

## SCALE DRAWING PROJECT

**Goal:** You will select a cartoon or picture or candy wrapper and use scale factor to enlarge it to best fit a sheet of paper or half poster. Clear wrappers must be taped to color paper to create a background color.

**Include in your project:**

1. The original picture –get approved      **Teacher Check Off:**
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 cartoon character/picture/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) **You may have to use a pen.**

**Step 3: Measure the PAPER in cm.** (Pick one that matches general shape of your wrapper. Do NOT cut paper unless instructed to do so.)

(Lp) Length \_\_\_\_\_ (Wp) Width \_\_\_\_\_

**Step 4: Select a scale (1 cm on wrapper = ??? cm on paper)**

- To do this find the ratio of lengths and widths (divide!)

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

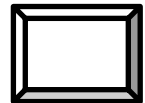
- Then **pick the smallest of the two numbers and round down** to the nearest whole number (if you get 6.2 and 5.7 your scale should be 1 cm wrapper = 5 cm on paper)
- **Scale Factor is 1 cm wrapper = \_\_\_\_\_**      **Teacher Check Off:**



**Step 5: 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.)

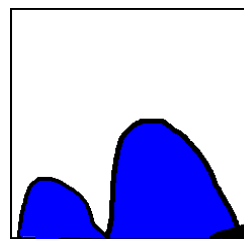
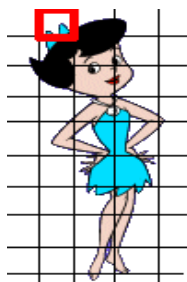
Start in the top left corner and mark from there. USE PENCIL!!!!

**Teacher Check Off:**



**Step 6: Reconstruct drawing and color accordingly.** Higher scores will reflect a near-perfect representation of the smaller picture in the frame. Colors, shading, and drawing should look identical!

All you do is draw EXACTLY what you see in each small square into its corresponding large square. For example, in the second square on the top row of the "Betty" enlargement we see the tips of her bows and a tiny bit of her hair. These get drawn on the big grid as shown below.



**Step 7:** When you have completed transferring the picture, staple the original picture in the bottom left hand corner of your enlargement.

**Reflection and Self-Evaluation:**

**Step 8:** Write a reflection about your project: What did you learn about scale factor? This should be a minimum of 3 paragraphs. Yes – I'm grading your language skills!!

**Typed reflections will receive 5 bonus points.** Tape to back of your project.

**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 (**Taped to back of project**)
  2. The enlarged picture (**colored to match original**)
  3. Measurements of the original picture (front of this form)
  4. Reflection (**Taped to back of project**)
  5. Self-Completed Evaluation (this form)

	<b>20</b>	<b>19 to 10</b>	<b>9 to 0</b>
<b>Scale</b>	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
<b>Grids</b>	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. Ruler may have been used.	No lines are parallel, or measured correctly. The scale does not in any way match the calculations. Ruler does not look like it was used for lines.
<b>Presentation</b>	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.	The enlarged picture is not colored neatly in the lines and does not match original wrapper.
<b>Reconstruction</b>	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
<b>Reflection</b>	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: 100 for Self-Assessment, 100 for Teacher Assessment (plus bonus)**

**Self-Assessment:**

Scale:                    \_\_\_/20

Grids:                    \_\_\_/20

Reconstruction:      \_\_\_/20

Presentation:        \_\_\_/20

Reflection:            \_\_\_/20

**Total Points:**        \_\_\_/100

**Teacher-Assessment:** Teacher Comments:

Scale:                    \_\_\_/20

Grids:                    \_\_\_/20

Reconstruction:      \_\_\_/20

Presentation:        \_\_\_/20                    WOW! Points: \_\_\_

Reflection:            \_\_\_/20 (+5: typed)

**Total Points:**        \_\_\_/100

**\*\*\*20% off for every day late\*\*\***

Comment on your level of effort:

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