

# M151 - Modeling With Geometry

## Badge Specific Essential Concepts

- ❖ Experiencing the mathematical modeling cycle in problems involving geometric concepts, from the simplification of the real problem through the solving of the simplified problem, the interpretation of its solution, and the checking of the solution's feasibility, introduces geometric techniques, tools, and points of view that are valuable to problem solving. [NCTM Essential Concept EC.GM.SAPM.2]

## Administration Notes

This Pre-Post Task is to be used as a tool for students to understand their learning. When administering this task, it is important to highlight a few things for students:

- Students will have the opportunity to complete the task at the beginning and the end of this badge. This is because we want students to be able to see how much they've learned and reflect on that learning in ways that matter to them.
- The work on the task will not be graded. The task is not a quiz or a test - it is designed to support students in understanding how much they have learned from the beginning of the badge to the end.
- Students can have access to any technology that they typically use during classroom instruction to complete this task.
- Students should work individually on the task.

Please share these things with students, reinforcing the idea that this task has been designed to support them in reflecting on the mathematics they have learned. In some tasks, students may create work in different places. It is helpful for them to have their own online folders to store their pre-post tasks as well as any supporting artifacts, such as screenshots from online tools that they use.

## Task Analysis

The purpose of the task analysis section is to report on student performance at two points in time -- before and after badge instruction. Complete a table for each student based on an analysis of their responses. You can create summary data for yourself if you choose to understand more globally how students are doing on the concepts measured by the task.

**PRE**

Were there any interesting or instructionally useful responses or insights from students? Please record those here:

Question/Look For	Blank or similar	Emerging	Approaching	Meeting	Other Notes
(1) Student is able to create 2 reasonably sized, scaled floor plans with an area of 144 ft <sup>2</sup> each.					
(2) Student is able to add scale drawings of a full size bed and reasonably sized nightstands to the floor plan.					
(3) Student is able to create a reasonably sized, scaled floor plan with an area of 160 ft <sup>2</sup> . Floor plan includes scaled drawings of a queen size bed and reasonably sized nightstands. Student is able to calculate the area of the unused floor space.					
(4) Student is able to calculate the area of the unused floor space after drawing in new accessories to scale by subtracting the areas of these accessories from the area in the previous question.					

## POST

Were there any interesting or instructionally useful responses or insights from students? Please record those here:

Question/Look For	Blank or similar	Emerging	Approaching	Meeting	Other Notes
(1) Student is able to create 2 reasonably sized, scaled floor plans with an area of 144 ft <sup>2</sup> each.					
(2) Student is able to add scale drawings of a full size bed and reasonably sized nightstands to the floor plan.					
(3) Student is able to create a reasonably sized, scaled floor plan with an area of 160 ft <sup>2</sup> . Floor plan includes scaled drawings of a queen size bed and reasonably sized nightstands. Student is able to calculate the area of the unused floor space.					
(4) Student is able to calculate the area of the unused floor space after drawing in new accessories to scale by subtracting the areas of these accessories from the area in the previous question.					