

NGSS Performance Expectation		In this unit, students:
1-PS4-2	Make observations to construct an evidence-based account that objects in darkness can be seen only when illuminated.	Explore how different amounts of light affect how easily they can see the details of an image.
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.	Investigate various materials to determine which block light, let some light through, or let all light through.
1-PS4-4	Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.	Plan and create a school reminder as part of their nightlight design.
K-2-ETS1-1	Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.	Learn that people prefer different amounts of light when they sleep and design a two-sided nightlight for sleepers sharing a room.
K-2-ETS1-2	Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.	Consider how a box-shaped nightlight can allow for two users' preferences.
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.	Examine and analyze nightlight designs to see how well they meet criteria.



Crosscutting
Concept

Cause and Effect

Events have causes. Establishing causal relationships is integral to building scientific understanding of observed phenomena and applying that knowledge to engineering problems. In this unit, students investigate the question, “How can we change the amount of light that we see?” They learn that materials can be categorized by how much light they let through and use this information to select appropriate materials for a nightlight that lets out two different amounts of light.