

## Marshmallow Challenge

### Description:

Understanding team dynamics and design.

### Objective(s):

Students will utilize planning and teamwork to complete a challenge.

### ISTE/NGSS Standards:

4c: Students develop, test and refine prototypes as part of a cyclical design process.

5c: Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.

MS-ETS-1.1: Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

MS-ETS-1.2: Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

# Teq Lesson Plan Activity

## Essential Question(s):

What are the signifiers of a successful group?

## Materials:

- Uncooked spaghetti
- Marshmallows
- String
- Masking tape
- Measuring tape
- Design Engineering process graphic organizer

<https://docs.google.com/document/d/1UYqqzT3aMgdNVb6-zog02Q4mY686WuM-2iHSEfsyLps/edit>  
[https://www.youtube.com/watch?time\\_continue=338&v=H0\\_yKBitO8M](https://www.youtube.com/watch?time_continue=338&v=H0_yKBitO8M)

## Do Now:

Class with either discuss, "What do you think makes a group successful?" or watch the TED talk [here](#) and discuss major ideas of the video.

## Lesson:

1. Students will be challenged to take twenty minutes to build a free standing structure with a marshmallow on top of it. The largest structure being the winner.
2. Students will work alone or in small groups depending on class and student needs.
3. Students will use their graphic organizers to engage in the Engineering Design Process.
4. After twenty minutes, students will show their structures and explain their process.

## Closure:

1. Students will complete reflection section of Graphic Organizer
2. Class will work together to put away materials.

## Extension:

Students will write a plan for improving their tower if activity is continued the next day.