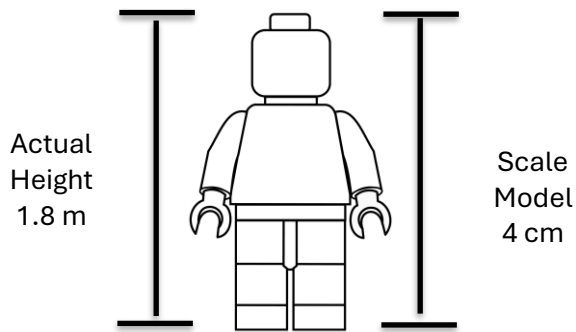


Building Worksheet: Scale Model Project

Instructions: Use this worksheet to guide your construction process during the building phase. Follow the steps outlined and document your progress, challenges, and solutions.

Rescale (Drawing to scale model)

What is the scale of 1 cm in our scale model compared to the actual structure?



$$\begin{array}{l} \text{Actual Height} \\ \text{Scale Model} \end{array} \begin{array}{l} \boxed{1.8 \text{ m}} \\ \boxed{4 \text{ cm}} \end{array} = \frac{180 \text{ cm}}{4 \text{ cm}} = \frac{45 \text{ cm}}{1 \text{ cm}}$$

Therefore, 1 cm in our scale model is equal to 45 cm in the actual structure.

Scale = Scale Model : Actual = 1 : 45

What is the scale of our drawing to the scale model?

$$\begin{array}{l} \text{Grid Square} \\ \text{Scale Model} \end{array} \begin{array}{l} \boxed{1 \text{ grid square}} \\ \boxed{\text{cm}} \end{array} = \frac{\text{grid square}}{1 \text{ cm}}$$

Scale = Scale Model : grid square = 1 : _____

Calculate the scaled dimensions for your structure. Fill in the table below:

Roof Structure

Feature	Actual Dimension	Drawing Dimension	Scale Model Dimension
Height			
Width			
Length			
Radius			

Calculations:

Body of Structure (Walls / Floor)

Feature	Actual Dimension	Drawing Dimension	Scale Model Dimension
Height			
Width			
Length			
Radius			

Calculations:

Construction Steps

1. Start with Building the Floor

What is the radius (circular) or length and width (rectangular) of the floor in the scale model?

$$\text{Drawing (grid squares)} * \text{Scale Factor} = \text{Scale Model (cm)}$$

$$\underline{\hspace{2cm}} * \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \text{ cm}$$

$$\text{Drawing (grid squares)} : \text{Scale Model (cm)} = \underline{\hspace{2cm}} \text{ gride squares} : \underline{\hspace{2cm}} \text{ cm}$$

What is the area of the floor in the drawing? Area of the floor in the scale model?

2. Add the Walls

What is the height of the walls in the scale model?

What is the circumference of the walls?

What is the surface area of the walls?

3. Then, Add the Fire Pit and Bed.

What are the dimensions of the bed? Does the Lego man fit?

4. Finally, Let's Make the Roof

What is the angle / pitch of the roof?

What is the radius (circular) or length and width (rectangular) of the roof in the scale model?

Partner Structure Review

Review another group's structure:

1. Check scale calculation
2. Review height, width, radius

4. Reflection

What part of the construction process went well?

What challenges did you face, and how did you solve them?

If you could build the model again, what would you improve?