

## STEM in Action: Master TEKS Alignment

### Grade 4

Color Code: **Grade 2** – **Grade K-2** – **Grade 1-2** – **Grade 3** – **Grade 4** – **Grade 5** – **Grade 3-5** – **Grade 6**

#### §112.15. Science, Grade 4, Adopted 2017

(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:

(A) Demonstrate safe practices and the use of safety equipment as described in Texas Education Agency-approved safety standards during classroom and outdoor investigations using safety equipment, including safety goggles or chemical splash goggles, as appropriate, and gloves, as appropriate.

Correlated Lessons:

- STEM in Action, Grade 4: Digital Relay Challenge
- STEM in Action Grade 5: The Great Toy Design Challenge

(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.

Correlated Lessons:

- STEM in Action, Grade 5: Food Deserts Challenge

(2) Scientific investigation and reasoning. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:

(A) Plan and implement descriptive investigations, including asking well defined questions, making inferences, and selecting and using appropriate equipment or technology to answer his/her questions.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 3: Wildlife Corridors Challenge
- STEM in Action Grade 4: Solar House Design Challenge
- STEM in Action, Grade 4: Digital Relay Challenge
- STEM in Action Grade 5: The Great Toy Design Challenge
- STEM in Action, Grade 5: Food Deserts Challenge
- STEM in Action, Grade 5: Rainwater Runoff Design Challenge
- STEM in Action, Grades 3-5: Silly Straw Challenge

(B) Collect and record data by observing and measuring, using the metric system, and using descriptive words and numerals such as labeled drawings, writing, and concept maps.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Farmer Grady's Challenge
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- STEM in Action, Grades 3-5: Silly Straw Challenge

(C) Construct simple tables, charts, bar graphs, and maps using tools and current technology to organize, examine, and evaluate data.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 3: Wildlife Corridors Challenge
- STEM in Action, Grade 4: Digital Relay Challenge
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- STEM in Action Grade 5: The Great Toy Design Challenge

(D) Analyze data and interpret patterns to construct reasonable explanations from data that can be observed and measured.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration

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- STEM in Action, Grade 3: Farmer Grady's Challenge
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 3: Wildlife Corridors Challenge
- STEM in Action, Grade 4: Digital Relay Challenge
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- STEM in Action, Grades 3-5: Silly Straw Challenge

(E) Perform repeated investigations to increase the reliability of results.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
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(F) Communicate valid oral and written results supported by data.

Correlated Lessons:

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- STEM in Action, Grades 3-5: Silly Straw Challenge

(3) Scientific investigation and reasoning. The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:

(A) Analyze, evaluate, and critique scientific explanations by using evidence, logical reasoning, and experimental and observational testing.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Farmer Grady's Challenge
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 3: Wildlife Corridors Challenge
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- STEM in Action, Grades 3-5: Silly Straw Challenge

(B) Represent the natural world using models such as the water cycle and stream tables and identify their limitations, including accuracy and size.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration

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- STEM in Action, Grade 3: Farmer Grady's Challenge
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- STEM in Action, Grades 3-5: Silly Straw Challenge

(C) Connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 4: Digital Relay Challenge
- STEM in Action, Grades 3-5: Silly Straw Challenge

(4) Scientific investigation and reasoning. The student knows how to use a variety of tools, materials, equipment, and models to conduct science inquiry. The student is expected to:

(A) Collect, record, and analyze information using tools, including calculators, microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, mirrors, spring scales, balances, graduated cylinders, beakers, hot plates, meter sticks, magnets, collecting nets, and notebooks; timing devices; and materials to support observation of habitats of organisms such as terrariums and aquariums.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Farmer Grady's Challenge
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
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(5) Matter and energy. The student knows that matter has measurable physical properties and those properties determine how matter is classified, changed, and used. The student is expected to:

(A) Measure, compare, and contrast physical properties of matter, including mass, volume, states (solid, liquid, gas), temperature, magnetism, and the ability to sink or float.

Correlated Lessons:

- STEM in Action, Grade 3: Farmer Grady's Challenge
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action Grade 5: The Great Toy Design Challenge
- STEM in Action, Grade 5: Food Deserts Challenge
- STEM in Action, Grades 3-5: Silly Straw Challenge

(B) Compare and contrast a variety of mixtures, including solutions.

Correlated Lessons:

- STEM in Action Grade 5: The Great Toy Design Challenge
- STEM in Action, Grade 5: Rainwater Runoff Design Challenge

(6) Force, motion, and energy. The student knows that energy exists in many forms and can be observed in cycles, patterns, and systems. The student is expected to:

(A) Differentiate among forms of energy, including mechanical, sound, electrical, light, and thermal.

Correlated Lessons:

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- STEM in Action Grade 4: Solar House Design Challenge

- STEM in Action, Grade 4: Digital Relay Challenge

(B) Differentiate between conductors and insulators of thermal and electrical energy.

Correlated Lessons:

- STEM in Action Grade 4: Solar House Design Challenge

(C) Demonstrate that electricity travels in a closed path, creating an electrical circuit.

Correlated Lessons:

- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge

- STEM in Action, Grade 4: Digital Relay Challenge

(D) Design a descriptive investigation to explore the effect of force on an object such as a push or a pull, gravity, friction, or magnetism.

Correlated Lessons:

- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge

(7) Earth and space. The student knows 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.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration

- STEM in Action, Grade 5: Rainwater Runoff Design Challenge

(B) Observe and identify slow changes to Earth's surface caused by weathering, erosion, and deposition from water, wind, and ice.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration

- STEM in Action, Grade 5: Rainwater Runoff Design Challenge

(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) 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.

Correlated Lessons:

- STEM in Action, Grade 3: Farmer Grady's Challenge

- STEM in Action, Grade 5: Rainwater Runoff Design Challenge

(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.

Correlated Lessons:

- STEM in Action, Grade 5: Food Deserts Challenge

(B) Describe the flow of energy through food webs, beginning with the Sun, and predict how changes in the ecosystem affect the food web.

Correlated Lessons:

- STEM in Action, Grade 5: Food Deserts Challenge

(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.

Correlated Lessons:

- STEM in Action, Grade 3: Wildlife Corridors Challenge

- STEM in Action, Grade 5: Food Deserts Challenge

(B) Explore and describe examples of traits that are inherited from parents to offspring such as eye color and shapes of leaves and behaviors that are learned such as reading a book and a wolf pack teaching their pups to hunt effectively.

Correlated Lessons:

- STEM in Action, Grade 3: Wildlife Corridors Challenge

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#### §110.6. English Language Arts and Reading, Grade 4, Adopted 2017.

(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:

(A) Listen actively, ask relevant questions to clarify information, and make pertinent comments.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 3: Wildlife Corridors Challenge
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(B) Follow, restate, and give oral instructions that involve a series of related sequences of action.

Correlated Lessons:

- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 3: Wildlife Corridors Challenge
- STEM in Action Grade 5: The Great Toy Design Challenge
- STEM in Action, Grade 5: Food Deserts Challenge
- STEM in Action, Grade 5: Rainwater Runoff Design Challenge

(C) Express an opinion supported by accurate information, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 3: Wildlife Corridors Challenge
- STEM in Action, Grade 4: Digital Relay Challenge
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(D) Work collaboratively with others to develop a plan of shared responsibilities.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Farmer Grady's Challenge
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- STEM in Action, Grades 3-5: Silly Straw Challenge

(2) Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--beginning reading and writing. The student develops word structure knowledge through phonological awareness, print concepts, phonics, and morphology to communicate, decode, and spell. The student is expected to:

(C) Write legibly in cursive to complete assignments.

Correlated Lessons:

- STEM in Action, Grade 5: Food Deserts Challenge

(3) Developing and sustaining foundational language skills: listening, speaking, reading, writing, and thinking--vocabulary. The student uses newly acquired vocabulary expressively. The student is expected to:

(B) Use context within and beyond a sentence to determine the relevant meaning of unfamiliar words or multiple-meaning words.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Farmer Grady's Challenge
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge

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(C) Determine the meaning of and use words with affixes such as mis-, sub-, -ment, and -ity/ty and roots such as auto, graph, and meter.

Correlated Lessons:

- STEM in Action Grade 5: The Great Toy Design Challenge

(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.

Correlated Lessons:

- STEM in Action, Grade 5: Food Deserts Challenge

(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.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 3: Wildlife Corridors Challenge
- STEM in Action Grade 5: The Great Toy Design Challenge
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(B) Generate questions about text before, during, and after reading to deepen understanding and gain information.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 3: Wildlife Corridors Challenge
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(C) Make, correct, or confirm predictions using text features, characteristics of genre, and structures.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration

(D) Create mental images to deepen understanding.

Correlated Lessons:

- STEM in Action Grade 5: The Great Toy Design Challenge

(E) Make connections to personal experiences, ideas in other texts, and society.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 3: Wildlife Corridors Challenge

(F) Make inferences and use evidence to support understanding.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Farmer Grady's Challenge
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(G) Evaluate details read to determine key ideas.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration

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(H) Synthesize information to create new understanding.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 3: Wildlife Corridors Challenge

(I) Monitor comprehension and make adjustments such as re-reading, using background knowledge, asking questions, and annotating when understanding breaks down.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
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(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.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 3: Wildlife Corridors Challenge

(C) Use text evidence to support an appropriate response.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Farmer Grady's Challenge
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(D) Retell, paraphrase, or summarize texts in ways that maintain meaning and logical order.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
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(E) Interact with sources in meaningful ways such as notetaking, annotating, freewriting, or illustrating.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration

(F) Respond using newly acquired vocabulary as appropriate.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 3: Wildlife Corridors Challenge

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(G) Discuss specific ideas in the text that are important to the meaning.

Correlated Lessons:

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(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:

(D.i.) The central idea with supporting evidence.

Correlated Lessons:

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(D.ii.) Features such as pronunciation guides and diagrams to support understanding.

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(E) Recognize characteristics and structures of argumentative text by:

(E.ii.) How the author has used facts for an argument.

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(10) Author's purpose and craft: listening, speaking, reading, writing, and thinking using multiple texts. The student uses critical inquiry to analyze the authors' choices and how they influence and communicate meaning within a variety of texts. The student analyzes and applies author's craft purposefully in order to develop his or her own products and performances. The student is expected to:

(C) Analyze the author's use of print and graphic features to achieve specific purposes.

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(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, free writing, and mapping.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Farmer Grady's Challenge
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(B) Develop drafts into a focused, structured, and coherent piece of writing by:

(B.i.) Organizing with purposeful structure, including an introduction, transitions, and a conclusion.

Correlated Lessons:

- STEM in Action Grade 5: The Great Toy Design Challenge
- STEM in Action, Grade 5: Food Deserts Challenge
- STEM in Action, Grades 3-5: Silly Straw Challenge

(B.ii.) Developing an engaging idea with relevant details.

Correlated Lessons:

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- STEM in Action, Grade 3: Farmer Grady's Challenge
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
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- STEM in Action, Grade 5: Food Deserts Challenge

(D) Edit drafts using standard English conventions, including:

(D.i.) Complete simple and compound sentences with subject-verb agreement and avoidance of splices, run-ons, and fragments.

Correlated Lessons:

- STEM in Action Grade 5: The Great Toy Design Challenge

(D.ii.) Past tense of irregular verbs.

Correlated Lessons:

- STEM in Action Grade 5: The Great Toy Design Challenge

(D.iii.) Singular, plural, common, and proper nouns.

Correlated Lessons:

- STEM in Action Grade 5: The Great Toy Design Challenge

(D.iv.) Adjectives, including their comparative and superlative forms.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 3: Wildlife Corridors Challenge
- STEM in Action Grade 5: The Great Toy Design Challenge

(D.v.) Adverbs that convey frequency and adverbs that convey degree.

Correlated Lessons:

- STEM in Action Grade 5: The Great Toy Design Challenge

(D.vi.) Prepositions and prepositional phrases.

Correlated Lessons:

- STEM in Action Grade 5: The Great Toy Design Challenge

(D.vii.) Pronouns, including reflexive.

Correlated Lessons:

- STEM in Action Grade 5: The Great Toy Design Challenge

(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.

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Correlated Lessons:

- STEM in Action Grade 5: The Great Toy Design Challenge

(B) Compose informational texts, including brief compositions that convey information about a topic, using a clear central idea and genre characteristics and craft.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Farmer Grady's Challenge
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(C) Compose argumentative texts, including opinion essays, using genre characteristics and craft.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 3: Wildlife Corridors Challenge
- STEM in Action, Grade 4: Digital Relay Challenge
- STEM in Action Grade 4: Solar House Design Challenge
- STEM in Action Grade 5: The Great Toy Design Challenge
- STEM in Action, Grade 5: Food Deserts Challenge
- STEM in Action, Grade 5: Rainwater Runoff Design Challenge

(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.

Correlated Lessons:

- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 3: Wildlife Corridors Challenge
- STEM in Action, Grade 5: Food Deserts Challenge

(B) Develop and follow a research plan with adult assistance.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 3: Wildlife Corridors Challenge
- STEM in Action Grade 5: The Great Toy Design Challenge
- STEM in Action, Grade 5: Food Deserts Challenge

(C) Identify and gather relevant information from a variety of sources.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 3: Wildlife Corridors Challenge

(E) Demonstrate understanding of information gathered.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 3: Wildlife Corridors Challenge

(H) Use an appropriate mode of delivery, whether written, oral, or multimodal, to present results.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Farmer Grady's Challenge
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 3: Wildlife Corridors Challenge
- STEM in Action, Grade 4: Digital Relay Challenge
- STEM in Action Grade 4: Solar House Design Challenge
- STEM in Action Grade 5: The Great Toy Design Challenge

## STEM in Action: Master TEKS Alignment

### Grade 4

Color Code: **Grade 2** – **Grade K-2** – **Grade 1-2** – **Grade 3** – **Grade 4** – **Grade 5** – **Grade 3-5** – **Grade 6**

#### §111.6. Mathematics, Grade 4, Adopted 2012.

(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

(A) Apply mathematics to problems arising in everyday life, society, and the workplace.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Farmer Grady's Challenge
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action Grade 4: Solar House Design Challenge
- STEM in Action Grade 5: The Great Toy Design Challenge
- STEM in Action, Grade 5: Food Deserts Challenge

(B) Use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Farmer Grady's Challenge
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 3: Wildlife Corridors Challenge
- STEM in Action, Grade 4: Digital Relay Challenge
- STEM in Action Grade 4: Solar House Design Challenge
- STEM in Action Grade 5: The Great Toy Design Challenge
- STEM in Action, Grade 5: Food Deserts Challenge
- STEM in Action, Grade 5: Rainwater Runoff Design Challenge
- STEM in Action, Grades 3-5: Silly Straw Challenge

(C) Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Farmer Grady's Challenge
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 3: Wildlife Corridors Challenge
- STEM in Action, Grade 4: Digital Relay Challenge
- STEM in Action Grade 4: Solar House Design Challenge
- STEM in Action Grade 5: The Great Toy Design Challenge
- STEM in Action, Grade 5: Food Deserts Challenge
- STEM in Action, Grade 5: Rainwater Runoff Design Challenge
- STEM in Action, Grades 3-5: Silly Straw Challenge

(D) Communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Farmer Grady's Challenge
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 5: Food Deserts Challenge

(E) Create and use representations to organize, record, and communicate mathematical ideas.

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Farmer Grady's Challenge
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 5: Food Deserts Challenge

(F) Analyze mathematical relationships to connect and communicate mathematical ideas.

Correlated Lessons:

- STEM in Action, Grade 3: Farmer Grady's Challenge
- STEM in Action, Grade 5: Food Deserts Challenge

(G) Display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

## STEM in Action: Master TEKS Alignment

### Grade 4

Color Code: **Grade 2** – **Grade K-2** – **Grade 1-2** – **Grade 3** – **Grade 4** – **Grade 5** – **Grade 3-5** – **Grade 6**

Correlated Lessons:

- STEM in Action, Grade 2: Shrinking Shore Exploration
- STEM in Action, Grade 3: Farmer Grady's Challenge
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 5: Food Deserts Challenge
- STEM in Action, Grades 3-5: Silly Straw Challenge

(2) Number and operations. The student applies mathematical process standards to represent, compare, and order whole numbers and decimals and understand relationships related to place value. The student is expected to:

(B) Represent the value of the digit in whole numbers through 1,000,000,000 and decimals to the hundredths using expanded notation and numerals.

Correlated Lessons:

- STEM in Action, Grade 4: Digital Relay Challenge
- STEM in Action, Grade 5: Food Deserts Challenge

(3) Number and operations. The student applies mathematical process standards to represent and generate fractions to solve problems. The student is expected to:

(C) Determine if two given fractions are equivalent using a variety of methods.

Correlated Lessons:

- STEM in Action, Grade 3: Wildlife Corridors Challenge
- STEM in Action, Grade 5: The Great Toy Design Challenge

(D) Compare two fractions with different numerators and different denominators and represent the comparison using the symbols  $>$ ,  $=$ , or  $<$ .

Correlated Lessons:

- STEM in Action, Grade 3: Wildlife Corridors Challenge

(4) Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations and decimal sums and differences in order to solve problems with efficiency and accuracy. The student is expected to:

(A) Add and subtract whole numbers and decimals to the hundredths place using the standard algorithm.

Correlated Lessons:

- STEM in Action, Grade 3: Farmer Grady's Challenge
- STEM in Action, Grade 4: Solar House Design Challenge
- STEM in Action, Grade 5: Food Deserts Challenge

(B) Determine products of a number and 10 or 100 using properties of operations and place value understandings.

Correlated Lessons:

- STEM in Action, Grade 3: Farmer Grady's Challenge
- STEM in Action, Grade 5: Food Deserts Challenge

(C) Represent the product of 2 two-digit numbers using arrays, area models, or equations, including perfect squares through 15 by 15.

Correlated Lessons:

- STEM in Action, Grade 3: Farmer Grady's Challenge
- STEM in Action, Grade 4: Digital Relay Challenge
- STEM in Action, Grade 4: Solar House Design Challenge
- STEM in Action, Grade 5: Rainwater Runoff Design Challenge

(D) Use strategies and algorithms, including the standard algorithm, to multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties.

Correlated Lessons:

- STEM in Action, Grade 3: Farmer Grady's Challenge
- STEM in Action, Grade 4: Digital Relay Challenge
- STEM in Action, Grade 4: Solar House Design Challenge
- STEM in Action, Grade 5: Rainwater Runoff Design Challenge

(E) Represent the quotient of up to a four-digit whole number divided by a one-digit whole number using arrays, area models, or equations.

Correlated Lessons:

- STEM in Action, Grade 4: Solar House Design Challenge
- STEM in Action, Grade 4: Digital Relay Challenge

(F) Use strategies and algorithms, including the standard algorithm, to divide up to a four-digit dividend by a one-digit divisor.

Correlated Lessons:

- STEM in Action, Grade 4: Solar House Design Challenge

## STEM in Action: Master TEKS Alignment

### Grade 4

Color Code: **Grade 2** – **Grade K-2** – **Grade 1-2** – **Grade 3** – **Grade 4** – **Grade 5** – **Grade 3-5** – **Grade 6**

- STEM in Action, Grade 4: Digital Relay Challenge

(G) Round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers.

Correlated Lessons:

- STEM in Action, Grade 5: Food Deserts Challenge

(H) Solve with fluency one- and two-step problems involving multiplication and division, including interpreting remainders.

Correlated Lessons:

- STEM in Action, Grade 3: Farmer Grady's Challenge
- STEM in Action, Grade 3: Wildlife Corridors Challenge
- STEM in Action, Grade 4: Solar House Design Challenge
- STEM in Action, Grade 5: Rainwater Runoff Design Challenge

(5) Algebraic reasoning. The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to:

(D) Solve problems related to perimeter and area of rectangles where dimensions are whole numbers.

Correlated Lessons:

- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 4: Solar House Design Challenge
- STEM in Action, Grade 5: Rainwater Runoff Design Challenge

(8) Geometry and measurement. The student applies mathematical process standards to select appropriate customary and metric units, strategies, and tools to solve problems involving measurement. The student is expected to:

(A) Identify relative sizes of measurement units within the customary and metric systems.

Correlated Lessons:

- STEM in Action, Grade 5: Rainwater Runoff Design Challenge

(B) Convert measurements within the same measurement system, customary or metric, from a smaller unit into a larger unit or a larger unit into a smaller unit when given other equivalent measures represented in a table.

Correlated Lessons:

- STEM in Action, Grade 5: Rainwater Runoff Design Challenge

(C) Solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, or division as appropriate.

Correlated Lessons:

- STEM in Action, Grade 3: Farmer Grady's Challenge
- STEM in Action, Grade 3: Squeaky Clean Magnets Challenge
- STEM in Action, Grade 5: Food Deserts Challenge

(10) Personal financial literacy. The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:

(D) Describe how to allocate a weekly allowance among spending; saving, including for college; and sharing.

Correlated Lessons:

- STEM in Action, Grade 3: Farmer Grady's Challenge