Grade 3 Science Instructional Materials Scoring Rubric

Gateway: The publisher must provide a Tennessee standards alignment guide as a part of the scope and sequence for the material. If this gateway is not met, the materials will not be scored. All Tennessee standards must be addressed within the material. If this is not met, the material will not pass review by the Tennessee Textbook and Instructional Materials Quality Commission.

Introduction:

The following Instructional Materials Scoring Rubric for Science is designed to score materials in the following categories:

- Instructional Focus
- Attending to Multiple Dimensions of Science Instruction
- Accessibility Features
- Alignment of Content

Scoring:

Each section is to be scored using a 0, 1, or 2. Use the following scoring guideline.

Tables 1-2:

- Adhere to the provided rubric statements for scoring.

Tables 3-4:

- 0: The standard is not present within the material.
- 1: The standard is present within the material. The intent and/or frequency component of the standard is not fully met.
- 2: A rating of 2 indicates the standard is present and all aspects of the standard are fully met.

Table 1: Instructional Focus					
Directions: **Adhere to the provided rubric statements for scoring.**					
Indicator	**0**	**1**	**2**	**Score**	**Evidence**
Central Phenomenon	Unit has **no phenomenon, or only a "hook"** to capture student interest at the beginning of the unit.	All units include one or more **smaller phenomenon or design challenge(s) and/or not all lessons connect to the phenomenon** or design challenge.	All units have a central phenomenon or design challenge that **develops throughout every lesson** of the unit.		
Activity Purpose	Material contains hands-on activities **do not serve** to grade-level scientific ideas	Hands-on activities **reinforce** scientific ideas aligned with grade-level standards.	All hands-on activities serve to **uncover** scientific ideas aligned with grade level standards.		
Use of Science Engineering Practices (SEPs)	Some units **do not provide students opportunities** to use the SEPs.	SEPs are present in all units, but **loosely or not connected to central phenomenon**.	In every unit, the **primary use** of the SEPs ties directly to explaining the central phenomenon or solving the design challenge.		
Student Engagement	**Neither of the given features** are present.	**One of the given features** is present.	Materials give students opportunities to: • expressly connect the DCI content from each lesson to		

Table 1: Instructional Focus

Directions:
Adhere to the provided rubric statements for scoring.

			relevant crosscutting concepts. • practice with the SEP that is relevant to that day's lesson.		
Concepts before vocabulary.	Materials **pre-teach vocabulary.**	In **some instances**, materials develop conceptual meaning first.	In **all instances**, materials provide experiences (e.g., investigations, data analysis, discussions) where students develop conceptual meaning of a scientific idea before introducing technical vocabulary.		
Connections across component ideas.	Materials **describe** connections for students, or connections are absent.	Some units include **standalone questions** in place of activities, where students communicate their understanding of connections between component ideas.	All units include **activities** where students communicate their understanding of connections between science ideas from *two or more component ideas* within the grade (e.g., LS1.A and LS2.C, ESS2.A and PS1.A).		
Connections across disciplines.	Materials **describe** connections for students,	Some units include **standalone questions** in place of activities, where	All units include activities where students communicate their		

Table 1: Instructional Focus **Directions:** **Adhere to the provided rubric statements for scoring.**					
	or connections are absent.	students communicate their understanding of connections between component ideas.	understanding of connections between science ideas from *two or more disciplines* within the grade (e.g., LS and PS).		
Review opportunities	End of unit review is **not anchored to a phenomenon**.	End of unit review assesses learning of the **central phenomenon for the unit** only.	Materials provide opportunities for students to transfer new learning to **analogous phenomenon** in a review at the end of every unit.		
			Total		

Table 2: Attending to Multiple Dimensions of Science Learning **Directions:** **Adhere to the provided rubric statements for scoring.**					
Indicator	**0**	**1**	**2**	**Score**	**Evidence**
Distribution of SEPs as required by the standards	Materials **do not include** a focal SEP for one or more units.	One or more SEPs are **disproportionately** featured as the focal SEP.	Materials identify one or more focal science and engineering practices (SEPs) for every unit(s) with a **balanced** distribution of all SEPs as a focal SEP throughout the units.		

Table 2: Attending to Multiple Dimensions of Science Learning Directions: Adhere to the provided rubric statements for scoring.					
Support for a focal SEP	**No** student facing or teacher facing supports for the SEPs.	Relevant **support strategies are absent** from teacher materials.	Every unit contains a focal SEP is featured in **student-facing materials and teacher materials** including instructional strategies for the particular unit and focal SEP.		
Connections across to crosscutting concepts as required by the standards.	Materials **describe connections with CCCs** or do not specifically address CCCs.	In every unit students make connection between the CCCs and **either** the SEPs or DCIs.	In every unit, students make connections between the crosscutting concepts (CCCs) and **both** the SEPs and disciplinary core ideas (DCIs).		
Developing crosscutting concepts (CCCs)	Materials **provide examples** of other instances of the CCCs or CCCs absent.	Students make connections between CCCs and **content not addressed in other units.**	In every unit, the materials lead students to **make connections between the CCCs in that unit and appearances of the CCCs in other units**.		
			Total		

Table 3: Accessibility Features				
Directions: • **0: The standard is not present within the material.** • **1: The standard is present within the material. The intent and/or frequency component of the standard is not fully met.** • **2: A rating of 2 indicates the standard is present and all aspects of the standard are fully met.**				
Digital Materials	**0**	**1**	**2**	**Evidence**
All lessons within the materials are available in digital form and include a printable option.				
In every lesson, materials include recommended supports, accommodations, and modifications for Students with Disabilities and English language learners that will support their regular and active participation in accessing on grade level material (e.g., modifying vocabulary words within word problems, sentence starters, etc.).				
			Total	

Table 4: Alignment of Content				
Directions: • **0: The standard is not present within the material.** • **1: The standard is present within the material. The intent and/or frequency component of the standard is not fully met.** • **2: A rating of 2 indicates the standard is present and all aspects of the standard are fully met.**				
Conceptual Understanding: The materials support the intentional development of students' conceptual understanding of key science ideas, practice, and concepts.	**0**	**1**	**2**	**Evidence**
3.PS1. 1 Develop a model of solids, liquids, and gasses to describe that each state of matter is made of particles too small to be seen.				
3.PS1. 2 Construct an explanation about the effects of heating and cooling a substance differentiating between changes that can be reversed (i.e., freezing & melting) and those that cannot (e.g., baking a cake or burning fuel).				

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3.PS1. 3 Construct an argument based on evidence that materials have both fixed and changing properties, some of which are useful for identification of a material.				
3.PS2.1 Explain cause and effect relationships of forces that cannot be seen including interactions between two objects not in contact with each other (i.e., static electricity, magnetism and gravity).				
3.PS3.1 Make observations of sound, light, heat, and motion to collect evidence that energy is present in a system.				
3.PS3.2 Develop a model to show that energy can be transferred from place to place by electric currents in a system (e.g., open, closed, simple, parallel, series circuits).				
3.PS3.3 Evaluate how magnets cause changes in the motion and position of objects, even when the objects are not touching the magnet.				
3.LS1.1 Use graphical representations to compare how species including humans and other organisms have unique and diverse life cycles.				
3.LS1.2 Analyze the internal and external structures that aquatic and land organisms have to support survival, growth, behavior, and reproduction.				
3.LS2.1 Obtain information to compare various ways that groups organize (e.g., specialized roles for members vs same roles for members) to explain the benefits of animal group behavior.				
3.LS4.1 Use evidence to explain the cause and effect relationship between a naturally changing habitat and how well an organism survives.				
3.LS4.2 Use evidence to determine the changes between an environment's biodiversity and human resources.				

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3.ESS1.1 Use data to categorize different bodies in our solar system including inner and outer planets, moons, asteroids, comets, and meteoroids according to their physical properties and motion.				
3.ESS2.1 Develop a model to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.				
3.ESS2.2 Develop a model to describe the cycling of water through Earth's spheres driven by energy from the sun.				
3.ESS2.3 Use tables, graphs, and tools to describe precipitation, temperature, clouds, and wind (i.e., direction and speed) to predict local weather and climate.				
3.ESS2.4 Incorporate weather data to describe major climates (e.g., polar, temperate, tropical) in different regions of the world.				
3.ETS1.1 Design a solution to a real-world problem that includes specified criteria and constraints.				
3.ETS1.2 Apply evidence or research to support a design solution.				
Total				