

## The Importance of a Procedure

### Description:

Learning and understanding why procedure and steps are important to design and scientific exploration.

### Objective(s):

Students will discover the importance of procedure in experiments and in building.

### ISTE/NGSS Standards:

4a: Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.

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

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):

Why is it important to write and follow detailed steps in a procedure?

## Materials:

- Cardboard
- Scissors
- Glue
- Tape
- Straws
- Popsicle sticks
- (any other building material)
- Engineering Design Challenge Graphic Organizer

<https://docs.google.com/document/d/1UYqqzT3aMgdNVb6-zog02Q4mY686WuM-2iHSEfsyLps/edit>

## Do Now:

What are the steps of the scientific method?

## Lesson:

1. Class will work in small groups (2-4 students).
2. Each group will have approximately 20 minutes to build a structure of their choice. While they build, they must keep a detailed list of the steps they take to build the structure (students should keep what they're building as secret from other groups as possible).
3. Teacher will collect each group's procedure and redistribute them to different groups.
4. Students will attempt to follow each other's procedures and recreate their classmates' structures.
5. Class will check what they built against each group's original structure and discuss the importance of clearly written steps.

## Closure:

1. Students will complete reflection section of Graphic Organizer.
2. Class will work together to clean up and put away all building materials.

## Extension:

Students will go back to their procedure and rewrite it using what they learned from the second build of their structure.