

TEAM EXERCISE

Spaghetti Tower

A hands-on team challenge in prototyping and rapid experimentation — also known as The Marshmallow Challenge.

Build the Tallest Tower You Can — in 18 Minutes

This exercise provides the opportunity for small teams to work together to solve a simple challenge: build the tallest free-standing structure out of spaghetti, tape, string, and one marshmallow. (Also known as The Marshmallow Challenge)

MATERIALS NEEDED

- Box of spaghetti
- String
- Masking tape
- Bag of Marshmallows, standard size (not mini or jumbo sized)
- Paper lunch bags
- Measuring tape
- Stopwatch or timer
- Work tables for teams

TIME TO COMPLETE

45 Minutes

BUILD TIME

18 Minutes

PARTICIPANTS

Teams of 2-3

KEY CONCEPTS

Prototyping
Piloting a Solution
Rapid Experimentation
Collaboration
Innovation
Creativity

Full instructions, slides, and photos are at marshmallowchallenge.com.

Running the Exercise

Complete information for running this exercise is available at [The Marshmallow Challenge](https://marshmallowchallenge.com) website (marshmallowchallenge.com). The exercise was originally introduced by Peter Skillman at TED and later detailed in a TED Talk by Tom Wujec, who provides detailed instructions, presentation slides, photos, and a link to his talk. Some supplemental notes are listed below.

1 Prepare the kits in advance

Brown paper lunch bags work well for holding the string, 20 pieces of spaghetti, and marshmallows. Hand out the length of tape as you pass out the kits to the teams.

2 Use team selection as a mixer

Have groups form with people they don't normally work with in order to meet new people, or base the teams on daily work groups so they can examine their own team dynamics.

3 Set a few ground rules

No suspending the tower

The tower cannot be suspended from the ceiling, a chair, a table, or anything else. Measurement is taken from the base of the tower to its top — not the floor to the top — so there is no benefit in stacking tables.

Decide whether tape to the table is allowed

Without the ability to tape to the table, towers need some structure to hold their feet together. With it, an anchored base can be built with fewer resources. When taping is banned, some teams build on a carpeted floor so the spaghetti digs in and adds stability.

No sabotage, and no looking up designs

No knocking of other teams' tables, and no searching the internet for tower designs during the build.

Group the veterans together

If some participants have already done the exercise, group them into their own team of veterans and see whether they do any better than the novices — they probably won't.

4 Run a visible timer

Put an 18 minute countdown on the screen for the build time so every team can see the clock.

Debrief

A short slide presentation can be downloaded in Step Two of Tom Wujec's instruction page, or [directly from marshmallowchallenge.com](https://marshmallowchallenge.com). Consider showing the TED Talk video (runtime 6:52) immediately after build time ends, then build on the points below.

How well did the teams work together?

Was it a genuinely collaborative effort, or did one person take over?

How quickly did the team test the marshmallow?

A key to good design is experimentation early in the design process. Without the requisite engineering knowledge of spaghetti bending strength, experimentation is the only method available to build the best tower.

Did the plan survive contact with the spaghetti?

Teams that settled on a design and then built to it without letting experimentation or data alter the plan took a very traditional management approach. In the Lean world, all plans are experiments, which should be flexible enough to change as more is learned.

SOURCE

Originally introduced by Peter Skillman at TED and detailed by Tom Wujec at marshmallowchallenge.com.

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