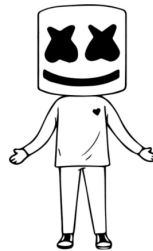


## MARSHMALLOW CHALLENGE



### MAIN FEATURES

Strengthened skills	CONSTRUCT, LEADERSHIP, AIMS
Suitable for	Teachers, students
Difficulty level	Low
Setting	Group
Number of participants	At least 3
Average duration	60 minutes
Special equipment/materials	Yes
Online version	No

## 1. Overview

The Marshmallow Challenge (Skillman, 2006; Wujec, 2010) is a team challenge activity in which teams must compete to build the tallest self-supporting structure using different materials: 20 sticks or spaghetti, one meter of tape, one meter of twine and one marshmallow.

The marshmallow must be placed above the structure

It is quite a challenging activity because it brings people into a condition where they need to collaborate and cope with the problems arising from the construction of the tower.

Students have the opportunity to analyse effective strategies and how their mode of communication has influenced their work.

## 2. Objective / Benefits

The exercise helps to explore the dynamics of cooperation and to reflect on the processes of mutual influence. It also emphasises group communication, leadership dynamics, helps to explore the dynamics of cooperation and innovation processes within the group.

The exercise helps show students that success depends on close collaboration between team members.

## 3. Related SKILLS CLUSTERS

The challenge is based on the team combining various aspects from different clusters of expertise. It is related to CONSTRUCTION since teamwork during the challenge is a process of mutual influence.

The challenge does not assume that there is a leader who takes the lead, but it is a collaborative process of all team members; leadership is shared by the different members, with them taking leadership at different points; as such, it is related to LEADERSHIP.

The fact that the challenge is based on a goal to be achieved in the future, "build the highest self-supporting structure", and that different hypotheses are explored during the process is related to all areas of GOAL SETTING.

Last but not least, it is also linked to the focus on SOLUTIONS, as students have to find a solution for the challenge that awaits them.

## 4. How to do the exercise

### *Step 1 / Preparation:*

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*(MANDATORY to explain how to prepare and present the exercise to the participant)*

First, you must create a marshmallow challenge kit for each team. Each kit contains 20 wooden or spaghetti sticks, 1 meter of adhesive tape, 1 meter of twine and 1 marshmallow.

Organise the group into teams of 3 to 6 people. Each team should sit around a table or on the floor. The whole group should work in the same space.

Please explain how the activity works and its goals.

- The activity involved in the construction of the tallest self-supporting structure.
- The tower consists of 20 spaghetti sticks, while the marshmallow must be placed on its top.
- The marshmallow works as an element that can jeopardise the balance of the tower.
- It is light enough to be supported by the tower but can also destabilise it.

The activity must be carried out in a certain period, normally 20 minutes, depending on the characteristics and maturity of the students could be a little more. But be aware of this, as the creators of the challenge suggest that under time pressure, group dynamics emerge more easily and are more evident to both the facilitator and the students.

The team that builds the tallest structure measured from the surface of the table or floor to the top of the marshmallow wins the challenge.

- The tower must stand on its own at the end.
- It should not hang or lean on other objects.

Each team can use the materials at its disposal in the building kit in the way it prefers to build the tower (they can also cut them). However, the marshmallow must be placed at the top of the structure and is the only thing that cannot be broken into smaller pieces. Any team that intentionally cuts destroys, hides or eats its marshmallow is disqualified.

### **Step 2**

Deliver materials to each team, and when they're ready to get started, start the countdown.

Because they need to feel a sense of urgency, remind them of the time that passes periodically.

The original creators of the exercise suggest that time can be called every 12 minutes, 9 minutes (half), 7 minutes, 5 minutes, 3 minutes, 2 minutes, 1 minute, 30 seconds and a ten-second countdown.

### **Final step / Conclusions**

*(MANDATORY to explain what needs to be done to complete the exercise)*

Measure each structure and call heights as you measure.

Once all the measurements have been collected, proclaim the competition's winner.

## **5. Final reflection and**

To facilitate the reflection of the whole group and discuss their process, if you decide to apply the TASC framework, we suggest you ask questions such as the following:

- *How did you work as a group?*
- *How did you distribute your roles?*
- *Who took the lead in the group? Did the leader remain the same throughout the activity? If so, why? If not, how has the role changed?*
- *Did you like the roles you took in the challenge?*
- *How have you successfully contributed to teamwork? What did you do that helped you?*
- *What resources did you appreciate in your team that emerged during the exercise?*
- *What have you learned about yourself and how to deal with problems?*
- *How has your approach or problems changed during the activity?*
- *What insights can you draw from this experience that you could apply in other contexts?*
- *If you decided to deliberately apply the approach you used, which was helpful and effective in making this challenge, what would be the first thing you could do?*

## 6. Specific materials

- 20 spaghetti sticks (per group) (raw).
- 1 meter of rope (per group).
- 1 meter of adhesive tape (per group).
- 1 paper bag or envelope (per group).
- 1 marshmallow (per group).
- Measuring tape.
- a pair of scissors.

## 7. Tips and tricks

Given its purposes, you can also propose this activity in a group of 4-5 people, asking them to work together to build the spaghetti tower. The context and comparison element to find the tallest tower is not a mandatory aspect of this activity.

However, there is no hard and fast rule for team size.

However, make sure your teams are manageable.

Groups of 3 to 6 members usually work efficiently.

Make sure you are very clear about the exercise's goal and clearly communicate the rules.

You'll probably want to repeat the rules a couple of times; people might play with the ingredients and need to pay more attention.

For this reason, we suggest distributing the materials to each team after explaining the rules to them to ensure people stay focused.

You can tell participants that this exercise is conducted by thousands of people, from kindergarten students to top managers of world-leading companies.



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This can help them take it more seriously.

Please consider that version jumbo or mini marshmallows don't work well, so avoid those.  
Also, use fresh marshmallows, as stale ones probably have a different softness.

## 8. Online Version

Not applicable

## 9. Bibliography - Siteography

Skillman P. (2006). Peter Skillman Marshmallow Design Challenge. *TED Talk 2006*, Monterey, California.  
<https://www.youtube.com/watch?v=1p5sBzMtB3Q>

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What a Marshmallow reveals about collaboration:

<https://www.inc.com/the-build-network/build-a-tower-build-a-team.html>

Build a tower, build a team | Tom Wujec. [https://youtu.be/H0\\_yKBitO8M](https://youtu.be/H0_yKBitO8M)

