

SCALE DRAWING PROJECT

Goal: You will select a Candy wrapper and use scale factor to enlarge it to best fit a sheet of paper or half poster.

- Include in your project:**
1. The original picture
 2. The enlarged picture (colored to match original)
 3. Measurements of the original picture
 4. The scale selected to enlarge the picture
 5. Self-Completed Evaluation

Illustration:

Step 1: Measure the length and width of the candy wrapper in cm. (It does not matter which side you label the length and width; be consistent with your sides on the large paper)

(Lc) Length _____ (Wc) Width _____

Step 2: Draw a 1 cm grid on the original wrapper (Draw 1 cm tick marks going across the length and the width and then connect your marks to form a grid)

Step 3: Measure the paper in cm.

(Lp)Length _____ (Wp)Width _____

Step 4: Select a scale (1 cm on wrapper = _____ cm on paper) Scale factor model:original.

- To do this find the ratio of lengths and widths

i.e.: $\frac{L_p}{L_c} = \frac{\quad}{\quad} = \frac{\quad}{\quad}$ $\frac{W_p}{W_c} = \frac{\quad}{\quad} = \frac{\quad}{\quad}$

- Then pick the smallest of the two numbers and round down to the nearest whole number (i.e. if you get 4.29 and 4.76 your scale should be 1 cm wrapper = 4 cm on paper)

Step 5: Draw the borders

- Multiply your length and width of the wrapper by your scale factor and see how much of the paper you have left over for the border. Take the new length of your picture and subtract it from the paper length, then divide it by two, this will tell you how far the border will be away from the edge of your paper.
- i.e. $L_c \times \text{Scale Factor} = \quad$ subtract from L_p \quad Then $\div 2$ \quad
 $W_c \times \text{Scale Factor} = \quad$ subtract from W_p - \quad Then $\div 2$ \quad

Draw your border around your paper before drawing your grid on your paper. Begin drawing your grid from a corner that has a perfect square first.

Step 6: Draw a grid on your paper using your scale. (i.e. If your scale factor is 4:1, your grid on your large paper will be 4 cm x 4 cm; therefore, you would draw 4 cm tick marks going across the length and width and then connect your marks to form a grid.)

Name: _____

Period: _____ Date: _____

Step 7: Reconstruct drawing and color accordingly. Higher scores will reflect a near-perfect representation of the smaller wrapper frame. Colors, shading, and drawing should look identical!

Reflection and Self-Evaluation:

Step 8: Write a reflection about your project: What did you learn about scale factor?

SCALE DRAWING PROJECT RUBRIC:

NOTE: When you submit your project, you will first score yourself using this rubric. Be honest and thorough in your evaluation. Remember to include the following parts in your presentation:

- Include in your project:**
1. The original wrapper
 2. The enlarged picture (colored to match original)
 3. Measurements of the original picture (front page)
 4. Reflection (may be typed or neatly hand-written)
 5. Self-Completed Evaluation (this form)

	15	14 - 8	7 - 0
Scale	All calculations and proportions are shown and done correctly	Some calculations are missing or are incorrect.	No calculations and proportions are shown or all are incorrect
Grids	All grid lines can be seen on drawing and match the original picture. Clearly measured correctly and scaled properly.	Grid lines may not match wrapper but are parallel and show some understanding of scale factor.	No lines are parallel, or measured correctly. The scale does not in any way match the calculations.
Presentation	The enlarged picture is colored neatly in the lines and colors match original wrapper.	Some of the enlarged picture is colored neatly in the lines and some of the colors match original comic.	The enlarged picture is not colored neatly in the lines and does not match original wrapper.
Reconstruction	All proportions are accurate on the enlarged picture.	Some proportions are not accurate on the enlarged picture	No proportions are accurate on the enlarged picture
Reflection	Reflection is neatly written with no errors and clearly communicates details about scale factor using academic vocabulary.	Reflection is not well-written may contain errors and poorly communicates details about scale factor, but uses some academic vocabulary.	Reflection is poorly written with multiple errors and does not communicate details about scale factor. Uses no academic vocabulary.

Total Points Possible: 75

Self-Assessment:

Scale: _____/15
 Grids: _____/15
 Reconstruction: _____/15
 Presentation: _____/15
 Reflection: _____/15
Total Points: _____/75

Teacher-Assessment: Teacher Comments:

Scale: _____/15
 Grids: _____/15
 Reconstruction: _____/15
 Presentation: _____/15
 Reflection: _____/15
Total Points: _____/75

Comment on your level of effort: