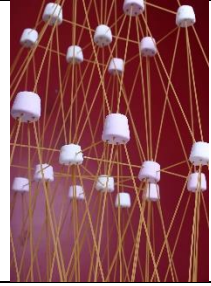


Engineering Experiments

Experiment 1: Leaning Tower of Pasta



Have you ever wondered how really tall buildings stay up? Why do sky scrapers not fall down when wind hits them? Engineers work with architects and scientists to understand what makes materials break, and then use what they learn to design strong structures. Today, you will have the opportunity to figure out how to make a strong structure, too. Using spaghetti and marshmallows, experiment with different structures to determine which ones are able to handle the greatest amount of load.

Materials:

- 20 unbroken pieces of uncooked, long pasta, such as spaghetti, linguine or fettuccini (plus spares)
- 30 small marshmallows (plus spares)
- measuring tape or ruler
- weights or small books

Experiment:

1. There are no step-by-step instructions for this project. Build a tower as high AND as strong as you can using only a limited supply of spaghetti (or linguine or fettuccini) and marshmallows. You can do whatever you want with the materials to try to build a structure as tall, stable and strong as possible.
2. Before testing your structure you may want to measure and record the height and weight of your structure.
3. Then test the strength of your structure. How much weight does it support? Five grams? 10 grams? 20 grams? 30 grams?

Questions to think about.

Which geometric shapes seemed the strongest for holding weight — triangles, squares, or circles?

