

Virtual **STEAM**

Science and Engineering

Straw Bridge Challenge

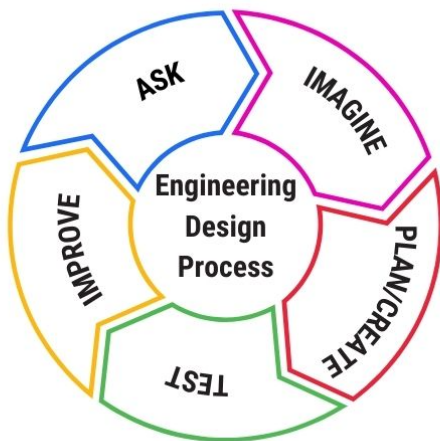
Goal: I can build a straw bridge to hold as much weight as possible.

Science Indicator: SC.2.3.1.C Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each perform

Engineering Indicator: K-2ETS1-1: 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.

Materials:

- 25 - Straws
- 1 - Colored Masking Tape
- Weights such as: toys cars, rocks, pens, pencils - (not included)
- Scissors - (not included)
- 2 tables or chairs - (not included)



Book Extension:

[Be a Maker](#)
by Katey Howes

Instructions:

1. Watch YouTube Video for background knowledge:
"Straw Bridges"
<https://www.youtube.com/watch?v=keM4UJ4eFfo>

2. **ASK:** Can you think like an engineer and design a bridge out of straws that would be strong enough to support weight?
3. **IMAGINE/DESIGN:** Think about the structure or design of a bridge that would be able to withstand a lot of weight. Sketch out a plan for your ideas.
4. **CREATE:** Use the straws to build your bridge. You can cut and tape the straws however you want.





5. Use 2 tables or chairs placed 10 inches (about the size of a piece of paper) apart for your bridge.
6. Place your bridge ends on the 2 tables or chairs.
7. Place weights one at a time on your bridge. Carefully continue putting them on until your bridge collapses.
8. **IMPROVE:** Make adjustments to your bridge to try to hold more weight.
9. Document the challenge using video, photos, drawings, etc.
10. Have fun!

Lesson Extensions:

- What could you add to your bridge to make it stronger?
- Research bridge designs that are known as the world's strongest. What makes those bridges so strong?

Social Emotional Connection:

- **Hard Work/ Perseverance/ Resilience**
When we continue to do something despite difficulties that may arise and we don't give up. This lesson shows students that hard work teaches us to be strong and resilient like the bridges they designed today and to never give up!

