

A Correlation of
Interactive Science
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to the
West Virginia Criteria
for Kindergarten Science

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PUBLISHER:	Pearson Education Inc., publishing as Scott Foresman		
SUBJECT:	Science	SPECIFIC GRADE:	Kindergarten
COURSE:	Science - 6000 - Kindergarten Science	TITLE	Pearson Interactive Science
COPYRIGHT:	2016		
SE ISBN:	9780328872145	TE ISBN:	9780328871421

NON-NEGOTIABLE EVALUATION CRITERIA

**2016-2022
Group IV – Science
Kindergarten**

Equity, Accessibility and Format				
Yes	No	N/A	CRITERIA	NOTES
			<p>1. INTER-ETHNIC The instructional materials meets the requirements of inter-ethnic: concepts, content and illustrations, as set by WV Board of Education Policy (Adopted December 1970).</p>	<p>Photographs and illustrations throughout the Pearson Interactive Science student edition text show people of a variety of ages and ethnicities participating in everyday and science-related activities. The Untamed Science video feature (www.PearsonRealize.com) follows a diverse group of young scientists around the globe in search of answers to the big questions of science. School-to-Home Letters communicating the material that will be studied in each chapter are available in English and Spanish. Sample references include:</p> <p>SE Only: Photographs: 1, 15, 19, 37, 59, 62, 64, 76-80, 82-85, 96-98, 100 Illustrations: 18, 44, 45, 60, Activity 64, Activity 77, Activity 80, 81, Activity 85, Activity 96, Activity 98, 99</p> <p>TE Only: School-to-Home Letter: xxxiv-xxxv, 6-7, 38-39, 76-77, 114-115</p> <p>Online: Untamed Science Videos: “Is That a Magnet on Your Fridge?”, “Living or Nonliving”</p>

			<p>2. EQUAL OPPORTUNITY The instructional material meets the requirements of equal opportunity: concepts, content, illustration, heritage, roles contributions, experiences and achievements of males and females in American and other cultures, as set by WV Board of Education Policy (Adopted May 1975).</p>	<p>Biography pages, Science Career pages, and content (including photographs) embedded throughout Pearson Interactive Science text highlight the contributions of specific people of varying genders and cultures to science. Sample references include: SE Only: 40, 76, 82, 100</p>
			<p>3. FORMAT This resource is available as an option for adoption in an interactive electronic format.</p>	<p>Pearson Interactive Science ©2016 focuses on an implementation of Problem-Based Learning, STEM, Performance Expectation activities, and support for new standards while transitioning to a brand-new digital platform, Realize (www.PearsonRealize.com). The Realize platform provides classrooms with engagement in the program’s digital assets, flexibility in terms of re-organizing chapters and uploading custom content, search functionality, and reporting of assessments. This transition will also provide greater access on various devices.</p>
			<p>4. BIAS The instructional material is free of political bias.</p>	<p>The Pearson Interactive Science program is free of political bias. Part 1 of the Skills Handbook, “The Nature of Science”, introduces the concepts of scientific inquiry and the scientific method.</p>
			<p>5. INQUIRY This resource must include rigorous and developmentally appropriate active inquiry, investigations, and hands-on activities.</p>	<p>Inquiry activities are included for each section (Try It!) and chapter (Investigate It! or Design It!) of the Interactive Science program. Investigate It! activities include directed, guided, and open-inquiry options. Additionally, a STEM Activity in each chapter requires students to use mathematical thinking, design thinking, hands-on experimenting, and modeling to solve problems.</p>
			<p>6. SAFETY This resource must include explicit guidance for demonstrating the safe and proper techniques for handling, manipulating and caring for developmentally appropriate science materials and treating living organisms humanely.</p>	<p>Part 1, Lesson 6: How do you stay safe? and its associated activity page explicitly address safety rules for performing scientific investigations. The “Being Safe With Science” Untamed Science Video shows students demonstrating the use of protective clothing and equipment when conducting an experiment.</p>

GENERAL EVALUATION CRITERIA

2016-2022 Group IV – Science Kindergarten

The general evaluation criteria apply to each grade level and are to be evaluated for each grade level unless otherwise specified. These criteria consist of information critical to the development of all grade levels. In reading the general evaluation criteria and subsequent specific grade level criteria, **e.g. means “examples of” and i.e. means that “each of” those items must be addressed.** Eighty percent of the general and eighty percent of the specific criteria must be met with I (in-depth) or A (adequate) in order to be recommended.

(Vendor/Publisher) SPECIFIC LOCATION OF CONTENT WITHIN PRODUCTS	(IMR Committee) Responses				
	I=In-depth, A=Adequate, M=Minimal, N=Nonexistent	I	A	M	N
	<i>In addition to alignment of Content Standards and Objectives (CSOs), materials must also clearly connect to Learning for the 21st Century which includes opportunities for students to develop:</i>				
Next Generation Skills:					
Thinking and Problem-Solving Skills Science Content:					
SE Only: STEM Activity: 10-12, 31, 52, 73, 94 Investigate It!: 18, 39, 60, 81, 99 TE Only: STEM Activity: 12-15, 44-47, 82-85, 120-123, 156-159 Investigate It!: 24, 60, 98, 136, 166	1. provides opportunities for student collaboration.				
SE Only: STEM Activity: 4-9, 23-30, 44-51, 65-72, 86-92 TE Only: STEM Activity: 12-15, 44-47, 82-85, 120-123, 156-159	2. requires students to investigate and discover multiple solutions through inquiry.				

<p>TE Only: 21st Century Learning: 81, 92 Performance Expectation Activity: 71a, 71b, 71c, 109b, 109e</p>	<p>3. includes options for using technology tools to gather information, make informed decisions and justify solutions.</p>						
<p>SE Only: STEM Activity: 4-13, 23-32, 44-53, 65-74, 86-95 TE Only: STEM Activity: 12-15, 44-47, 82-85, 120-123, 156-159 21st Century Learning: 81, 92, 155 Performance-Based Assessment: 175 Performance Expectation Activity: 109b, 109d, 109e Online: Quest Activity: Weather and Seasons of the World – TE Only: xxxvi-xxxvii</p>	<p>4. engages students in critical thinking and the synthesis of information to analyze real-world problems.</p>						
<p>SE Only: STEM Activity: 4-13, 23-32, 44-53, 65-74, 86-95 TE Only: STEM Activity: 12-15, 44-47, 82-85, 120-123, 156-159 Performance-Based Assessment: 33, 107 Performance Expectation Activity: 33a-33b, 71a-71c, 109a-109e Online: Quest Activity: Weather and Seasons of the World – TE Only: xxxvi-xxxvii</p>	<p>5. offers activities to connect multiple scientific phenomena to real-world events.</p>						

Information and Communication Skills

For student mastery of content standards and objectives, the instructional materials will include multiple strategies that provide students with opportunities to:

<p>TE Only: 21st Century Learning: xx, 81, 92, 96</p>	<p>6. interact with secure external multimedia resources for local and global collaboration.</p>						
<p>TE Only: 21st Century Learning: 54, 58, 92, 96 Performance Expectation Activity: 33b, 71a, 71b, 109b, 109c</p>	<p>7. develop conceptual understanding and research skills.</p>						
<p>At the Kindergarten level, the Activity pages in the write-in student edition give opportunities for students to communicate thoughts and ideas verbally or through drawing, coloring, and circling/crossing out. For examples, please see SE Only: Activity 16, Activity 19, Activity 22, Activity 36, Activity 42, Activity 55, Activity 62, Activity 78, Activity 97 TE Only: Performance-Based Assessment: 33, 69, 107, 175 21st Century Learning: 20, 81, 92, 119, 155 Performance Expectation Activity: 33a-33b, 71a-71c, 109a-109e Online: Quest Activity: Weather and Seasons of the World – TE Only: xxxvi-xxxvii</p>	<p>8. articulate thoughts and ideas through oral, written, and multimedia communications.</p>						

Personal and Workplace Productivity Skills

For students mastery of content standards and objectives, the instructional materials will provide students with opportunities to:

<p>SE Only: STEM Activity: 10-12, 31, 52, 73 Investigate It!: 18, 39, 60, 81, 99</p> <p>TE Only: STEM Activity: 12-13, 44-45, 82-83, 120-121, 156-157 Investigate It!: 24, 60, 98, 136, 166 21st Century Learning: 20, 54, 58, 81, 92, 96, 119, 155 Performance Expectation Activity: 33a-33b, 71a-71c, 109a-109e</p>	<p>9. use interpersonal skills to work cooperatively to accomplish a task.</p>						
<p>SE Only: STEM Activity: 4-9, 23-30, 44-51, 65-72, 86-92</p> <p>TE Only: STEM Activity: 12-13, 44-45, 82-83, 120-121, 156-157 Investigate It!: 29, 65, 103, 141, 171</p>	<p>10. develop and initiate a plan of action to complete a task or project.</p>						
<p>TE Only: Performance Expectation Activity: 33a-33b, 71a-71c, 109a-109e</p>	<p>11. practice time- and project-management skills</p>						
<p>SE Only: STEM Activity: 13, 32, 53, 74, 95</p> <p>TE Only: STEM Activity: 12-13, 44-45, 82-83, 120-121, 156-157</p>	<p>12. reflect upon and evaluate the results of a task or project.</p>						

<p>SE Only: STEM Activity: 4-13, 23-32, 44-53, 65-74, 86-95 Investigate It!: 18, 39, 60, 81, 99</p> <p>TE Only: STEM Activity: 12-15, 44-47, 82-85, 120-123, 156-159 Investigate It!: 24, 60, 98, 136, 166 Performance Expectation Activity: 33a-33b, 71a-71c, 109a-109e</p>	<p>13. assume various roles and responsibilities when working independently or as a group.</p>							
<p>SE Only: NASA Careers: 40 Science Careers: 19, 82</p> <p>TE Only: NASA Careers: 61 Science Careers: 25, 137</p>	<p>14. explore science-related careers.</p>							
<p>TE Only: 21st Century Learning: 54, 58, 92, 96 Performance Expectation Activity: 33b, 71a, 71b, 109b, 109c</p>	<p>15. conduct research, validate sources, and report findings ethically.</p>							
<p>TE Only: Activity Card Support: 28-29, 64-65, 102-103 Performance Expectation Activity: 33a-33b, 71a-71c, 109a-109e</p> <p>Online: Quest Activity: Weather and Seasons of the World – TE Only: xxxvi-xxxvii</p>	<p>16. provide learning experiences for students to demonstrate mastery through multiple efforts.</p>							

Developmentally Appropriate Instructional Resources and Strategies

For student mastery of content standards and objectives, the instructional materials:

For each Kindergarten chapter, the Interactive Science program contains two Leveled Content Readers (On-Level and Advanced) with foldout prompts and activities to coach students at their reading level.

In addition, the Teacher's Edition provides strategies for supporting English Language Learners, suggestions for Response to Intervention (RTI), and guidelines for differentiating instruction for extra support or for on-level and advanced learners. Sample references include

TE Only:

Leveled Content Reader

Support: 7A-7B, 39A-39B, 77A-77B, 115A-115B, 151A-151B

ELL Support: 3, 17, 43, 51, 53, 55, 73, 91, 93, 111, 131, 135

Differentiated Instruction: 16, 18, 19, 22, 50, 56, 88, 128, 134, 160, 164

RTI: 16, 18, 52, 86, 88, 126, 128, 134, 160, 164

17. include multiple research-based strategies for differentiation, intervention and enrichment to support all learners.

<p>The 2016 edition of Interactive Science was developed to support the Next Generation Science Standards, which are designed to prepare students for college, career, and citizenship. As such, the Teacher’s Edition includes guidance for incorporating the relevant Cross-Cutting Concepts and Science and Engineering Practices from the NGSS at the beginning of each Chapter, and provides activities to address specific NGSS Performance Expectations at the end of each unit.</p> <p>TE Only: CCC: 8, 40, 78, 116, 152 SEP: 9, 41, 79, 117, 153 Performance Expectation Activity: 33a-33b, 71a-71c, 109a-109e</p>	<p>18. support college and career readiness.</p>						
<p>The Interactive Science program supports multiple learning modalities through its Reading, Inquiry, and Digital Paths.</p> <p>Reading Path</p> <ul style="list-style-type: none"> • Target Reading Skills, continual vocabulary support, and graphic organizers help students develop critical reading skills and strategies to uncover meaning when they read. • Core content in the Write-in Student Editions as well as on- and advanced-Level Readers with built-in ELL support give students tools to become successful readers. 	<p>19. provide multiple opportunities for incorporating various learning modalities.</p>						

<p>(continued) Inquiry Path</p> <ul style="list-style-type: none"> • ABCs of Inquiry—Activity Before Concept activities in the Write-in Student Edition engage students and set a purpose for reading. • Scaffolded inquiry activities consist of directed, guided, and open inquiry options to allow students to move from teacher-directed to student-centered hands-on experiences. <p>Digital Path</p> <ul style="list-style-type: none"> • Interactive Science goes digital at PearsonRealize.com. Engage students in today's digital world with exciting resources. • PearsonRealize.com can be used for teacher-led instruction from a single computer or a tablet, with an interactive whiteboard, or by students working at their own pace at school or at home. 	<p>(continued)</p> <p>19. provide multiple opportunities for incorporating various learning modalities.</p>					
<p>SE Only: Try It!: 2, 21, 42, 63, 84 Investigate It!: 18, 39, 60, 81, 99</p> <p>TE Only: Try It!: 10, 42, 80, 118, 154 Investigate It!: 24, 60, 98, 136, 166</p>	<p>20. cultivate investigative abilities leading to logical conclusions.</p>					

<p>TE Only: Vocabulary Smart Cards: 6-7, 11, 16, 18, 20, 38-39, 43, 48, 50, 52, 54, 76-77, 81, 86, 90, 92, 94, 96, 114-115, 119, 124, 126, 132, 134, 150-151, 155, 160, 162, 164</p>	<p>21. incorporate authentic vocabulary acquisition.</p>						
<p>For each hands-on investigation in the Interactive Science program, safety rules and precautions specific to the activities involved are indicated in the student edition by a stop sign icon as well as in the teacher edition lab or STEM activity support. Sample references include:</p> <p>SE Only: 80 TE Only: 44, 120, 134-135</p>	<p>22. integrate laboratory safety practices within learning experiences.</p>						
<p>Assessment <i>The materials provide:</i></p>							
<p>Throughout each lesson in the student edition, students are asked to complete write-in interactions to check their understanding of the concepts covered. Chapter-level assessments are available in the Teacher’s Edition. Sample references include:</p> <p>SE Only: Activity 14, Activity 17, Activity 33, Activity 35, Activity 38, Activity 54, Activity 58, Activity 75, Activity 79, Activity 98</p> <p>TE Only: Chapter Test: 30-31, 66-67, 104-105, 142-143, 172-173</p>	<p>23. ongoing diagnostic formative and summative assessments.</p>						

<p>In addition to the written assessments discussed in criterion 23 above, the Interactive Science program includes Performance-Based Assessments, Performance Expectation Activities, online interactivities, virtual labs, and assessments. Chapter Tests can be administered online with audio prompts for pre-reading students. Sample References include:</p> <p>TE Only: Performance-Based Assessment: 33, 69, 107, 175 Performance Expectation Activity: 33a-33b, 71a-71c, 109a-109e</p> <p>Online: Virtual Labs: Ramp Roller, Plant Growth, Life at the Park, Measure the Weather Chapter Tests Quest Activity: Weather and Seasons of the World – TE Only: xxxvi-xxxvii For interactivity examples, please see Interactivities: Push and Pull, Nonliving Things Summary, The Sun, Observing and Collecting Data, How can you solve a problem?</p>	<p>24. a variety of assessment formats, including performance tasks as well as multimedia simulations, portfolio evaluations, and data-dependent and open-ended questions.</p>						
<p>TE Only: Performance-Based Assessment: 33, 69, 107, 175</p>	<p>25. rubrics wherein all learners demonstrate progress toward mastery.</p>						

Organization, Presentation and Format

The materials:

Each chapter of Interactive Science introduces a Big Question that the lessons within the chapter aim to help the student answer. The student is periodically refocused on this question, and the progress they have made toward answering it scientifically, via Unlock the Big Question interactivities at the end of each lesson and Apply the Big Question exercises at the end of the chapter. Sample references include:

SE Only:

Introduce the Big Question: 1, 20, 41, 62, 83

Unlock the Big Question: 14, 15, 16, 17, 24, 33, 34, 35, 36, 37, 38, 39, 55, 56, 57, 58, 59, 60, 75, 76, 77, 78, 79, 80, 81, 82, 96, 97, 98, 99

Apply the Big Question: 19, 40, 61, 100

TE Only:

Introduce the Big Question: 9, 41, 79, 117, 153

Unlock the Big Question: 17, 19, 21, 23, 24, 49, 51, 53, 55, 57, 59, 60, 87, 89, 91, 93, 95, 97, 98, 125, 127, 129, 131, 133, 135, 136, 137, 161, 163, 165, 166

Apply the Big Question: 25, 61, 99, 167

26. are organized in logical sequence to optimize instructional effectiveness and efficiency.

<p>The Interactive Science program incorporates the Cross-Cutting Concepts outlined in the Next Generation Science Standards at the chapter level in the Teacher’s Edition.</p> <p>TE Only: CCC: 8, 40, 78, 116, 152</p>	<p>27. connect common themes across multiple science disciplines.</p>						
<p>TE Only: Integrate Your Day: 4, 5, 36, 37, 74, 75, 112, 113, 148, 149 Performance-Based Assessment: 33, 69, 107, 175 Science – Math: 61, 99, 167 Science – Art: 137</p>	<p>28. integrate cross-curricular connections.</p>						
<p>The Teacher’s Edition Curriculum Planning section includes a Pacing Guide (TE: xxxviii-xxxix) in days per activity and a correlation of the program to the Next Generation Science Standards (TE: xl-l). A Resource Guide outlines the time involved for each lesson. Teacher support for science content knowledge and hands-on activity management occurs throughout the text. Sample references include:</p> <p>TE Only: Resource Guide: 2-3, 34-35, 72-73, 110-111, 146-147 Professional Development Note – Teacher Background: 5, 37, 75, 113, 149 Professional Development Note – Content Refresher: 90, 94, 130, 162 Lab Support: 10, 24, 42, 60, 80, 98, 118, 136, 154, 166 STEM Activity – Background Activity Card Support: 13, 45, 83, 121, 157</p>	<p>29. provide educators necessary science content knowledge, pedagogy, and management techniques to guide learning experiences.</p>						

Life Skills						
<i>For student mastery of content standards and objectives, the instructional materials will provide students with opportunities to:</i>						
<p>SE Only: STEM Activity: 13, 32, 53, 74, 95</p> <p>TE Only: Performance-Based Assessment: 33, 69, 107, 175 Performance Expectation Activity: 33a-33b, 71a-71c, 109a-109e STEM Activity: 13, 45, 83, 121, 157</p>	<p>30. persevere to complete a task.</p>					
<p>TE Only: Activity Card Support: 28, 64, 102, 140, 170 Performance Expectation Activity: 33b, 71a, 71b, 71c, 109a, 109b, 109e</p>	<p>31. be exposed to varying viewpoints.</p>					
<p>TE Only: ELL Support: 17, 21, 23, 57, 89 Integrate Your Day: 36, 37, 75 Interactive Whiteboard Ready: 8, 40, 78, 116, 152 Leveled Content Reader Support: 7A, 7B Science – Physical Education: 25</p>	<p>32. engage in physical activity to promote the understanding of science content.</p>					

<p>The Interactive Science program provides many opportunities for the student to investigate the natural world in various contexts. Sample references include:</p> <p>SE Only: Try It!: 2, 21, 42, 63, 84 Investigate It!: 18, 39, 60, 81, 99</p> <p>TE Only: Try It!: 10, 42, 80, 118, 154 Investigate It!: 24, 60, 98, 136, 166 At-Home Lab: 6-7, 38-39, 76-77, 114-115, 150-151</p>	<p>33. investigate the natural world and universe.</p>					
<p>TE Only: Integrate Your Day: 4, 5, 36, 37, 74, 75, 112, 113, 148, 149 21st Century Learning: 20, 54, 58, 81, 92, 96, 119, 155 Performance-Based Assessment: 33, 69, 107, 175 Performance Expectation Activity: 33a-33b, 71a-71c, 109a-109e</p>	<p>34. practice situational language (e.g., presentations, debates, speeches, collaborative discussions, social media) in real-world activities.</p>					
<p>TE Only: Integrate Your Day: 4, 36, 37, 74, 112, 113, 148, 149 21st Century Learning: xx, 20, 54, 58, 81, 92, 96, 119, 155 Performance Expectation Activity: 71a, 71b, 71c, 109a, 109b, 109d, 109e</p>	<p>35. understand the impact of global issues and events on their lives, communities, and greater society.</p>					
<p>SE Only: Try It!: 2, 21, 42, 63, 84 Investigate It!: 18, 39, 60, 81, 99</p> <p>TE Only: Try It!: 10, 42, 80, 118, 154 Investigate It!: 24, 60, 98, 136, 166</p>	<p>36. use laboratory equipment properly.</p>					

SPECIFIC EVALUATION CRITERIA**2016-2022
Group IV – Science
Kindergarten**

The Kindergarten Science objectives are designed to engage students in finding answers to questions related to their interests and the world around them. Kindergarten students engage in active inquiries, investigations and hands-on activities throughout the instructional day to develop conceptual understanding and research skills as described in the objectives. Students use safe and proper techniques for handling, manipulating, and caring for science materials and treating living organisms humanely. Kindergarten objectives include physical, life, earth and space sciences and engineering. In the kindergarten objectives, students are expected to demonstrate age-appropriate proficiency in asking questions, developing and using models, planning and carrying out investigations, analyzing and interpreting data, designing solutions, engaging in argument from evidence, and obtaining, evaluating, and communicating information. Engineering, Technology, and the Application of Science objectives are integrated throughout instruction as students define problems and design solutions related to the course objectives. Students are expected to use these practices to demonstrate an understanding of the scientific world.

All West Virginia teachers are responsible for classroom instruction that integrates content literacy and *21st Century Learning Skills and Technology Tools*.

General Science Content

The General Science Standard is a content standard that provides an integrated approach to science instruction that is arranged in a coherent manner, follows the logic of learning progressions and spans kindergarten through middle school. The three disciplines of science--Physical Science, Life Science, and Earth and Space Science--are limited to the major topics in the core ideas from each discipline. From the Life Science discipline the core ideas are the following: From Molecules to Organisms: Structures and Processes; Ecosystems: Interactions, Energy, and Dynamics; Heredity: Inheritance and Variation of Traits Across Generations; and Biological Evolution: Unity and Diversity. From the Physical Science discipline, the topics are the following: Matter and Its Interactions; Motion and Stability, Forces and Interactions; Energy; and Waves and Their Applications in Technologies for Information Transfer. Earth's Place in the Universe; Earth's Systems; and Earth and Human Activity are the topics from the Earth and Space Science discipline. Limiting instruction to the main topics of core ideas allows opportunities for deep exploration of important concepts and provides time for students to develop meaningful understandings, engage in science and engineering practices, and reflect on crosscutting concepts and the nature of science. The foundation not only provides an organizational structure for the acquisition of new knowledge, it prepares students to engage in deeper levels of scientific and engineering practices as they continue to high school, college, and beyond.

Earth and Space Science Content

The Earth and Space Standard is a content standard which spans kindergarten through high school and provides opportunities for students to investigate processes that operate on Earth and also address its place in the solar system and the galaxy. The standard encompasses three core ideas: Earth's Place in the Universe; Earth's Systems; and Earth and Human Activity. Beginning in kindergarten, students make observations, ask questions, and make predictions as they describe patterns in their local Weather and Climate. In later grades, the content progresses to include these topics: Space Systems: Patterns and Functions; Earth Systems: Processes that Shape the Earth; Earth's Systems: Space Systems: Stars and the Solar System; History of Earth; and Human Impacts. Elementary students observe and investigate matter and processes in their own yards and neighborhoods with their own eyes; the content continues in the grades that follow to include investigations of invisibly small phenomena to the unimaginably large and distant. As students investigate the atmosphere, hydrosphere, geosphere, and biosphere, they gain understanding of the differing sources of energy, matter cycles, multiple systems' interconnections, and feedbacks which cause Earth to change over time.

Life Science Content

The Life Science Standard is a content standard which spans kindergarten through high school and focuses on patterns, processes, and relationships of living organisms. The standard includes four core ideas: From Molecules to Organisms: Structures and Processes; Ecosystems: Interactions, Energy, and Dynamics; Heredity: Inheritance and Variation of Traits across Generations; and Biological Evolution: Unity and Diversity. These four core ideas, which represent basic life science fields of investigation—structures and processes in organisms, ecology, heredity, and evolution—have a long history and solid foundation based on the

research evidence established by many scientists working across multiple fields. Beginning in kindergarten, curious learners explore Animals, Plants, and Their Environment as they learn of the Interdependent Relationships in Ecosystems. In the grades which follow, the inquiry continues as the standards encompass these topics: Structure, Function, and Information Processing; Inheritance and Variation of Traits; Life Cycles and Traits; Matter and Energy in Organisms and Ecosystems; and Growth, Development, and Reproduction of Organisms. Investigations include single molecules, organisms, ecosystems, and the entire biosphere that is all life on Earth. Students examine processes that occur on time scales from the blink of an eye to those that happen over billions of years. As they make observations, construct hypotheses, perform experiments, evaluate evidence, build models, and use technology to explore how life works, they prepare to answer questions about themselves and the world around them.

Physical Science Content

The Physical Science Standard is a content standard which spans kindergarten through high school as two subjects, physics and chemistry, are presented in a coherent approach which addresses four core ideas: Matter and Its Interactions; Motion and Stability, Forces and Interactions; Energy; and Waves and Their Applications in Technologies for Information Transfer. Beginning in kindergarten, students explore pushes and pulls as an introduction to the Forces and Interactions Topic. The inquiry continues through each programmatic level and includes the following topics: Light and Sound, Structure and Properties of Matter, Forces and Interactions, Energy, Waves and Information, Matter and Energy in Organisms and Ecosystems, Waves and Electromagnetic Radiation, and Chemical Reactions. An understanding of these topics allows students to answer two fundamental questions- “What is everything made of?” and “Why do things happen?” Students apply these core ideas to explain and predict a wide variety of phenomena, such as the evaporation of water, the transmission of sound, the digital storage and transmission of information, the tarnishing of metals, and photosynthesis, to name just a few. Because such explanations and predictions rely on a basic understanding of matter and energy, students’ abilities to conceive the interactions of matter and energy are central to their science education.

Chemistry Content

The Chemistry Standard is a content standard which focuses on the core concepts: Structure and Properties of Matter and Chemical Reactions. Opportunities are provided for studying in-depth phenomena central not only to the physical sciences, but to life science and earth and space science, as well. The standard includes the chemistry concepts found in the Physical Science Standard, but *not* those emphasizing Forces & Interactions, Energy, and Waves and Electromagnetic Radiation. Instead the standard goes into greater depth in the study of matter, its composition, and its changes by including concepts such as the periodic table and modern theories of bonding, the effects of temperature, concentration, and vapor pressure on solubility, types of chemical reactions, stoichiometry, molarity, and gas laws. The standard blends the core ideas with scientific and engineering practices and crosscutting concepts to support students in developing useable knowledge to explain ideas across the science disciplines. There is an emphasis on several scientific practices which include developing and using models, planning and conducting investigations, analyzing and interpreting data, using mathematical and computational thinking and constructing explanations.

Physics Content

The Physics Standard is a content standard which focuses on the core concepts: Forces and Interactions, Energy, and Waves and Electromagnetic Radiation. Opportunities are provided for studying in-depth phenomena central not only to the physical sciences, but to life science and earth and space science, as well. The standard includes the physics concepts found in the Physical Science Standard, but *not* those emphasizing Structure and Properties of Matter and Chemical Reactions. Instead the standard goes into greater depth in the studies of elastic and inelastic collisions, buoyancy and fluid dynamics, projectile motion, vectors, circuits and currents, and optics. The standard blends the core ideas with scientific and engineering practices and crosscutting concepts to support students in developing useable knowledge to explain ideas across the science disciplines. There is an emphasis on several scientific practices which include developing and using models, planning and conducting investigations, analyzing and interpreting data, using mathematical and computational thinking and constructing explanations.

Environmental Content

The Environmental Standard is a content standard which focuses on chemical, physical, biological, and geological processes and the interdependent relationships in the natural world. Concepts from the major science disciplines—Life Science, Physical Science, and Earth and Space Science—are integrated into six environmental topics which include: Biogeochemical cycles, Energy Conservation, Ecosystems, Oceans and Climate, Water Management, Land Use. There is an emphasis on several scientific practices that include developing and using models; planning and conducting investigations; analyzing and interpreting data;

constructing explanations; engaging in arguments from evidence; obtaining, evaluating, and communicating information; and synthesizing concepts across various science disciplines. The standard provides opportunities for students to develop an understanding of systems of a complex world and the interdependence of organisms as well as an appreciation of the ecosystem in which they live. As students develop an awareness of the environment and its associated problems, they acquire knowledge and skills of how to work individually and collectively toward solutions of current problems and the prevention of new ones.

Forensic Science Content

The Forensic Science Standard is a content standard which applies the knowledge and technology of science to criminal and civil law. Concepts from the three major disciplines--Life Science, Physical Science, and Earth and Space Science--are reinforced and made relevant and pertinent to students as they acquire techniques and skills and learn the limitations of the modern crime laboratories. There is an emphasis on several scientific practices which include planning and carrying out investigations; analyzing and interpreting data; obtaining, evaluating and communicating information; and using mathematics and computations. Students must address the attention to detail and protocol that are necessary for providing impartial scientific evidence that may be used in courts of law to support the prosecution or defense in criminal and civil investigations. These skills and attitudes transfer readily to other areas of science.

Human Anatomy and Physiology Content

Human Anatomy and Physiology is a content standard which addresses the structures and functions of the human body. While concepts from the Life Science discipline are the major focus of study, concepts from the Physical Sciences are incorporated to explain processes and mechanisms of the human body. The interdisciplinary nature of the sciences is revealed through the interdependency of body systems. There is an emphasis on several scientific practices which include asking questions, developing and using models, constructing explanations, and obtaining and communicating information. Engineering Design Standards are integrated throughout instruction as students define problems and design solutions related to the course objectives. The standard encompasses gross and microscopic anatomy, basic biochemistry and physiological concepts which are foundational to medical fields of study and useful as students make health related decisions.

Engineering, Technology, and Applications of Science

Engineering, Technology, and Applications of Science Standards (ETS) are included in science instruction, kindergarten through high school, and provide opportunities for students to utilize science and appreciate the distinctions and relationships between engineering, technology, and applications of science. The ETS are in programmatic levels- Kindergarten through Second Grade, Third through Fifth Grade, Middle School, and High School. As Engineering, Technology, and the Application of Science objectives are integrated with content from the three major strands of science- life science, physical science, and earth and space science- students develop understandings of how scientific knowledge is acquired, scientific explanations are developed, and science is applied in the world around us. The interactive cycle of design offers potential in applying science knowledge and engaging in engineering practices. Students gain experiences and understandings about the following: 1.) using technology to modify the natural world to fulfill human needs or desires; 2.) using an engineering approach to design objects, use processes, or construct systems to meet human needs and wants; and 3.) applying scientific knowledge for a specific purpose, whether to do more science, design a product, process, or medical treatment, develop a new technology, or to predict the impacts of human actions.

Literacy

Literacy Standards span middle and high school and address skills which are critical to building knowledge in science. The standards work in tandem with the specific content standard demands outlined in the West Virginia Next Generation Science Standards and Objectives. Reading in science requires an appreciation of the norms and conventions of the sciences which includes a working knowledge of domain-specific words, phrases, and symbols; an understanding of the nature of evidence used to support claims; an attention to precision and detail; and the capacity to make and assess intricate arguments, synthesize complex information often presented qualitatively and quantitatively in tables and graphs, and follow detailed procedures and accounts of events and concepts. Students also need to be able to gain knowledge from elaborate diagrams and data that convey information and illustrate scientific concepts. Likewise, writing and presenting information orally are key means for students to assert and defend claims in science, demonstrate what they know about a concept, and convey what they have experienced, imagined, thought, and learned. The skills and understandings students are expected to demonstrate in both reading and writing have a wide applicability outside the classroom and workplace and serve students as they address public and private responsibilities and interests.

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For student mastery of content standards and objectives, the instructional materials will provide students with the opportunity to:

(Vendor/Publisher) SPECIFIC LOCATION OF CONTENT WITHIN PRODUCTS	(IMR Committee) Responses				
	I=In-depth, A=Adequate, M=Minimal, N=Nonexistent	I	A	M	N
General Science Content:					
Forces and Interactions: Pushes and Pulls					
<p>SE Only: 2, Try It!; 3, Let's Read Science!; Activity 3, Home Activity; 4-13, STEM Activity: Move Around It!; 15, Lesson 2; 16, Lesson 3; 17, Lesson 4; 18, Investigate It!</p> <p>TE Only: 4, Reading; 5, Writing; 5, Teacher Background; 8, CCC: Cause and Effect; 8-9; 9, SEP: Planning and Carrying Out Investigations; 10, Inquiry; 10, Try It!; 11, Let's Read Science!; 12-13, STEM Activity: Move Around It!; 18, Envision It!; 18-23; 22, Differentiated Instruction; 24, Investigate It!; 28-29, Activity Card Support; 33, Write About Pushes and Pulls; 33a, Performance Expectation Activity</p>	<ol style="list-style-type: none"> 1. plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object 				

<p>SE Only: 2, Try It!; 3, Let's Read Science!; Activity 3, Home Activity; Move Around It!; 15, Lesson 2; 16, Lesson 3; 17, Lesson 4; 18, Investigate It!; 99, Investigate It!</p> <p>TE Only: 4, Reading; 5, Teacher Background; 5, Writing; 8, CCC: Cause and Effect; 9, SEP: Planning and Carrying Out Investigations; 10, Inquiry; 10, Try It!; 11, Let's Read Science!; 24, Investigate It!; 28-29, Activity Card Support; 33b, Performance Expectation Activity; 166, Investigate It!</p>	<p>2. analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.*</p>						
<p>Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment</p>							
<p>SE Only: 21, Try It!; 35, Lesson 3; 36, Lesson 4; 37, Lesson 5</p> <p>TE Only: 36, Social Studies; 37, Rhyme; 39A-39B, Leveled Content Reader Support; 40, CCC: Patterns; 41, SEP: Analyzing and Interpreting Data; 42, Try It!; 50-57; 58, 21st Century Learning; 66, Chapter 2 Test-Questions 3, 4; 67, Chapter 2 Test-Question 5; 69, Write Plant Sentences; 71a, ELA/Literacy, Performance Expectation Activity</p>	<p>3. use observations to describe patterns of what plants and animals (including humans) need to survive.</p>						

<p>SE Only: 38, Lesson 6; 39, Investigate It!</p> <p>TE Only: 36, Social Studies; 58-59; 60, Investigate It!; 67, Chapter 2 Test-Question 6; 69, Make an Animal World; 71b, Performance Expectation Activity; 71c, Performance Expectation Activity</p>	<p>4. construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.</p>						
<p>SE Only: 21, Try It!; 23-32, STEM Activity: Scratch Away!; 36, Lesson 4; 37, Lesson 5; 38, Lesson 6; 39, Investigate It!</p> <p>TE Only: 36, Social Studies; 37, Rhyme; 42, Try It!; 44-45, STEM Activity: Scratch Away!; 50-57; 71a, ELA/Literacy; 58-59; 60, Investigate It!; 64-65, Activity Card Support; 69, Make an Animal World; 71c, Performance Expectation Activity; ELA/Literacy</p>	<p>5. use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.</p>						

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<p>SE Only: 59, Lesson 6</p> <p>TE Only: 96, 21st Century Learning; 97, Content Refresher; 109e, Performance Expectation Activity, ELA/Literacy</p>	<p>6. communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.*</p>						
<p>Weather and Climate</p>							
<p>SE Only: 42, Try It!; 57, Lesson 4</p> <p>TE Only: xxxvi-xxxvii, QUEST; 79, SEP: Analyzing and Interpreting Data; 80, Try It!; 92-93; 104-105, Chapter 3 Test-Questions 3, 4, 6; 107, Make a Weather Calendar; 109a, Performance Expectation Activity, ELA/Literacy</p>	<p>7. use and share observations of local weather conditions to describe patterns over time.</p>						

<p>SE Only: 42, Try It!; 43, Draw Conclusions; 61, Ready for the Weather</p> <p>TE Only: xxxvi-xxxvii, QUEST; 74, Reading; 80, Try It!; 81, 21st Century Learning; 92, 21st Century Learning; 99, Activate Prior Knowledge, Teach with Visuals; 109b, Performance Expectation Activity, ELA/Literacy</p>	<p>8. ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.*</p>						
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<p>SE Only: 44-53, STEM Activity: Cool Down!; 56, Lesson 3; 60, Investigate It!;</p> <p>TE Only: 82-85, STEM Activity: Cool Down!; 90-91; 98, Investigate It!; 102-103, Activity Card Support; 109c, Performance Expectation Activity, ELA/Literacy</p>	<p>9. make observations to determine the effect of sunlight on Earth's surface.</p>						
<p>SE Only: 44-53, STEM Activity: Cool Down!</p> <p>TE Only: 82-85, STEM Activity: Cool Down!;; 109d, Performance Expectation Activity</p>	<p>10. use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.*</p>						

Engineering, Technology, and Applications of Science						
Engineering and Design						
<p>SE Only: 4-13, STEM Activity: Move Around It!; 23-32, STEM Activity: Scratch Away!; 44-53, STEM Activity: Cool Down!; 65-74, STEM Activity: Where the Wind Blows!; 86-95, STEM Activity: How Can You Make a Crayon Box?; 96, Lesson 1; 97, Lesson 2; 99, Investigate It!</p> <p>TE Only: 12-15, STEM Activity: Move Around It!; 44-47, STEM Activity: Scratch Away!; 82-85, STEM Activity: Cool Down!; 109d, Performance Expectation Activity; 117, SEP: Asking Questions and Defining Problems; 120-123, STEM Activity: Where the Wind Blows!; 153, SEP: Asking Questions and Defining Problems; 156-159, STEM Activity: How Can You Make a Crayon Box?; 160-161, 162-163; 164, Differentiated Instruction; 166, Investigate It!</p>	<p>11. ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.</p>					
<p>SE Only: 8-9, 12, 13, Make and Test; 23-32, STEM Activity: Scratch Away!; 44-53, STEM Activity: Cool Down!; 68, Draw; 71, Make and Test; 86-93, STEM Activity: Cool Down!; 97, Lesson 2; 98, Lesson 3</p>	<p>12. develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.</p>					

<p>(continued) TE Only: 12-13, 15, STEM Activity: Move Around It!; 44-47, STEM Activity: Scratch Away!; 82-85, STEM Activity: Cool Down!; 109d, Performance Expectation Activity; 120-121, STEM Activity: Where the Wind Blows!; 116, CCC: Structure and Function and Effect; 152, CCC: Structure and Function; 156-157, STEM Activity: How Can You Make a Crayon Box?; 161, Explain; 162-163; 164-165</p>	<p>(continued) 12. develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.</p>						
<p>SE Only: 10-12, Record and Share; 31, Record and Share; 52, Record and Share;; 73, Record and Share; 94, Record and Share</p> <p>TE Only: 15, STEM Activity: Move Around It!; 33b, Performance Expectation Activity; 47, STEM Activity: Scratch Away! 85, STEM Activity: Cool Down!; 109d, Performance Expectation Activity; 123, STEM Activity: Where the Wind Blows!; 159, STEM Activity: How Can You Make a Crayon Box?; 164, Differentiated Instruction</p>	<p>13. analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.</p>						