# Activity 20. Teetering Towers (STEMworks)

1. **Learning outcome(s):** (list up to 3)
   * 1. Solve problems and apply ingenuity.
     2. Communicate and work as a team.
     3. Embrace failure, resilience and persistence.
2. **Relation of activity with the STEM, gender inclusiveness and Entrepreneurship: (text,** not bullets, explaining the relation of the activity to 3 above)

This activity requires teams to use skills central to entrepreneurship and STEM, including creativity, ingenuity, experimentation and communication. This activity offers participants the opportunity to work in a variety of ways that facilitates inclusiveness and necessarily requires good teamwork, communication and creativity without a single "correct" solution. The activity can be used to demonstrate the power of failure, resilience and persistence.

1. **Indicate the area of focus:**

**☒ STEM**

**☐ Gender inclusiveness**

**☐ Entrepreneurship**

1. **Materials:** (including ppts, videos, hands-on material)

* Identical kits of miscellaneous materials (e.g. straws, clothes pegs, dice, dowel, hooks etc.). 1 kit per pair.
* 1cm3 cube
* 1x metre ruler

1. **Preparation:**

Allocate kits and ensure searing allows paired group work.

1. **Duration:** 35 (minutes)
2. **Target group:** 11-14 (student age)

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1. **Description of the activity:**

Objective: build a tower as tall as possible using only the materials provided. This is an entertaining task and should be conducted in a lighthearted manner to foster teamwork and communication. Failure resulting from experimentation should be celebrated.

0-5 minutes: introduce challenge. Students must build their towers on top of the 1cm3 cube provided. You may wish to initially provide a target height (e.g. 0.5 m).

5-20 mins: students can build (and rebuild) their towers. They should be encouraged to be experimental and not fear failure.

20-25 mins: Measure final towers and assess construction strategies.

25-35 mins: Discussion whereby students should be encouraged to reflect on the role they played within their team (leader, follower, arbiter, builder, ideas-generator, critiquer, encourager) and how the team functioned (democratic, unilateral/directive, consultative, consensual). Were there any gender stereotypes? What would they do differently next time? Which team had the best approach?

**9. Link to curriculum:** Teamwork, communication and strength of materials.