

**Pictou County Forest School - Grade 7 Pre-Lesson Plans**  
**Engineering Structures**

**Activity:** Tallest Tower

**Overall Curriculum Outcome:** *Learners will test the strength and efficiency of shapes and materials used in construction.*

**Specific Curriculum connections:**

Features of natural structures

- How do various natural structures compare?
- How are natural structures reflected in manufactured structures?

Features of manufactured structures

- How do engineers use different shapes to improve strength?

Shapes used in construction

- How do shapes impact strength and stability of structures?

Properties of construction materials

- How can advantages and disadvantages of construction materials be determined?

**Materials:**

- Paper (standard computer paper)
- Masking tape
- scissors

**Activity:**

1. Students are divided into pairs/small groups and given a piece of paper and 10cm of tape and given the following prompt: *Build the tallest tower with the materials provided.*
2. After students have had the chance to build their paper towers and observe the towers of their classmates, teachers can now provide the opportunity for students to try the experiment again with the same and/or different variables (e.g., larger paper, different types of paper, more tape etc).

**Instructional moves:**

This activity is intended to be pursued through a lens of collaborative inquiry, allowing students the chance to harness and use ‘trial and error’ and ‘failing forward’ mindsets as they pursue their investigations.

Classroom educators can also decide to pre-teach or provide examples of how folding or rolling the paper in various ways adds rigidity and strength.

Students can be prompted to cut their paper into thinner strips to make their towers taller

Take your class on a structure hunt around your school: triangle truss supports in the gym ceiling; triangle brackets on the coat racks; basketball supports in the gym...