**STEMscopes Virginia-Kindergarten**

Overall Rating of Standards

| **Standard** | **Determined Rating** |
| --- | --- |
| K.1 The student will demonstrate an understanding of the scientific and engineering practices. | This standard was evaluated in the context of the content standards. |
| K.2 The student will investigate and understand that pushes and pulls affect the motion of objects. | Adequate |
| K.3 The student will investigate and understand that physical properties of an object can be described. | Adequate |
| K.4 The student will investigate and understand that water is important in our daily lives and has properties. | Adequate |
| K.5 The students will investigate and understand that senses allow humans to seek, find, take in, and react or respond to different information. | Adequate |
| K.6 The student will investigate and understand that there are differences between living organisms and nonliving objects. | Adequate |
| K.7 The student will investigate and understand that plants and animals have basic needs and life processes. | Adequate |
| K.8 The student will investigate and understand that light influences temperature on Earth’s surfaces and can cause shadows. | Adequate |
| K.9 The student will investigate and understand that there are patterns in nature. | Adequate |
| K.10 The student will investigate and understand that change occurs over time. | Adequate |
| K.11 The student will investigate and understand that humans use resources. | Adequate |

Overall Rating for Instructional Design and Support

| **Instructional Design and Support** | **Determined Rating** |
| --- | --- |
| Materials emphasize the use of effective instructional practices and learning theory. | Adequate |
| The science content is significant and accurate. | Adequate |
| Materials present content in an accurate, unbiased manner. | Adequate |

Review of Standards with Curriculum Framework

| Standard | Expectation |
| --- | --- |
| K.1 The student will demonstrate an understanding of the scientific and engineering practices by:   1. asking questions and defining problems 2. planning and carrying out investigations 3. interpreting, analyzing, and evaluating data 4. constructing and critiquing conclusions and explanations 5. developing and using models 6. obtaining, evaluating, and communicating information. | The expectation of the 2018 *Science Standards of Learning* is that the scientific and engineering practices are embedded into the instruction of content standards.  The rating for an individual standard includes the evaluation of standard 1 as it pertained to that standard.  For specific grade level/course expectations for standard 1, see the Standards of Learning and the Curriculum Framework. |

| Standard | Adequate | Limited | No Evidence |
| --- | --- | --- | --- |
| K.2 The student will investigate and understand that pushes and pulls affect the motion of objects. Key ideas include |  |  |  |
| * 1. pushes and pulls can cause an object to move; | X |  |  |
| * 1. pushes and pulls can change the direction of an object; and | X |  |  |
| * 1. changes in motion are related to the strength of the push or pull. | X |  |  |

| Standard | Adequate | Limited | No Evidence |
| --- | --- | --- | --- |
| K.3 The student will investigate and understand that physical properties of an object can be described. Properties include |  |  |  |
| 1. colors | X |  |  |
| 1. shapes and forms: | X |  |  |
| 1. textures and feel: and | X |  |  |
| 1. relative sizes and weights of objects. | X |  |  |

| Standard | Adequate | Limited | No Evidence |
| --- | --- | --- | --- |
| K.4 The student will investigate and understand that water is important in our daily lives and has properties. Key ideas include |  |  |  |
| 1. water has many uses; | X |  |  |
| 1. water can be found in many places; | X |  |  |
| 1. water occurs in different phases; | X |  |  |
| 1. water flows downhill. | X |  |  |

| Standard | Adequate | Limited | No Evidence |
| --- | --- | --- | --- |
| K.5 The students will investigate and understand that senses allow humans to seek, find, take in, and react or respond to different information. Key ideas include |  |  |  |
| 1. the five basic senses correspond to specific human body structures; and | X |  |  |
| 1. senses are used in our daily lives. | X |  |  |

| Standard | Adequate | Limited | No Evidence |
| --- | --- | --- | --- |
| K.6 The student will investigate and understand that there are differences between living organisms and nonliving objects. Key ideas include |  |  |  |
| 1. all things can be classified as living or nonliving; and | X |  |  |
| 1. living organisms have certain characteristics that distinguish them from nonliving objects. | X |  |  |

| Standard | Adequate | Limited | No Evidence |
| --- | --- | --- | --- |
| K.7 The student will investigate and understand that plants and animals have basic needs and life processes. Key ideas include |  |  |  |
| 1. living things need adequate food, water, shelter, air, and space to survive; | X |  |  |
| 1. plants and animals have life cycles; and | X |  |  |
| 1. offspring of plants and animals are similar but not identical to their parents or to one another. | X |  |  |

| Standard | Adequate | Limited | No Evidence |
| --- | --- | --- | --- |
| K.8 The student will investigate and understand that light influences temperature on Earth’s surfaces and can cause shadows. Key ideas include |  |  |  |
| 1. the sun provides light and warms Earth’s surface; | X |  |  |
| 1. shadows can be produced when sunlight or artificial light is blocked by an object; and | X |  |  |
| 1. objects in shadows and objects in sunlight have different temperatures. | X |  |  |

| Standard | Adequate | Limited | No Evidence |
| --- | --- | --- | --- |
| K.9 The student will investigate and understand that there are patterns in nature. Key patterns include |  |  |  |
| 1. daily weather; | X |  |  |
| 1. seasonal changes; and | X |  |  |
| 1. day and night. | X |  |  |

| Standard | Adequate | Limited | No Evidence |
| --- | --- | --- | --- |
| K.10 The student will investigate and understand that change occurs over time. Key ideas include |  |  |  |
| 1. natural and human-made things change over time; | X |  |  |
| 1. living and nonliving things change over time; | X |  |  |
| 1. changes can be observed and measured; and | X |  |  |
| 1. changes may be fast or slow. | X |  |  |

| Standard | Adequate | Limited | No Evidence |
| --- | --- | --- | --- |
| K.11 The student will investigate and understand that humans use resources. Key ideas include |  |  |  |
| 1. some materials and objects can be used over and over again; | X |  |  |
| 1. materials can be recycled; and | X |  |  |
| 1. choices we make impact the air, water, land and living things. | X |  |  |

Rubric for Instructional Design and Support

|  |  |  |
| --- | --- | --- |
| **Adequate** | **Limited** | **No Evidence** |
| 1. Materials emphasize the use of effective instructional practices and learning theory. | | |
| * 1. Students are guided through critical thinking and problem-solving approaches. | | |
| Materials consistently include content promoting use of critical thinking and problem-solving approaches. | Materials inconsistently include content promoting use of critical thinking and problem-solving approaches. | Materials do not include content promoting use of critical thinking and problem-solving approaches. |
| * 1. Concepts are introduced through concrete experiences that incorporate the scientific and engineering practices. | | |
| Materials consistently promote the introduction of concepts through concrete experiences. | Materials inconsistently promote the introduction of concepts through concrete experiences. | Materials do not promote the introduction of concepts through concrete experiences. |
| * 1. Multiple opportunities are provided for students to develop and apply concepts through scientific and engineering practices. | | |
| Materials consistently provide development and application of concepts through appropriate technologies. | Materials inconsistently provide development and application of concepts through appropriate technologies. | Materials do not provide development and application of concepts through appropriate technologies. |
| * 1. Students use a variety of representations (graphical, numerical, symbolic, verbal, and physical) to connect science concepts. | | |
| Materials provide consistent use of a variety of representations of science content and concepts. | Materials provide inconsistent use of a variety of representations of science content and concepts. | Materials do not provide use of a variety of representations of science content and concepts. |
| 1. The science content is significant and accurate. | | |
| * 1. Materials are presented in an organized, logical manner which represents the current thinking on how students learn science. | | |
| Materials consistently support the balanced use of conceptual and procedural approaches. | Materials inconsistently support the balanced use of conceptual and procedural approaches. | Materials do not support a balanced use of conceptual and procedural approaches. |
| * 1. Materials are organized appropriately within and among units of study. | | |
| Materials are consistently organized within and among units of study. | Materials are inconsistently organized within and among units of study. | Materials are inappropriately organized within and among units of study. |
| * 1. Format design includes titles, subheadings, and appropriate cross-referencing for ease of use. | | |
| Materials consistently use formatting that is user-friendly. | Materials inconsistently use formatting that is user-friendly. | Materials do not use formatting that is user-friendly. |
| * 1. Writing style, length of sentences, vocabulary, graphics, and illustrations are appropriate. | | |
| Materials consistently include writing and visuals that are appropriate for the grade level. | Materials inconsistently include writing and visuals that are appropriate for the grade level. | Materials do not include writing and visuals that are appropriate for the grade level. |
| * 1. Level of abstraction is appropriate, and practical/real-life examples, including careers, are provided. | | |
| Materials consistently provide the appropriate level of abstraction and appropriate practical/real-life examples. | Materials inconsistently provide the appropriate level of abstraction and appropriate practical/real-life examples. | Materials do not provide the appropriate level of abstraction and appropriate practical/real-life examples. |
| * 1. Sufficient applications are provided to promote depth of application. | | |
| Materials consistently provide sufficient applications to promote depth of application and are appropriate for the grade level. | Materials inconsistently provide sufficient applications to promote depth of application and are appropriate for the grade level. | Materials do not provide sufficient applications to promote depth of application and are not appropriate for the grade level. |
| 1. Materials present content in an accurate, unbiased manner. | | |
| Materials consistently present content in an accurate, unbiased manner. | Materials inconsistently present content in an accurate, unbiased manner. | Materials do not present content in an accurate, unbiased manner. |