

EXTENDING THE MARSHMALLOW CHALLENGE: TEAM BUILDING EXERCISE BASED ON DESIGN THINKING

Laurie A. Meamber, lmeamber@gmu.edu
School of Business, George Mason University

Marshmallow Challenge Purpose

Rationale: This challenge has been utilized in various undergraduate and graduate courses in the School of Business and by multiple instructors, including but not limited to: new product development, operations management, and marketing management.

Goals: The purpose for using this challenge has been twofold for new product development:

1. Introduces the concept of design thinking in context of development of innovative/disruptive offerings that address customer needs

Design thinking is a collaborative and systematic process for creative problem solving

2. Encourages team building

Benefits: CHALLENGES ARE FUN AND ENGAGING!

1. Illustrates the design thinking approach that is discussed/used in courses

For example, in the new product development course, students use a design thinking approach to work throughout the semester to develop a new product idea from concept to prototype, and to plan for product launch

2. Promotes collaboration In conjunction with team projects and/or to foster other team work in courses



Example: Mason New Product Development students engaging in a challenge. Photo by Matt Shaner

PHOTO OF VIRTUAL WHITEBOARD HERE
SEE LINK BELOW

Example: Virtual Whiteboard for Online Learners/Virtual Teams.
<https://www.braincert.com/docs/api/vc/>

Extensions for Online Learners/Virtual Teams

1. Use the Marshmallow Challenge and Similar Challenges for Face to Face Learners/Teams by asking online learners/virtual team members to try them on their own or with a (an)other person(s). The challenges can be timed and occur either in a synchronous format or in an asynchronous format. Online learners/virtual team members report their results to the team.
2. Utilize virtual whiteboards to do drawing challenges such as Squiggle Birds (or Squiggle Cats or Squiggle Fish). Drawings can be completed individually, or in virtual rounds where each person adds details to the birds. The challenges can occur either in synchronous or in an asynchronous format. Some whiteboards allow for hybrid online/face to face learning.

Virtual whiteboards have emerged to help distributed teams collaborate online. Some provide zoomable 'murals' on which users can use virtual sticky notes or add images, videos, symbols, labels, and text. All of these elements can be dragged, dropped and clustered, just as they would on a real wall. It allows multiple users to collaborate simultaneously and it includes templates for many design thinking exercises.

Benefits: CHALLENGES ARE STILL FUN AND ENGAGING!

Online learners/virtual team members learn from each other's experiences which can offer some similar lessons but not all – e.g.,

- Don't waste time over- planning
- Learning opportunities involving multiple iterations/trial and error usually outperform the commitment to searching for best answers or making the first idea work
- Foster a "beginner's mind" to unleash ability to be creative and curious
- Try working in parallel teams to learn from others and enhance productivity



Example: Marshmallow Challenge Tower.

PHOTO OF VIRTUAL WHITEBOARD HERE
SEE LINK BELOW

Example: Virtual Whiteboard for hybrid online/face to face learners/teams.
<https://www.firstpost.com/tag/virtual-whiteboard>

Challenge Lessons

- Don't waste time seeking power or over-planning/talking about the problem
- Learning opportunities involving multiple (and sometimes simultaneous) iterations/feedback/trial and error usually outperform the commitment to searching for best answers or making the first idea work
- Different mind-sets/perspectives and skills colliding often produces better results
- Foster a "beginner's mind" to unleash ability to be creative and curious
- Try working in parallel teams to learn from others and enhance productivity

Other Similar Challenges Face to Face Learners/Teams

Index Card Challenge: Create tallest index card tower that is free standing and remains self-supporting for 10 seconds. The tower must hold a stuffed animal.

Paper Airplane Loops: Create a paper airplane using scissors and tape. Make modifications to your airplane so it can perform the most loops before hitting the ground.

Kinetic Sculpture Challenge: Make a sculpture that is at least six inches tall and has two parts that move in the wind or withstands blown air from a fan.

Source: <https://www.madison-schools.com/cms/lib4/MS01001041/Centricity/Domain/410/Jumpstart%20activities%20index%20card%20loops%20catapult%204sculpture.pdf>

Team Building Activities using Lego bricks or other building blocks (beyond "Serious Play Kits") such as:

Basic Tower Challenge: Build tallest structure that stands.

Tower Challenge with Profit: Monetary value given for the height of the tower, but planning time, construction time, materials cost money.

Lego Challenge with individual instructions: Group builds structure with bricks but each person has an assignment not shared with others – e.g., you are the only one allowed to build in the first three layers of the building; you have to make sure that the first layer of the building consists of exactly 10 bricks.

Source: <https://bizfluent.com/list-6311590-team-building-activities-lego-bricks.html>;
<http://toolbox.hyperisland.com/lego-challenge>

Squiggle Birds: Draw squiggles and then try to add beak, eyes, feet, wings, tail.

Source: <http://gamestorming.com/squiggle-birds/>

Acknowledgements

- Matt Shaner, Ole Miss Business, The University of Mississippi, developer of New Product Development Course
- Operations Management faculty that utilize the Marshmallow Challenge, including but not limited to: Cheryl Druehl, and Ioannis Bellos
- Marketing faculty that utilize the Marshmallow Challenge or provided ideas for similar challenges for Marketing Courses including, but not limited to: Jeff Kulick, Ben Diamond
- Students that have learned from the Challenge
- School of Business Marketing faculty members
- ITL Organizers, and Reviewers that recommended providing suggestions for online learners

Selected References

- Anthony, S. Innovation leadership lessons from the marshmallow challenge, Harvard Business Review Online, 09 December 2014. <https://hbr.org/2014/12/innovation-leadership-lessons-from-the-marshmallow-challenge>
- Condoor, S. S., & Keogh, G. (2012, October). Work in progress: Weekly innovation challenge: Changing the mindset one step at a time every week. In *Frontiers in Education Conference (FIE), 2012* (pp. 1-6). IEEE.
- Coakley, L. A., Roberto, M. A., & Segovis, J. C. (2014). Meeting the Challenge of Developing Innovative Problem-Solving Students Using Design Thinking and Organizational Behavior Concepts. *Business Education Innovation Journal*, 6(2).
- Lei, C. U., So, H. K. H., Lam, E. Y., Wong, K. K. Y., Kwok, R. Y. K., & Chan, C. K. (2012, August). Teaching introductory electrical engineering: Project-based learning experience. In *Teaching, Assessment and Learning for Engineering (TALE), 2012 IEEE International Conference on* (pp. H1B-1). IEEE.
- Reeping, D., & Reid, K. (2013, September). The marshmallow metaphor: Iterative design tailored to 6th graders. In *Proceedings of the North Central Section, American Society for Engineering Education Annual Conference & Exposition*.
- Suzuki, N., Shoda, H., Sakata, M., & Inada, K. (2016, July). Essential Tips for Successful Collaboration—A Case Study of the "Marshmallow Challenge". In *International Conference on Human Interface and the Management of Information* (pp. 81-89). Springer, Cham.

Marshmallow Challenge Face to Face Learners/Teams

BEFORE

Teams: Teams of 4

Each team gets: 20 sticks of spaghetti, one yard of tape, one yard of string, and one marshmallow

Challenge: build the tallest free-standing structure

- You have an 18-minute time limit
- The marshmallow must sit on **top** of the structure
- Use as much (or as little) of the materials as you like
- Feel free to break, tear, or cut everything except the marshmallow
- Chairs, tables, etc. don't count in measuring the height of the structure
- You may not hold or support your structure while its being measured

AFTER

Q to the winning team: Why do you think you won?

Q to the other teams: What would you do differently if we did this over again?

DEBRIEF

May wish to use a video, such as a video on YouTube by Peter Skillman (Director of Design for Skype and Outlook) or Tom Wujec (The Wujec Group, Autodesk Fellow, Singularity University Professor)