**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 |
|  |  |  |
|  |  |  |

1. 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.

**6**

Scale factor: \_\_\_\_\_

**5**

|  |  |  |
| --- | --- | --- |
| **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: \_\_\_\_\_

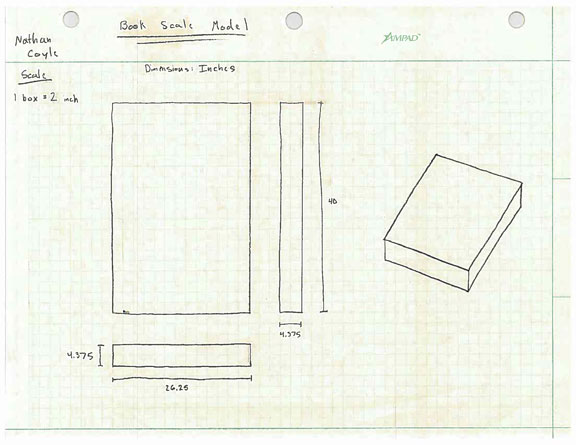
|  |  |  |
| --- | --- | --- |
| **Dimension** | **Original Measurement**  **(indicate units)** | **Scaled Measurement**  **(indicate units)** |
| length | 8 inches | 40 inches |
| width | 5.25 inches | 26.25 inches |
| height | 0.875 inches | 4.375 inches |
|  |  |  |
|  |  |  |

1. 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.

1. **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.

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