

Name: _____

Date: _____



Week 8 - Straw Bridges

Materials:	Amount (per trial):
Plastic Straws	20
Scotch Tape	1 roll
Scissors	1-2
Marbles	120
Basket	1
Yarn	1 roll
Ruler	1

Procedure:

1. Listen to the SCouts talk about how the shapes in structures help give strength.
2. Brainstorm and plan your bridge by talking with your group and making sketches of your bridge.
3. Using straws, tape, and scissors, work with your group to try and build the straw bridge.
4. When you have finished your bridge, give it to the SCouts to perform the strength test!

The Bridge Strength Test

1. Make a 6 inch gap between desks to place the bridge over.
2. Tie yarn around the middle of the bridge, and hang the basket from the yarn.
3. Start adding marbles to the basket until the bridge collapses. Be sure to count!
4. Observe the bridge, and record how many marbles it took to break the bridge.

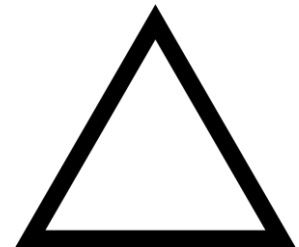


What is the strength of a structure?

Structures such as a tower or a bridge need to be strong. Their **strength** allows them to stand up and hold their own

weight. To build strong structures, engineers can use certain shapes to help spread out the **forces** on structures and increase **strength**.

Question 1: Which of the following shapes is the **strongest**? Circle it!



Question 2: Imagine and Plan!

Sketch what your bridge will look like. Do this with your teammates before building to better plan everyone's ideas.

Bonus Questions: Think like an engineer!

How many marbles did your bridge hold? How could you **improve** your bridge?