**STEMscopes Virginia-Grade One**

Overall Rating of Standards

| **Standard** | **Determined Rating** |
| --- | --- |
| 1.1 The student will demonstrate an understanding of the scientific and engineering practices. | This standard was evaluated in the context of the content standards. |
| 1.2 The student will investigate and understand that objects can move in different ways. | Adequate |
| 1.3 The student will investigate and understand that objects are made from materials that can be described by their physical properties. | Adequate |
| 1.4 The student will investigate and understand that plants have basic life needs and functional parts that allow them to survive. | Adequate |
| 1.5 The student will investigate and understand that animals, including humans, have basic life needs that allow them to survive. | Adequate |
| 1.6 The student will investigate and understand that there is a relationship between the sun and Earth. | Adequate |
| 1.7 The student will investigate and understand that there are weather and seasonal changes. | Adequate |
| 1.8 The student will investigate and understand that natural resources can be used responsibly.  | Adequate |

Overall 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 |
| --- | --- |
| 1.1 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 |
| --- | --- | --- | --- |
| 1.2 The student will investigate and understand that objects can move in different ways. Key ideas include |  |  |  |
| * 1. objects may have straight, circular, spinning, and back-and-forth motions; and
 | X |  |  |
| * 1. objects may vibrate and produce sound.
 | X |  |  |

| Standard | Adequate | Limited | No Evidence |
| --- | --- | --- | --- |
| 1.3 The student will investigate and understand that objects are made from materials that can be described by their physical properties. Key ideas include |  |  |  |
| 1. objects are made of one or more materials with different physical properties and can be used for a variety of purposes;
 | X |  |  |
| 1. when a material is changed in size most physical properties remain the same; and
 | X |  |  |
| 1. the type and amount of material determine how much light can pass through an object.
 | X |  |  |

| Standard | Adequate | Limited | No Evidence |
| --- | --- | --- | --- |
| 1.4 The student will investigate and understand that plants have basic life needs and functional parts that allow them to survive. Key ideas include |  |  |  |
| 1. plants need nutrients, air, water, light, and a place to grow;
 | X |  |  |
| 1. structures of plants perform specific functions; and
 | X |  |  |
| 1. plants can be classified based on a variety of characteristics.
 | X |  |  |

| Standard | Adequate | Limited | No Evidence |
| --- | --- | --- | --- |
| 1.5 The student will investigate and understand that animals, including humans, have basic life needs that allow them to survive. Key ideas include |  |  |  |
| 1. animals need air, food, water, shelter, and space (habitat);
 | X |  |  |
| 1. animals have different physical characteristics that perform specific functions; and
 | X |  |  |
| 1. animals can be classified based on a variety of characteristics.
 | X |  |  |

| Standard | Adequate | Limited | No Evidence |
| --- | --- | --- | --- |
| 1.6 The student will investigate and understand that there is a relationship between the sun and Earth. Key ideas include |  |  |  |
| 1. the sun is the source of energy and light that warms the Earth’s land, air, and water; and
 | X |  |  |
| 1. the sun’s relative position changes in the Earth’s sky throughout the day.
 | X |  |  |

| Standard | Adequate | Limited | No Evidence |
| --- | --- | --- | --- |
| 1.7 The student will investigate and understand that there are weather and seasonal changes. Key ideas include |  |  |  |
| 1. changes in temperature, light, and precipitation occur over time;
 | X |  |  |
| 1. there are relationships between daily weather and the season; and
 | X |  |  |
| 1. changes in temperature, light, and precipitation affect plants and animals, including humans.
 | X |  |  |

| Standard | Adequate | Limited | No Evidence |
| --- | --- | --- | --- |
| 1.8 The student will investigate and understand that natural resources can be used responsibly. Key ideas include |  |  |  |
| 1. most natural resources are limited;
 | X |  |  |
| 1. human actions can affect the availability of natural resources; and
 | X |  |  |
| 1. reducing, reusing, and recycling are ways to conserve natural resources.
 | 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.
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| 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. |