UNIT TABLES OPTION 1: As presented in the draft for public comment

What causes shadows? What happens when there is no light?

Highlighted Crosscutting Concepts: Cause and Effect, Systems and System Models

Highlighted Science and Engineering Practices:

- *Planning and carrying out investigations*
- *Constructing explanations and designing solutions*

CA NGSS Performance Expectations:

Students who demonstrate understanding can:

1-PS4-2. Make observations to construct an evidence-based account that objects can be seen only when illuminated.
[Clarification Statement: Examples of observations could include those made in a completely dark room, a pinhole box, and a video of a cave explorer with a flashlight. Illumination could be from an external light source or by an object giving off its own light.]

1-PS4-3. Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.
[Clarification Statement: Examples of materials could include those that are transparent (such as clear plastic), translucent (such as wax paper), opaque (such as cardboard), and reflective (such as a mirror).] [Assessment Boundary: Assessment does not include the speed of light.]

K-2-ETS1-3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

*The performance expectations marked with an asterisk integrate traditional science content with engineering through a practice or disciplinary core idea.

OPTION 3: NGSS-Style, but no descriptions in foundation boxes

Grade One – Instructional Segment 3: Shadows and Light

What causes shadows?

What happens when there is no light?

Students who demonstrate understanding can:

1-PS4-2. Make observations to construct an evidence-based account that objects can be seen only when illuminated.
[Clarification Statement: Examples of observations could include those made in a completely dark room, a pinhole box, and a video of a cave explorer with a flashlight. Illumination could be from an external light source or by an object giving off its own light.]

1-PS4-3. Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.
[Clarification Statement: Examples of materials could include those that are transparent (such as clear plastic), translucent (such as wax paper), opaque (such as cardboard), and reflective (such as a mirror).] [Assessment Boundary: Assessment does not include the speed of light.]

*The performance expectations marked with an asterisk integrate traditional science content with engineering through a practice or disciplinary core idea.

The bundle of performance expectations above focuses on the following elements from the NRC document *A Framework for K–12 Science Education*:

Highlighted Science and Engineering Practices	Highlighted Disciplinary Core Ideas	Highlighted Crosscutting Concepts
Planning and Carrying Out Investigations	**PS4.B: Electromagnetic Radiation**	**Cause and Effect** **Systems and System Models**

UNIT TABLES OPTION 2: NGSS-Style but with "Highlighted" Foundations only

Grade One – Instructional Segment 3: Shadows and Light

What causes shadows?

What happens when there is no light?

Students who demonstrate understanding can:

1-PS4-2. Make observations to construct an evidence-based account that objects can be seen only when illuminated.
[Clarification Statement: Examples of observations could include those made in a completely dark room, a pinhole box, and a video of a cave explorer with a flashlight. Illumination could be from an external light source or by an object giving off its own light.]

1-PS4-3. Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.
[Clarification Statement: Examples of materials could include those that are transparent (such as clear plastic), translucent (such as wax paper), opaque (such as cardboard), and reflective (such as a mirror).] [Assessment Boundary: Assessment does not include the speed of light.]

*The performance expectations marked with an asterisk integrate traditional science content with engineering through a practice or disciplinary core idea.

The bundle of performance expectations above focuses on the following elements from the NRC document *A Framework for K–12 Science Education*:

Highlighted Science and Engineering Practices	Highlighted Disciplinary Core Ideas	Highlighted Crosscutting Concepts
Planning and Carrying Out Investigations Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions. ▪ Plan and conduct investigations collaboratively to produce data to serve as the basis for evidence to answer a question.	**PS4.B: Electromagnetic Radiation** ▪ Objects can be seen if light is available to illuminate them or if they give off their own light. ▪ Some materials allow light to pass through them, others allow only some light through and others block all the light and create a dark shadow on any surface beyond them, where the light cannot reach. Mirrors can be used to redirect a light beam.	**Cause and Effect** Simple tests can be designed to gather evidence to support or refute student ideas about causes. **Systems and System Models** Systems have parts that interact.