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Tower building Activity

Introduction: Through your research, you have learned that a triangle is the strongest geometric shape. You have also learned that a truss is two or more triangles connected together in a straight line. For this engineering activity, you will need to design and build a vertical truss that fits all of the design criteria and supports the most weight.

Materials

- One piece of balsa wood 1/8" x1/8" x 36"
- 60 tooth picks
- Limited amounts of glue….excessive use of glue will be disqualified and result in a poor grade.

Design

The groups must design a full scale drawing on a piece of graph paper. The drawing must:

- Be in pencil
- Use a straight edge
- Show the thickness of the materials (Note A on the next page)
- Show a center line: the base of the tower must be at least 1" from either side of center (Note B on the next page). And the top of the tower must be at least ½" from either side of center. (Note C on the next page)
- HINT: A symmetrical design will work best and be the strongest
- NOTE: A toothpick is 2 5/8" long

Tower constraints

- The tower must be between 6" and 8" tall
- The tower must have three or four sides.
- The tower must be able to span a 2" diameter hole at the base
- The tower must have a 1" hole at the top

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Research possible designs for your structure and make four possible prototypes. Write a brief statement as to why this structure will be a successful design. Choose one of the prototypes and develop a scale model on the back of this paper to scale using a ruler. The quality of the drawing is extremely important for this project.

Statement:	Statement:
Statement:	Statement:

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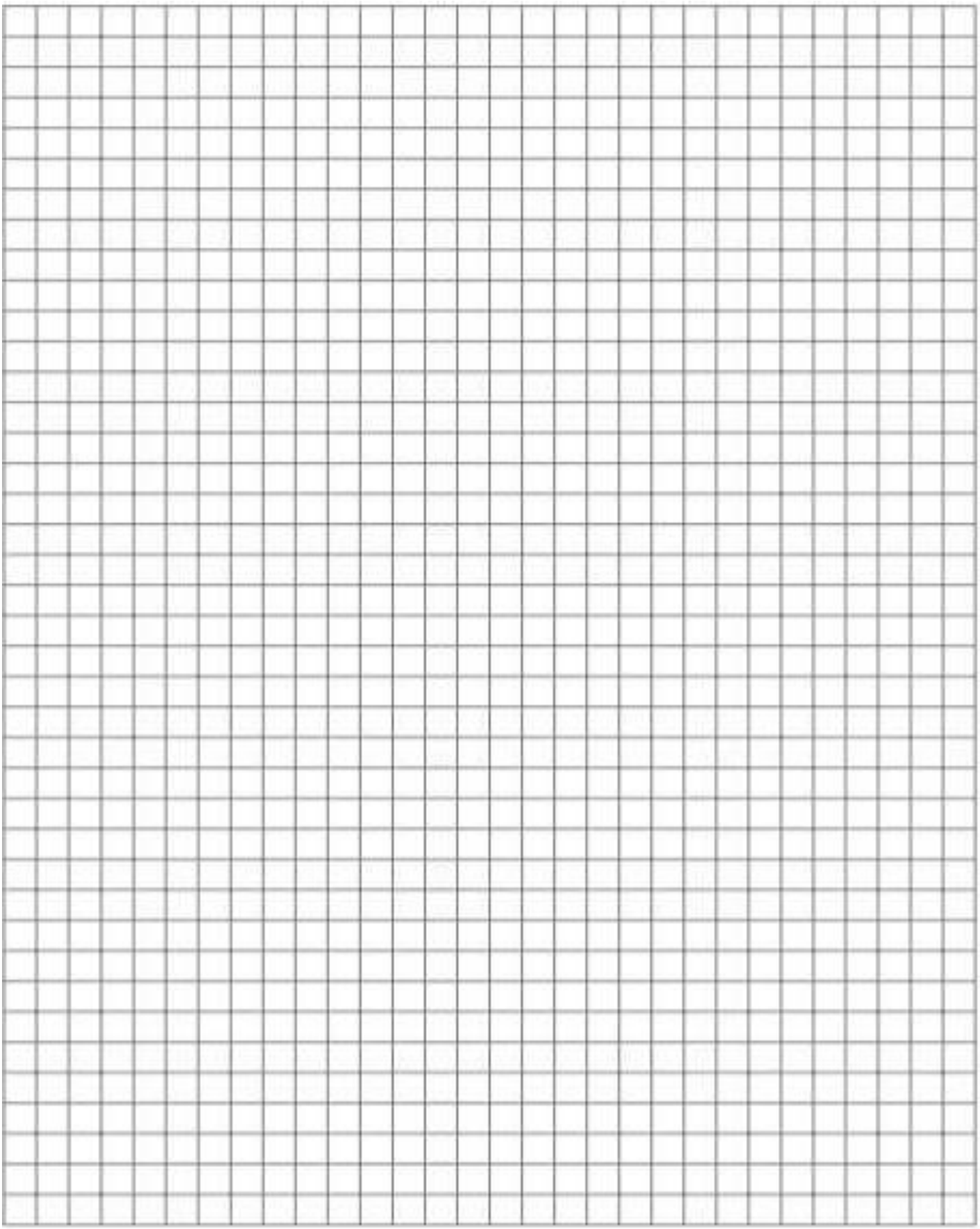
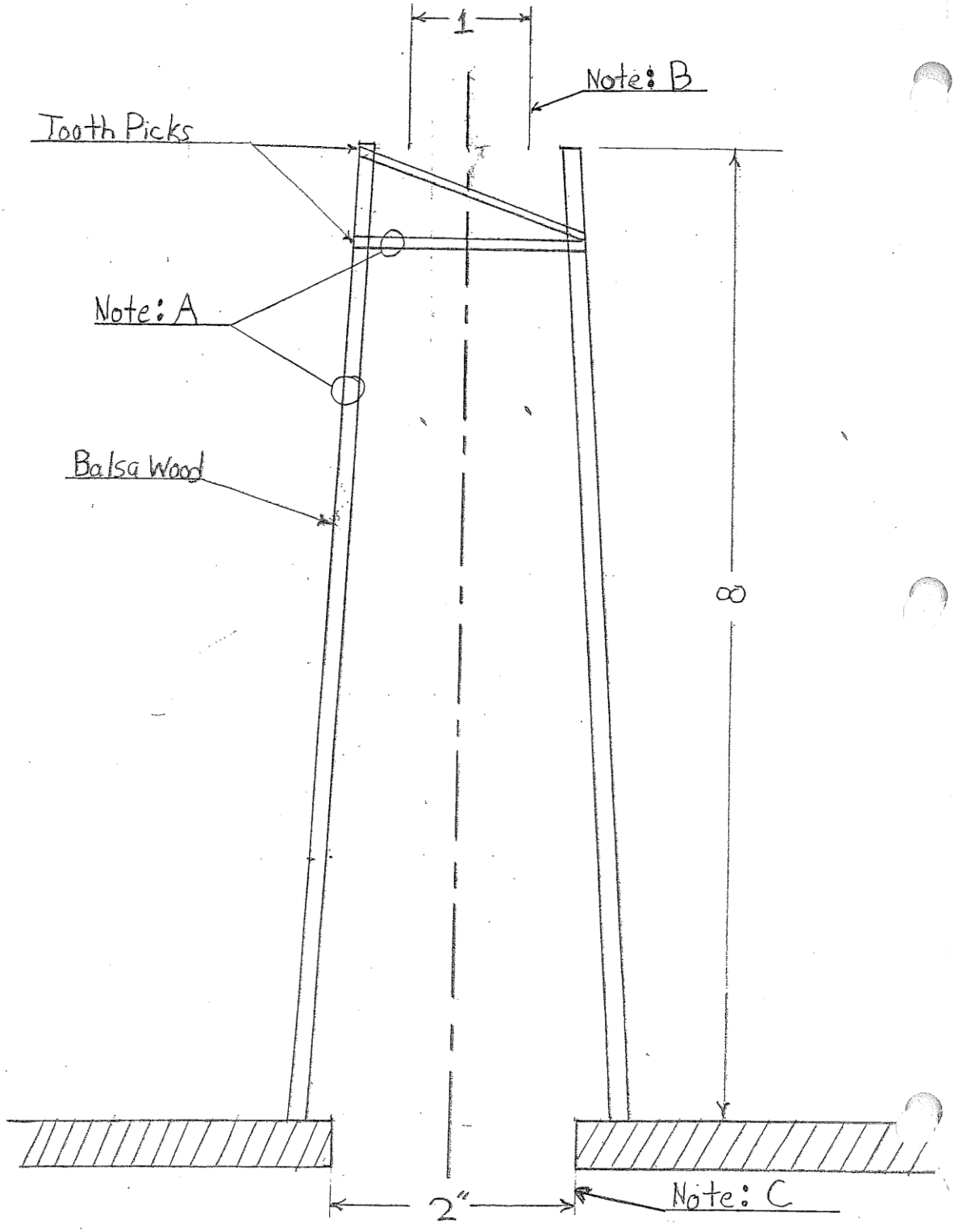


Name: _____ Date: _____ Period: _____



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Basic Web Configurations

MiTek 20/20 Truss Shapes

Truss Types