

Pictou County Forest School - Grade 7 Lesson Plans
Engineering Structures

Activity: Tallest Tower (suggested time 120+ minutes)

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:

- Loose parts: rope, dowels, wedges, pulleys
- Tools: saws, hammers, nails, drills, screws, scissors
- Glue, paper,
- Found natural materials
- simple/compound machine infographic

Intro/Activation:

Activity:

This is an inquiry activity, focussing on the idea of learning as a process. Students learn new skills and ideas in real time in response to real, meaningful necessity (intrinsic motivation).¹

Students are to be divided into building teams. Each team is instructed to build the tallest freestanding tower. Tallest tower wins.

All groups can do the same activities together, or activities can be run concurrently in a centres-based approach.

Forest floor materials: branches, sticks etc.	Forest floor materials + rope for lashing	Meadow materials	Other: snow, rocks, gravel, clay
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¹ The Limits of Instruction: "Constructionist research has demonstrated the benefits to students engaged in active learning by doing. The existing literature stresses the importance of a project approach as a precursor to instructional practices or as an ancillary activity to instruction. My work suggests that the project should be an educator's smallest unit of concern and may replace instruction entirely, with better results. This research may also seek to define the limited efficacy of instruction."
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