About STEM-Smart

STEM-Smart “NGSS Review-Prep-Practice” is a set of online products designed to help students prepare for the science tests administered by states each year. The content reviews and practice test items are based on the Next Generation Science Standards (NGSS). The practice test items in the reviews feature immediate feedback for students, opportunities to go back to answer practice questions until they get them right, and a report (How did I do?) based on their first response to the items. With a simple click or touch of a screen, teachers can generate practice online tests with items representative of previous typical state exams. Students’ responses to test items are scored and stored automatically so that teachers can track individual student and whole class performance.

Easy to Use

Teachers have total control of student access to STEM-Smart and what science content students get to review. Individually assigned usernames and passwords allow students to access only those reviews opened by the teacher. This is done by simply highlighting and clicking on reviews listed in the table of contents for each science unit on a teacher dashboard. Any kind of smartboard can be used to demonstrate access and operation of STEM-Smart as a whole class activity, but the real power of STEM-Smart is to have students work on the reviews and practice items individually or in teams, in class or out of class, to maximize the benefit of STEM-Smart’s interactivity and immediate feedback.

Two final features: STEM-Smart can be read in English or Spanish with the simple click of the EN or SP language buttons. And struggling readers and those requiring accommodations can have everything read to them with the click of the Voice-over icon embedded in the STEM-Smart reviews!

For NGSS States!

STEM-Smart NGSS Review-Prep-Practice is designed to align to the Next Generation Science Standards. The science content and questions in the reviews are intended to give students that extra boost in confidence to do their best on the required state tests. The tables on the following pages show the alignment of the NGSS and suggested 5th grade, 8th grade and Biology STEM-Smart reviews.
<table>
<thead>
<tr>
<th>Category</th>
<th>Suggested Reviews</th>
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</table>
| **Unit 1: Nature of Science** | **Review 1: Practices of Science**  
**Review 2: Scientific Investigations**  
**Review 3: Measurement & Analysis**  
**Review 4: Claims, Evidence & Reasoning**  
**Review 5: Let’s argue about it!** |
| Analyzing data; Collecting & organizing data; Defining a testable problem; Importance of a control group; Distinguishing between observations and opinions; Importance of observations; Importance of repeated trials; Importance of replication | **Review 1: Our solar system**  
**Review 2: Space and the universe**  
**Review 3: Energy from the Sun.**  
**Review 4: Natural Resources**  
**Review 5: Rock Cycle**  
**Review 6: Weathering and Erosion**  
**Review 7: Water – Solid, Liquid, or Gas**  
**Review 8: Water Cycles!**  
**Review 9: How Weather Works** |
| **Unit 2: Earth & Space Science** | **Review 1: Different matter forms**  
**Review 2: Temperature matters**  
**Review 3: When matter is mixed**  
**Review 4: Physical and chemical changes**  
**Review 5: What is energy anyway?**  
**Review 6: Two basic forms of energy**  
**Review 7: All kinds of energy**  
**Review 8: Balanced forces are boring**  
**Review 9: Net forces make things happen**  
**Review 10: How much force is needed?**  
**Review 11: Electric circuits are simple**  
**Review 12: Don’t mess with electricity** |
<p>| Earth’s revolutions; Earth’s rotation; Classifying rocks; Mineral properties; Streak color; Renewable vs nonrenewable resources; Weathering-water; Components of a galaxy, Start brightness and distance; Distinguishing between the Sun and planets; Earth’s position; Planer characteristics; Roles of the ocean; Water cycle; Evaporation; Climate zone-polar; Weather-humidity | |</p>
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<tr>
<th>Unit 1: Nature of Science</th>
<th>Suggested Reviews</th>
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<tr>
<td>Evaluating new evidence; Logical reasoning; Comparing methods and results; Models; Using technology; Scientific theory; Controlling experimental variables; Defending conclusions; Evaluating a procedure; Making predictions; Outcome variables</td>
<td>Review 1: Science is systematic&lt;br&gt;Review 2: Best explanation&lt;br&gt;Review 3: Science theories and laws</td>
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<tr>
<th>Unit 2: Earth &amp; Space Science</th>
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<td>Differentiating between weather and climate; Weather patterns; Heat transfer—convection; Chemical weathering; Rock cycle; Law of superposition; Earthquakes; Mountain building; Relative distance; Properties of the Sun; Planetary motion; Properties of planets; Solar system models; Eclipses; Moon phases</td>
<td>Review 1: Weather &amp; climate—Not the same&lt;br&gt;Review 2: How heat energy moves&lt;br&gt;Review 3: Dynamic Earth&lt;br&gt;Review 4: Rock cycle&lt;br&gt;Review 5: The universe and us&lt;br&gt;Review 6: Properties of the sun&lt;br&gt;Review 7: Phases of the moon</td>
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<th>Unit 3: Physical Science</th>
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<td>Friction; Gravitational force; Analyzing position-time graphs; Unbalanced forces; Electromagnetic spectrum; Sound waves Convert potential energy to kinetic energy; Energy transformations; Heat and phase changes; Heat flow; Magnetic properties; Atomic theory; Compounds; pH; Distinguishing between physical and chemical changes</td>
<td>Review 1: What is matter?&lt;br&gt;Review 2: Mass and weight—not the same&lt;br&gt;Review 3: Heating and cooling&lt;br&gt;Review 4: Is it moving or not?&lt;br&gt;Review 5: It takes a force&lt;br&gt;Review 6: Gravity in action&lt;br&gt;Review 7: Magnets not magic&lt;br&gt;Review 8: Energy and its forms&lt;br&gt;Review 9: Sound energy&lt;br&gt;Review 10: Light energy&lt;br&gt;Review 11: How light behaves</td>
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<th>Unit 4: Life Science</th>
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<td>Structural organization; Cellular processes—elimination of waste; Cell Wall; Nervous system; Reproductive system; Classification of organisms; Theory of evolution-fossil evidence; Theory of evolution-genetic; variation; Chromosomes; Genotypes; Comparing relationships; Food webs; Limiting factor; shelter, nesting sites and/or space; Carbon cycle; Photosynthesis—products</td>
<td>Review 1: Cellular life&lt;br&gt;Review 2: Body systems&lt;br&gt;Review 3: Inherited traits&lt;br&gt;Review 4: Predicting traits&lt;br&gt;Review 5: Heredity&lt;br&gt;Review 6: DNA and heredity&lt;br&gt;Review 7: Selection&lt;br&gt;Review 8: Natural selection&lt;br&gt;Review 9: Adaptation&lt;br&gt;Review 10: Life evolves</td>
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<tr>
<td>NGSS and STEM-Smart NGSS-Biology Review-Prep-Practice Alignment</td>
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<td><strong>Molecular and Cellular Biology</strong></td>
<td><strong>Suggested Reviews</strong></td>
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| Cell structures and functions; Cellular processes; Organs and organ systems | Review 1: How do cells work?  
Review 2: What do cells do?  
Review 3: What makes a cell a cell?  
Review 4: What’s up with organ systems?  
Review 5: How do organ systems work?  
Review 6: Building bodies |

| **Classification, Heredity, and Evolution**                    | **Suggested Reviews**                             |
| Evolution is the unifying idea of biology; Classification of organisms; Natural Selection; DNA transmits genetic information from one generation to another; DNA may be analyzed and manipulated; | Review 1: What’s up with this evolution stuff?  
Review 2: DNA transmits information  
Review 3: How mutations happen  
Review 4: Selection happens  
Review 5: Understanding evolution  
Review 6: How does evolution work?  
Review 7: Advantages and disadvantages?  
Review 8: What makes living things unique?  
Review 9: What are adaptations?  
Review 10: Endless adaptations |

| **Organisms, Populations, and Ecosystems**                     | **Suggested Reviews**                             |
| Distribution and abundance of organisms is determined by interactions between living and nonliving environment; Energy flow within ecosystems; Human and natural influences on populations, biodiversity, and ecological processes. | Review 1: Life starts with the sun  
Review 2: Living things depend on plants  
Review 3: How energy flows in living things  
Review 4: How humans fit into natural systems  
Review 5: Humans using natural resources. |