Science A–Z

LIGHT ENERGY (5–6)

Correlation of Resources to National Science Standards

Use the chart below to discover how selected Science A–Z resources in the Light Energy unit support certain Next Generation Science Standards (NGSS). While a single reading resource, science activity, comprehension support, or lesson cannot satisfy an entire Performance Expectation, using these resources together can help students develop the understandings and abilities they will need in order to satisfy each standard listed below. Most standards cited align with the grade level of this Science A–Z unit. For a reverse correlation tool that connects the standards to resources, visit our NGSS correlations page: www.sciencea-z.com/main/NextGenerationScienceStandards.*

Check the Performance Expectations Key below this chart for the complete text of the standards cited for each resource.

Resource Type	Resource Title	Performance Expectations
Unit Nonfiction Book	*Light* (3 reading levels)	**4-PS3-2; 4-PS3-4; 4-PS4-1; 4-PS4-2; 4-PS4-3; MS-PS4-1; MS-PS4-2**
Process Activity	*Explore Shadows*	**4-PS4-2; MS-PS4-2**
Process Activity	*Refraction*	**4-PS4-2; MS-PS4-2**
Process Activity	*Shadows and Earth's Surface*	**5-ESS1-2**
Process Activity	*Spinning Color Disks*	**4-PS4-2; MS-PS4-2**
Investigation Pack	Topic: Properties of Light Energy I. Files: *Visible Light; Infrared Radiation; Radio Waves; Gamma Rays* Mystery File: *Seismic Waves*	**4-PS3-2; 4-PS4-1; 4-PS4-2; 4-PS4-3; MS-PS4-1; MS-PS4-2**
Debate	*Light Bulbs*	**4-ESS3-1; 5-ESS3-1**
Science Video	*Perceiving the Visible Spectrum*	**MS-PS4-2**
Science Video	*Wearing Red: An Olympic Advantage?*	**4-LS1-2**
Career Files	*Pyrotechnician; Photographer; Eye Surgeon; Lighting Designer*	**4-PS4-2; MS-PS4-2**
Quick Read	*DVDs* (3 reading levels)	**4-PS4-3; MS-PS4-3**
Quick Read	*How Sunscreen Works* (3 reading levels)	**MS-PS4-2**
Quick Read	*Insect Eyes* (3 reading levels)	**4-PS4-2; 4-LS1-2; MS-PS4-2**
Quick Read	*Sunglasses* (3 reading levels)	**MS-PS4-2**
Quick Read	*Telescopes* (3 reading levels)	**4-PS4-2; MS-PS4-2**

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Resource Type	Resource Title	Performance Expectations
Science Diagram	*Electromagnetic Spectrum*	**4-PS4-1; 4-PS4-3**
Science Diagram	*How Light Interacts with Objects*	**MS-PS4-2**
Science Diagram	*How Rainbows Form*	**4-PS4-2**
Science Diagram	*Mixing Colors*	**4-PS4-2**
Science Diagram	*The Sense of Sight*	**4-PS4-2**

Performance Expectations Key

4-PS3-2. Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.

4-PS3-4. Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.

4-PS4-1. Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move.

4-PS4-2. Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.

4-PS4-3. Generate and compare multiple solutions that use patterns to transfer information.

4-LS1-2. Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.

4-ESS3-1. Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.

5-ESS1-2. Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.

5-ESS3-1. Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

MS-PS4-1. Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.

MS-PS4-2. Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.

MS-PS4-3. Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.