

LINCOLN PUBLIC SCHOOLS
Engineering Learning Expectations: Grade 1

Strand

Sturdy Structures

Massachusetts Standard:

Students will understand that materials both natural and man-made have specific characteristics that determine how they will be used.

Big Ideas

- ❑ Technology and Engineering uses math, science and creativity to solve problems.
- ❑ Technology and Engineering makes life easier or better through engineered products.
- ❑ The Engineering Design Process is used to design prototypes that solve specific problems.

Key Outcomes

- ❑ Students will develop an understanding of **what makes a sturdy structure** by planning and building a structure that maintains its shape over multiple tests.

Essential Knowledge and Skills

Students will be able to:

- ❑ Use the engineering design process to guide their work.
- ❑ Demonstrate what engineers do.
- ❑ Work as a team to plan, build and redesign a prototype.
- ❑ Communicate their results in multiple ways such as oral reports, prototype demonstrations, sketched or digital pictures and simple videos.
- ❑ Describe the properties of materials and their importance in engineering prototypes.
- ❑ Describe the properties of a sturdy structure.
- ❑ Use tools and various materials to build a sturdy structure.
- ❑ Know that a sturdy structure keeps its shape.
- ❑ Identify and describe characteristics of and possible uses for of natural materials (e.g., wood, cotton, fur, wool) and human-made materials (e.g., plastic, Styrofoam).