

Choosing a Scale Worksheet **Example Answers**

1. Measure and record important dimensions of your object. Pick appropriate units and record them. The *dimension column* might include height, length, width, radius, etc. In the *measurement column*, record the measured number. In the *units column* indicate the units of your measurements.

Note: You do not necessarily need to fill in all rows; just make sure you get all the information you need to build an accurate model.

Dimension	Measurement	Units
length	8	inches
width	5.25	inches
height	0.875	inches

2. Choose a scale factor and then calculate the scaled dimensions of the object. Do this for two different scale factors that you could potentially use for your project.

Scale factor: 6

Dimension	Original Measurement (indicate units)	Scaled Measurement (indicate units)
length	8 inches	48 inches
width	5.25 inches	31.5 inches
height	0.875 inches	5.25 inches

Scale factor: 5

Dimension	Original Measurement (indicate units)	Scaled Measurement (indicate units)
length	8 inches	40 inches
width	5.25 inches	26.25 inches
height	0.875 inches	4.375 inches

3. Consider the scaled measurements you calculated for the two different scale factors and decide which is more reasonable to use for your final project. Explain your logic.

Example answer: A scale factor of x5 is slightly more reasonable, but still has large dimensions. However, the biggest dimension is 40 inches, which is just 3.33 feet. I think I can find materials to build a model of my object with this scale factor easier than a scale factor of 6 times bigger.

4. **Engineering Drawings:** Now that you have chosen an object and a scale factor for the final project, produce engineering drawings of your object.
- Make at least two different drawings, such as views of different sides, base or top of the object.
 - Do all the drawings on graph paper.
 - Pick a scale for your drawing. Choose a scale so that the object fits on one piece of paper and takes up most of the paper. Example drawing scale: one graph paper square = 1 inch.
 - Include on your drawing your name, drawing title and scale.
 - See the teacher-provided example engineering drawing, which is also reproduced below in smaller scale.

