6.1 Light and Matter

Content Area: **Science**
Course(s): **Science 6**
Time Period: **Marking Period 1**
Length: **20 days**
Status: **Published**

Established Goals/Standards

Please choose the appropriate Goals/Standards from the Standards tab above.

SCI.MS-PS4-2	Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.
SCI.MS-LS1-8	Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.

Technology Standards

TECH.8.1.8.A.1	Demonstrate knowledge of a real world problem using digital tools.
TECH.8.1.8.A.2	Create a document (e.g., newsletter, reports, personalized learning plan, business letters or flyers) using one or more digital applications to be critiqued by professionals for usability.
TECH.8.1.8.A.3	Use and/or develop a simulation that provides an environment to solve a real world problem or theory.

NJ 21st Century Life and Careers/NJ Career Readiness Practices

CAEP.9.2.8.B.3	Evaluate communication, collaboration, and leadership skills that can be developed through school, home, work, and extracurricular activities for use in a career.

Interdisciplinary Connections

ELA/Literacy -

RST.6-8.7	Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table). *(MS-PS1-1)*

Mathematics -

MP.2	Reason abstractly and quantitatively. (MS-PS1-1)
MP.4	Model with mathematics. *(MS-PS1-1)*
6.RP.A.3	Use ratio and rate reasoning to solve real-world and mathematical problems. *(MS-PS1-1)*
8.EE.A.3	Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. *(MS-PS1-1)*

Essential Questions

- How do we see?
- How does light travel?
- Why do we sometimes see different things when looking at the same object?

Enduring Understanding

- Light waves travel through space.
- The structures of materials determine their properties.

Content

- Humans see by interpreting wavelengths that are reflected off objects.
- Waves can be absorbed, reflected, refracted, or transmitted through an object
- When light shines on an object, it is reflected, absorbed, or transmitted through the object, depending on the object's material and the frequency (color) of the light.
- The path that light travels can be traced as straight lines, except at surfaces between different transparent materials (e.g., air and water, air and glass) where the light path bends.
- A wave model of light is useful for explaining brightness, color, and the frequency-dependent bending of light at a surface between media.

Assessment

Summative: Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.

Formative Assessments

- Participation/Observations
- Questioning
- Discussion Circles
- Science Notebook
- Exit Slips
- Peer/Self Assessment
- Rubrics
- Teacher-created project-based assessment
- Turn & Talk

Alternate Assessments

- Teacher-created project-based assessment
- Alternate running records
- Discussion Circles
- Turn and Talks

Benchmark Assessments

- Teacher-created assessment

Accommodations and Modifications

Accommodations and Modifications according to student IEP, 504, I&RS goals, and/or gifted status.

Resources

- Investigation of glass and mirrors
- OpenSciEd phenomenon 2 way mirror
- Student created models and discussion ~ how the human eye works