

Engineering Design - Marshmallow Tower

*Adapted from [Marshmallow Challenge](#)

Design Statement

In eighteen minutes, your team must build the tallest free-standing structure out of 20 sticks of spaghetti, one yard of tape, one yard of string. The structure must support a single marshmallow at its top.

Testing Conditions

Structures must be free-standing, they cannot attach to any other structures (desks, walls, etc). Measurements will be made from the base of the structure to the top of the marshmallow. The entire marshmallow must be on top of the structure.

Standards

Not all of the items must be used, no other items can be added to your structure.

Stage 3: Discussion

- 1) Why were some groups more successful than others?
- 2) What seemed to be the most important factor for the successful designs?
- 3) If you could have one additional item to improve your design, what would it be?
- 4) When this challenge was given to engineering majors at a university, many of them failed to make structures that were measurable. In comparison, kindergarteners given the same challenge tend to do very well. Why do you think younger kids might do better than trained engineers?

Possible Extensions

- 1) Use fettucine instead of spaghetti
- 2) This challenge can also be repeated using 3x5 notecards and no marshmallows. Just measure the tallest structure

Other Design Challenges

[Egg Catcher](#)

[Mobile Equilibrium](#)

[Mouse Trap Car](#)

[Toothpick Bridge](#)

[Windmill Windup](#)