

# First Place in the Math Division at the Upper Cumberland TECH Science Fair

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Upper Cumberland TECH Science Fair Project Synopsis

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## How Do Geometric Shapes Impact Livable Areas?

The basis of this project at the Upper Cumberland Science Fair was to develop an equation to calculate the total interior area of any geometric shaped house. Through this, I created an equation for a whole shape and subtracted it by the wall area of the shape and then multiplied those equations by the number of sides. As the result, I came up with the following:

$$N \left[ \frac{B^2}{4} \text{Tan}(\theta) - BW - \frac{W^2}{\text{Tan}(\theta)} \right]$$

