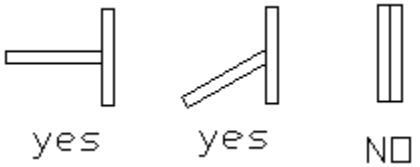
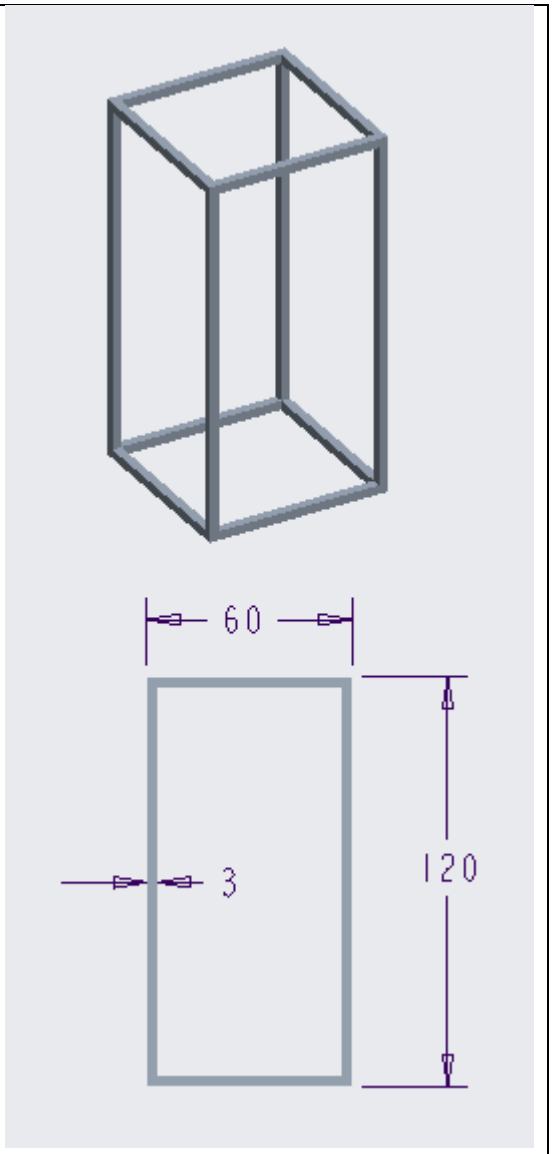
TOWER CONTEST

Objective:
Design and build the lightest tower that can support the greatest load. **It is not the most massive tower that wins – it is the most efficient!**

Rules:
- Work in teams of three students. Sign up your team.
- The tower will be printed on a 3D printer from PLA plastic.
- The tower must be 120 mm tall.
- The base and top of the tower must be a square with 60 mm sides.
- Everywhere between the base and top of the tower must be a square with 60 mm sides.
- The center of the tower must be hollow.
- There may not be any braces across the top or bottom of the tower.
- You may place beams anywhere within these limits.
- Each beam may be any length, but no wider or thicker than 3 mm x 3 mm.
- There must be a gap between beams – they cannot be touching all along the side.



- Towers that do not meet all requirements will get a penalty of at least 50%!
-



Process:
- Your team will design your tower on special graph paper.
- Your design will be given to an Engineering 4 student to put into *Creo Parametric*.
- You will be given a drawing of your computerized design and its mass to review.
- Your design will be printed on your teacher's 3D printer.

Scoring:
- Score = Maximum Weight Supported (N) ÷ Tower Mass (g).
- The lighter & stronger your tower, the better your score!
- Towers will be tested on a machine that will apply a gradually increasing downward force to the tower until it cannot hold any more, or until the testing machine reaches its limit (about 800 lb).