



Civil Engineering Instructions

(Marshmallow Challenge)

Time Allowed: 20 minutes total

Objective: To construct a tower as high as possible using only spaghetti and masking tape. The marshmallow must be placed on the top of the tower. The tallest tower still standing unassisted wins.

Opening Instructions:

Divide the students into groups of 3. If you have an uneven number you may have a group of 4, but no more than 4 students per group. Two groups can share a table.

“One of the keys to starting a successful business is teamwork and problem solving. This requires creativity, innovation and thinking outside the box, but also being able to develop a plan and execute it as a team.

In the Marshmallow Challenge your team is going to have 20 minutes to work together to construct a spaghetti tower that has a marshmallow on the top. The winning team will have the tallest tower standing unassisted. Here are the rules:

1. Your team may only use the materials provided. This includes one yard of masking tape, 25 sticks of spaghetti, and your marshmallow.
2. You may not use any other materials to assist in the support of your tower.
3. You will have only 20 minutes. Marshmallow must be on the top of the tower when time is called and your tower must be standing unassisted.
4. Measurement is a vertical measurement from the table top up.
5. You may stick masking table tape to the table top.
6. Spaghetti may be broken into smaller pieces. However, once broken, pieces may not be replaced.

Ok, remember 20 minutes, tallest tower wins, marshmallow must be on top, and no cheating! You may begin”

During team activity: Monitor team progress and remind tables of the rules if necessary.

Completion of team activity: When two minutes remain, give an announcement that there are two minutes remaining. Then also at one minute. When time is called, measure the height of each teams’ tower. Declare a winning team.

Summary: You may want to ask a couple of teams that were successful, what was their secret? Discuss challenges and things they would do differently next time.

Close with this wrap up.

“The Marshmallow Challenge is an activity done to help business leaders realize the power and challenges of team problem solving. Thousands of groups have done the activity and there have been some interesting statistics that have come out of these studies.

1. One of poorest performing groups on average are College graduates with Business Majors (an average of 20 inches.) The reason...they have been told that problem solving is a linear solution where you plan, and then execute a plan. They work to the very end, place their marshmallow on top and have either an “aha moment” or more often an “oops moment”.
2. One of the best performing groups is another group of graduates...graduates from Kindergarten. Kindergarteners average 30 inches. Why, because they have a natural instinct to prototype. Much like when playing with blocks as a toddler. They start with the marshmallow and build up. Plus they don’t have the natural power struggle within their teams that adults develop.

Clean Up: Bring a trash can around and pick up all the materials.