

## STEM in Action: Master TEKS Alignment

### Grade 6

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

#### §112.18. Science, Grade 6, Adopted 2017

(1) Scientific investigation and reasoning. The student, for at least 40% of instructional time, conducts laboratory and field investigations following safety procedures and environmentally appropriate and ethical practices. The student is expected to:

(A) Demonstrate safe practices during laboratory and field investigations as outlined in Texas Education Agency-approved safety standards.

Correlated Lessons:

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

(B) Practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials.

Correlated Lessons:

- STEM in Action, Grade 5: Food Deserts Challenge

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

(A) Plan and implement comparative and descriptive investigations by making observations, asking well defined questions, and using appropriate equipment and technology.

Correlated Lessons:

- 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) Design and implement experimental investigations by making observations, asking well defined questions, formulating testable hypotheses, and using appropriate equipment and technology.

Correlated Lessons:

- 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) Collect and record data using the International System of Units (SI), and qualitative means such as labeled drawings, writing, and graphic organizers.

Correlated Lessons:

- 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) Construct tables and graphs, using repeated trials and means, to organize data and identify patterns.

Correlated Lessons:

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

(E) Analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.

Correlated Lessons:

- 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

(3) Scientific investigation and reasoning. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists. The student is expected to:

(A) Analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.

Correlated Lessons:

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

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

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

(B) Use models to represent aspects of the natural world such as a model of Earth's layers.

Correlated Lessons:

- 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) Identify advantages and limitations of models such as size, scale, properties, and materials.

Correlated Lessons:

- 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) Relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content.

Correlated Lessons:

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

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

(A) Use appropriate tools, including journals/notebooks, beakers, Petri dishes, meter sticks, graduated cylinders, hot plates, test tubes, balances, microscopes, thermometers, calculators, computers, timing devices, and other necessary equipment to collect, record, and analyze information.

Correlated Lessons:

- 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) Use preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.

Correlated Lessons:

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

(5) Matter and energy. The student knows the differences between elements and compounds. The student is expected to:

(C) Identify the formation of a new substance by using the evidence of a possible chemical change such as production of a gas, change in temperature, production of a precipitate, or color change.

Correlated Lessons:

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

(12) Organisms and environments. The student knows all organisms are classified into domains and kingdoms. Organisms within these taxonomic groups share similar characteristics that allow them to interact with the living and nonliving parts of their ecosystem. The student is expected to:

(D) Identify the basic characteristics of organisms, including prokaryotic or eukaryotic, unicellular or multicellular, autotrophic or heterotrophic, and mode of reproduction, that further classify them in the currently recognized kingdoms.

Correlated Lessons:

- STEM in Action, Grade 5: Food Deserts Challenge

(F) Diagram the levels of organization within an ecosystem, including organism, population, community, and ecosystem.

Correlated Lessons:

- STEM in Action, Grade 5: Food Deserts Challenge

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#### §110.22. English Language Arts and Reading, Grade 6, 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 to interpret a message, ask clarifying questions, and respond appropriately.

Correlated Lessons:

- 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

(B) Follow and give oral instructions that include multiple action steps.

Correlated Lessons:

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

(D) Participate in student-led discussions by eliciting and considering suggestions from other group members, taking notes, and identifying points of agreement and disagreement.

Correlated Lessons:

- 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

(2) 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 such as definition, analogy, and examples to clarify the meaning of words.

Correlated Lessons:

- 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) Determine the meaning and usage of grade-level academic English words derived from Greek and Latin roots such as mis/mit, bene, man, vac, scribe/script, and jur/jus.

Correlated Lessons:

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

(4) 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

(5) 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 5: The Great Toy Design Challenge
- STEM in Action, Grade 5: Food Deserts Challenge

(B) Generate questions about text before, during, and after reading to deepen understanding and gain information.

Correlated Lessons:

- 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

(D) Create mental images to deepen understanding.

Correlated Lessons:

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

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

Correlated Lessons:

- 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

(G) Evaluate details read to determine key ideas.

Correlated Lessons:

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

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

(6) 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:

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

Correlated Lessons:

- STEM in Action Grade 5: The Great Toy Design Challenge
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(D) Paraphrase and summarize texts in ways that maintain meaning and logical order.

Correlated Lessons:

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

(F) Respond using newly acquired vocabulary as appropriate.

Correlated Lessons:

- STEM in Action Grade 5: The Great Toy Design Challenge
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(8) 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) Analyze characteristics and structural elements of informational text, including:

(D.i.) The controlling idea or thesis with supporting evidence.

Correlated Lessons:

- STEM in Action Grade 5: The Great Toy Design Challenge
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(D.ii.) Features such as introduction, foreword, preface, references, or acknowledgements to gain background information.

Correlated Lessons:

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

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

(E.ii.) Explaining how the author uses various types of evidence to support the argument.

Correlated Lessons:

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

(9) 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.

Correlated Lessons:

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

(G) Explain the differences between rhetorical devices and logical fallacies.

Correlated Lessons:

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

(10) 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 appropriate for a particular topic, purpose, and audience using a range of strategies such as discussion, background reading, and personal interests.

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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, coherence within and across paragraphs, and a conclusion.

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(B.ii.) Developing an engaging idea reflecting depth of thought with specific facts and details.

Correlated Lessons:

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

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

(D.i.) Complete complex 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.) Consistent, appropriate use of verb tenses.

Correlated Lessons:

- STEM in Action, Grade 5: Food Deserts Challenge

(D.iv.) Prepositions and prepositional phrases and their influence on subject-verb agreement.

Correlated Lessons:

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

(D.vi.) Subordinating conjunctions to form complex sentences and correlative conjunctions such as either/or and neither/nor.

Correlated Lessons:

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

(11) 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, fiction, and poetry using genre characteristics and craft.

Correlated Lessons:

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

(B) Compose informational texts, including multi-paragraph essays that convey information about a topic, using a clear controlling idea or thesis statement and genre characteristics and craft.

Correlated Lessons:

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

(C) Compose multi-paragraph argumentative texts using genre characteristics and craft.

Correlated Lessons:

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

(D) Compose correspondence that reflects an opinion, registers a complaint, or requests information in a business or friendly structure.

Correlated Lessons:

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

(12) 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:

(B) Develop and revise a plan.

Correlated Lessons:

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

(C) Refine the major research question, if necessary, guided by the answers to a secondary set of questions.

Correlated Lessons:

- STEM in Action, Grade 5: Food Deserts Challenge

(H) Examine sources for:

(H.ii.) Faulty reasoning such as hyperbole, emotional appeals, and stereotype.

Correlated Lessons:

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

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

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#### §111.26. Mathematics, Grade 6, 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 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 5: The Great Toy Design Challenge
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(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 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 5: Food Deserts Challenge

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

Correlated Lessons:

- STEM in Action, Grade 5: Food Deserts Challenge

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

Correlated Lessons:

- 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.

Correlated Lessons:

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

(3) Number and operations. The student applies mathematical process standards to represent addition, subtraction, multiplication, and division while solving problems and justifying solutions. The student is expected to:

(B) Determine, with and without computation, whether a quantity is increased or decreased when multiplied by a fraction, including values greater than or less than one.

Correlated Lessons:

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

(E) Multiply and divide positive rational numbers fluently.

Correlated Lessons:

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

(4) Proportionality. The student applies mathematical process standards to develop an understanding of proportional relationships in problem situations. The student is expected to:

(C) Give examples of ratios as multiplicative comparisons of two quantities describing the same attribute.

Correlated Lessons:

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

(E) Represent ratios and percents with concrete models, fractions, and decimals.

Correlated Lessons:

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

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(H) Convert units within a measurement system, including the use of proportions and unit rates.

Correlated Lessons:

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

(5) Proportionality. The student applies mathematical process standards to solve problems involving proportional relationships. The student is expected to:

(A) Represent mathematical and real-world problems involving ratios and rates using scale factors, tables, graphs, and proportions.

Correlated Lessons:

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

(8) Expressions, equations, and relationships. The student applies mathematical process standards to use geometry to represent relationships and solve problems. The student is expected to:

(C) Write equations that represent problems related to the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers.

Correlated Lessons:

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

(D) Determine solutions for problems involving the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers.

Correlated Lessons:

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

(12) Measurement and data. The student applies mathematical process standards to use numerical or graphical representations to analyze problems. The student is expected to:

(A) Represent numeric data graphically, including dot plots, stem-and-leaf plots, histograms, and box plots.

Correlated Lessons:

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

(13) Measurement and data. The student applies mathematical process standards to use numerical or graphical representations to solve problems. The student is expected to:

(A) Interpret numeric data summarized in dot plots, stem-and-leaf plots, histograms, and box plots.

Correlated Lessons:

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