4 5 6 – A, B, C, D, E, F, G, H, I 7 – A, B, C, D, E, F, G	(b) Knowledge and skills. (1) Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking --oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to: (D) work collaboratively with others to develop a plan of shared responsibilities. (4) Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking --fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text. (5) Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking --self-sustained reading. The student reads grade-appropriate texts independently. The student is expected to self-select text and read independently for a sustained period of time. (6) Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to: (A) establish purpose for reading assigned and self-selected texts; (B) generate questions about text before, during, and after reading to deepen understanding and gain information; (C) make and correct or confirm predictions using text features, characteristics of genre, and structures; (D) create mental images to deepen understanding; (E) make connections to personal experiences, ideas in other texts, and society; (F) make inferences and use evidence to support understanding; (G) evaluate details read to determine key ideas; (H) synthesize information to create new understanding; and (I) monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down. (7) Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to: (A) describe personal connections to a variety of sources, including self-selected texts; (B) write responses that demonstrate understanding of texts, including comparing and contrasting ideas across a variety of sources; (C) use text evidence to support an appropriate response; (D) retell, paraphrase, or summarize texts in ways that maintain meaning and logical order; (E) interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating; (F) respond using newly acquired vocabulary as appropriate; and

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SUMMARY 9 – D i, ii, iii 11 – A, B 12 – A, B 13 – A, B, C, D, E, F, G, H	(G) discuss specific ideas in the text that are important to the meaning. (9) Multiple genres: listening, speaking, reading, writing, and thinking using multiple texts--genres. The student recognizes and analyzes genre-specific characteristics, structures, and purposes within and across increasingly complex traditional, contemporary, classical, and diverse texts. The student is expected to: (D) recognize characteristics and structures of informational text, including: (i) the central idea with supporting evidence; (ii) features such as pronunciation guides and diagrams to support understanding; and (iii) organizational patterns such as compare and contrast; (11) Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and uses appropriate conventions. The student is expected to: (A) plan a first draft by selecting a genre for a particular topic, purpose, and audience using a range of strategies such as brainstorming, freewriting, and mapping; (B) develop drafts into a focused, structured, and coherent piece of writing by: (i) organizing with purposeful structure, including an introduction, transitions, and a conclusion; and (ii) developing an engaging idea with relevant details; (12) Composition: listening, speaking, reading, writing, and thinking using multiple texts--genres. The student uses genre characteristics and craft to compose multiple texts that are meaningful. The student is expected to: (A) compose literary texts such as personal narratives and poetry using genre characteristics and craft; (B) compose informational texts, including brief compositions that convey information about a topic, using a clear central idea and genre characteristics and craft; (13) Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to: (A) generate and clarify questions on a topic for formal and informal inquiry; (B) develop and follow a research plan with adult assistance; (C) identify and gather relevant information from a variety of sources; (D) identify primary and secondary sources; (E) demonstrate understanding of information gathered; (F) recognize the difference between paraphrasing and plagiarism when using source materials; (G) develop a bibliography; and (H) use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

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Name of Activity	TEKS – 5th Grade §112.16 Science Knowledge and Skills
• Virtual Tour Research Journal • Water Rocks Symbols Matching Game • Cavern Virtual Tour • Zoo Virtual Tour <u>SUMMARY</u> 1 – B 3 – B 7 – A, B 8 – A, B 9 – A, B, C, D 10 – A, B	(b) Knowledge and skills. (1) Scientific investigation and reasoning. The student conducts classroom and outdoor investigations following home and school safety procedures and environmentally appropriate and ethical practices. The student is expected to: (B) make informed choices in the conservation, disposal, and recycling of materials. (3) Scientific investigation and reasoning. The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to: (B) draw or develop a model that represents how something that cannot be seen such as the Sun, Earth, and Moon system and formation of sedimentary rock works or looks; and (7) Earth and space. The student knows Earth's surface is constantly changing and consists of useful resources. The student is expected to: (A) explore the processes that led to the formation of sedimentary rocks and fossil fuels; and (B) recognize how landforms such as deltas, canyons, and sand dunes are the result of changes to Earth's surface by wind, water, or ice. (8) Earth and space. The student knows that there are recognizable patterns in the natural world and among the Sun, Earth, and Moon system. The student is expected to: (A) differentiate between weather and climate; (B) explain how the Sun and the ocean interact in the water cycle; (9) Organisms and environments. The student knows that there are relationships, systems, and cycles within environments. The student is expected to: (A) observe the way organisms live and survive in their ecosystem by interacting with the living and nonliving components; (B) describe the flow of energy within a food web, including the roles of the Sun, producers, consumers, and decomposers; (C) predict the effects of changes in ecosystems caused by living organisms, including humans, such as the overpopulation of grazers or the building of highways; and (D) identify fossils as evidence of past living organisms and the nature of the environments at the time using models. (10) Organisms and environments. The student knows that organisms have structures and behaviors that help them survive within their environments. The student is expected to: (A) compare the structures and functions of different species that help them live and survive in a specific environment such as hooves on prairie animals or webbed feet in aquatic animals; and

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	(B) differentiate between inherited traits of plants and animals such as spines on a cactus or shape of a beak and learned behaviors such as an animal learning tricks or a child riding a bicycle.
	TEKS – 5th Grade §110.7 ELAR **Knowledge and Skills**
<u>SUMMARY</u> 1 – D 4 5 6 – A, B, C, D, E, F, G, H, I 7 – A, B, C, D, E, F, G	(b) Knowledge and skills. (1) Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking --oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to: (D) work collaboratively with others to develop a plan of shared responsibilities. (4) Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking --fluency. The student reads grade-level text with fluency and comprehension. The student is expected to use appropriate fluency (rate, accuracy, and prosody) when reading grade-level text. (5) Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking --self-sustained reading. The student reads grade-appropriate texts independently. The student is expected to self-select text and read independently for a sustained period of time. (6) Comprehension skills: listening, speaking, reading, writing, and thinking using multiple texts. The student uses metacognitive skills to both develop and deepen comprehension of increasingly complex texts. The student is expected to: (A) establish purpose for reading assigned and self-selected texts; (B) generate questions about text before, during, and after reading to deepen understanding and gain information; (C) make and correct or confirm predictions using text features, characteristics of genre, and structures; (D) create mental images to deepen understanding; (E) make connections to personal experiences, ideas in other texts, and society; (F) make inferences and use evidence to support understanding; (G) evaluate details read to determine key ideas; (H) synthesize information to create new understanding; and (I) monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down. (7) Response skills: listening, speaking, reading, writing, and thinking using multiple texts. The student responds to an increasingly challenging variety of sources that are read, heard, or viewed. The student is expected to: (A) describe personal connections to a variety of sources, including self-selected texts; (B) write responses that demonstrate understanding of texts, including comparing and contrasting ideas across a variety of sources; (C) use text evidence to support an appropriate response; (D) retell, paraphrase, or summarize texts in ways that maintain meaning and logical order;

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SUMMARY 9 – D i, ii, iii 11 – A, B i, ii 12 – A, B 13 – A, B, C, D, E, F, G, H	(E) interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating; (F) respond using newly acquired vocabulary as appropriate; and (G) discuss specific ideas in the text that are important to the meaning. (9) Multiple genres: listening, speaking, reading, writing, and thinking using multiple texts--genres. The student recognizes and analyzes genre-specific characteristics, structures, and purposes within and across increasingly complex traditional, contemporary, classical, and diverse texts. The student is expected to: (D) recognize characteristics and structures of informational text, including: (i) the central idea with supporting evidence; (ii) features such as pronunciation guides and diagrams to support understanding; and (iii) organizational patterns such as compare and contrast; (11) Composition: listening, speaking, reading, writing, and thinking using multiple texts--writing process. The student uses the writing process recursively to compose multiple texts that are legible and uses appropriate conventions. The student is expected to: (A) plan a first draft by selecting a genre for a particular topic, purpose, and audience using a range of strategies such as brainstorming, freewriting, and mapping; (B) develop drafts into a focused, structured, and coherent piece of writing by: (i) organizing with purposeful structure, including an introduction, transitions, and a conclusion; and (ii) developing an engaging idea with relevant details; (12) Composition: listening, speaking, reading, writing, and thinking using multiple texts--genres. The student uses genre characteristics and craft to compose multiple texts that are meaningful. The student is expected to: (A) compose literary texts such as personal narratives and poetry using genre characteristics and craft; (B) compose informational texts, including brief compositions that convey information about a topic, using a clear central idea and genre characteristics and craft; (13) Inquiry and research: listening, speaking, reading, writing, and thinking using multiple texts. The student engages in both short-term and sustained recursive inquiry processes for a variety of purposes. The student is expected to: (A) generate and clarify questions on a topic for formal and informal inquiry; (B) develop and follow a research plan with adult assistance; (C) identify and gather relevant information from a variety of sources; (D) identify primary and secondary sources; (E) demonstrate understanding of information gathered; (F) recognize the difference between paraphrasing and plagiarism when using source materials; (G) develop a bibliography; and (H) use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.