**Build a Tree House**

Project:

You have 1400 square feet of wooden boards for a new tree house.

Design a tree house that has a surface area as close to 1400 square feet as you can, and a volume of at least 250 cubic feet.

**You may use lined paper, graph paper or plain paper to complete this project. At each stage of the design process write at least 2 complete sentences about what you are thinking.**

**DIRECTIONS**

1. **SKETCH**: Sketch 3 different tree houses.

**Journal about what you are thinking.**

1. **RESEARCH:** Think about how to find the area of composite figures. How do you find the area of composite figures? (Look back in your notebook)

Write down how to find the area of rectangles, triangles, parallelograms and trapezoids.

1. **DRAW AND CALCULATE:** Decide on the shape of your dream tree house! Will it have an open front? Cut outs for a window and a door?

Using a ruler draw your tree house. Label the length, width and height of each section.

Find the surface area of your tree house.

Find the volume of your tree house.

**Journal about what you are thinking.**

1. **REVIEW:** If you tree house does not meet the requirements at the top of the page, what will you do differently?

**Journal about what you are thinking.**

1. **REDESIGN**: Improve your design. How have you improved it?  
   Is it closer to a surface area of 1400 square feet and a volume of 250 cubic feet now?

**Journal about what you are thinking.**

**RUBRIC**

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| SKETCH SHEET | 3 different sketches of tree houses | /3 |
| DRAWING 1 | Dream Tree House drawn WITH a ruler.  Measurements in feet used.  Surface Area found.  Volume found. | /5 |
| REDESIGN 1 | NEW Tree House drawn WITH ruler  Measurements in feet used.  Surface Area found.  Volume found. | /5 |
| JOURNAL | Complete sentences used to document thoughts and ideas at each stage of the design process. | /5 |
|  | SCORE: | /18 |