

## **Marshmallow Tower Activity**

With this great hands-on experiment, kids will have the opportunity to build a tall tower using only marshmallows and toothpicks. This activity is perfect for one student or groups of 3-4 students. It helps teach communication and critical thinking skills.

**What's the Science?** Marshmallow Tower incorporates engineering design, team problem solving and fine motor skills.

### Materials:

1. Half a bag of mini marshmallows per student (or per group)
2. 50 (or 100) wooden toothpicks

### Instructions:

1. Each kid or team will be given the marshmallows and toothpicks to build the tallest tower possible.
2. The tower must be able to stand on its own without any helping hands or another object (freestanding). This means no holding the tower or leaning it against another object.
3. Add a competitive edge to the event by setting a time limit for the kids to build the tower. We recommend around 10 minutes, but feel free to assign any time frame you'd like.
4. Here's helpful hint! Print out some pictures of famous buildings or towers from around the world to help get the kids thinking about different structural designs.
5. After the towers are built, measure all the towers to determine the tallest.
6. Spark discussion by asking what shapes you can make with marshmallows and toothpicks that might make a good design for a tower. Try to encourage the comparison of triangles and squares to see which is the strongest.
7. Lab Extension: Test how much weight the structure can hold by placing a few pennies in a margarine tub lid and setting it on top of the tower. Add pennies one by one and see how many it takes to bust the tower!

### Alternatives:

1. Draw a 5" x 5" square on a piece of paper and hand out to the students or teams. They should build the tower in this square and the base can not go outside this square.
2. Introduce "client change" – Students have 10 minutes to construct the tower. When only 2 minutes are left for construction, have the students use 2 – large marshmallows. They must use them both somewhere in their tower.
3. Assign a dollar value to the toothpicks and marshmallows. Make the activity more like a project with a budget and the students can "buy" more materials if needed, they get an "incentive" (extra money) if they finish ahead of schedule, etc.