

# Unit III: Engineering is Elementary

Content Area: **Science**  
Course(s): **Science K**  
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## Enduring Understandings

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Engineering is useful.

It helps students demonstrate understanding and 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.

Students can analyze data from tests of an object or tool to determine if it works as intended.

## Essential Questions

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What is Engineering?

How is engineering useful in our everyday lives?

## Content

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Internet Resources:

✘ <https://www.youtube.com/watch?v=bipTWWHya8A>

✘ <https://www.youtube.com/watch?v=owHF9iLyxic>

Students will familiar themselves with Engineering Unit of Study: Just Passing Through: Designing Model Membranes

Engineering Design Standards K-2

K-2 ETS 1: Students who demonstrate understanding can: 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.

## Science and Engineering Practices

- Ask questions based on observations to find more information about the natural and/ or designed world.
- Define a simple problem that can be solved through the development of a new or improved object or tool.
- Develop a simple model based on evidence to represent a proposed object or tool (i.e. diagram, drawing, physical replica, diorama, dramatization or story board.)
- Analyze data from tests of an object or tool to determine if it works as intended

## NGSS

### Disciplinary Core Ideas

- A situation that people want to change or create can be approached as a problem to be solved through engineering.
- Asking questions, making observations, and gathering information are helpful in thinking about problems.
- Before beginning to design a solution, it is important to clearly understand the problem.
- Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for problem's solutions to other people.
- Because there is always more than one possible solution to a problem, it is useful to compare and test designs.

## **Skills**

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### Science and Engineering Practices

- Research a simple problem that can be solved through the development of a new or improved object or tool.
- Ask questions based on observations to find more information about the natural and/ or designed world.
- Create a simple model based on evidence to represent a proposed tool or object
- Develop a simple model based on evidence for example: diagram, drawing, diorama, or story board.
- Analyze data from tests of an object to determine if it works as intended if not make the necessary adjustments as needed.

## **Standards**

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SCI.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.

SCI.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.

SCI.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.