

Engineering Bandages Connections to Next Generation Science Standards

| NGSS Performance Expectation | | In this unit, youth: |
|------------------------------|---|--|
| 2-PS1-2 | Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose. | Investigate which materials work well for the adhesive layer and absorbent pad of a bandage. |
| 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 the characters in the story need a bandage to cover a cut. They identify two parts of a bandage (adhesive layer and absorbent pad) and their functions. They design a bandage that solves the characters' problem. |
| 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. | Test bandage size and pad placement to determine if it functions well to protect a cut. |
| 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 bandage designs to see how well they meet criteria. |



Structure and Function

In this unit, youth explore how the structure of bandage components (adhesive layer, absorbent pad) relates to their specific functions in wound protection. They investigate materials properties to determine how suitable they are for different bandage parts. Through testing, youth anayze how the size and placement of materials, and material choices, affect each component's function.

Connections to NGSS



Systems and System Models

In this unit, the bandage youth design is a system with two parts (adhesive and absorbant pad) that must work together to protect a wound. Youth take part in systems thinking as they design and test their bandages, consider how the parts interact, and how changing one part could affect the overall performance.



2