

# Scale Drawing Project -Enlarging a Candy Bar or Comic Strip

Name: \_\_\_\_\_ Class: \_\_\_\_\_

## Learning targets:

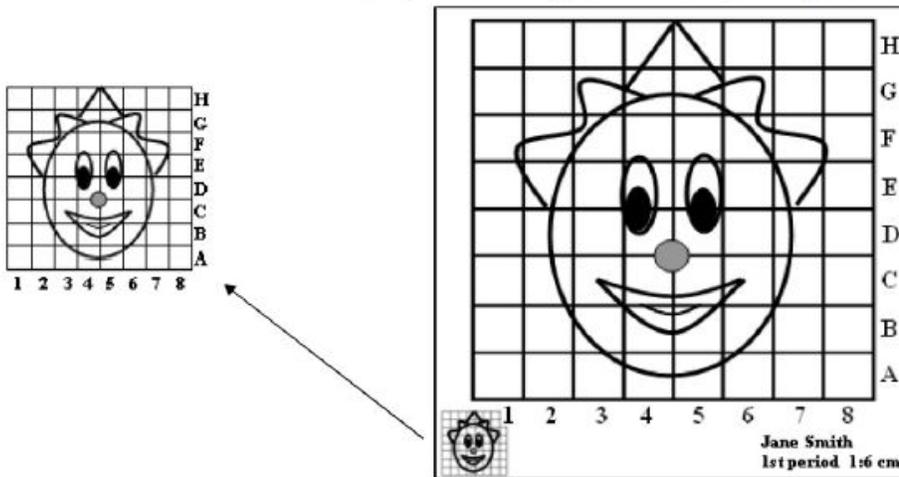
*I can solve a problem involving scale drawings*

*I can compute actual lengths and areas from a scale drawing*

*I can reproduce a scale drawing at a different scale*

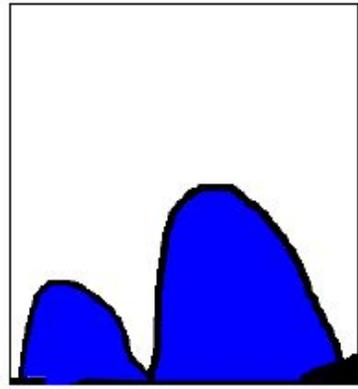
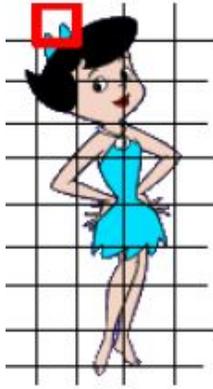
Overview of project: You are going to enlarge either a candy wrapper or a section of a comic strip so that you can find the scale factor between the original candy wrapper/comic strip and the enlarged version.

## Sample enlargement scaling of image



## Steps:

1. Take your empty candy wrapper OR choose ONE frame of the comic strip to cut out to enlarge for the scale drawing.
2. Construct a grid by measuring quarter inch ( $\frac{1}{4}$  inch) squares along the width and length of the candy wrapper/original comic strip. Use a RULER! For help, you can tape your candy wrapper/comic strip to the  $\frac{1}{4}$  inch grid paper and continue the lines. (keep this paper!)
3. Determine your SCALE FACTOR for the enlargement. Pick a card from the deck and this will be your scale factor.
4. Lightly draw the correct sized grid lines (using a pencil) for your scale factor on a piece of plain white paper. (You will need to erase these lines once the enlargement has been made.) The size of paper used will depend on the scale factor. You MUST use a ruler. Remember that your original scale is  $\frac{1}{4}$  inch.
5. Once your grid is ready, complete questions 1, 2, & 3 on the Summary page.
6. Copy each individual box of the candy wrapper/comic strip onto your enlargement paper. Remember, you do NOT have to be an artist to produce an impressive enlargement. All you do is draw EXACTLY what you see in each small square into its corresponding larger 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 on the top of the next page:



7. When you have completed transferring the cartoon, staple or tape the original cartoon in the bottom left hand corner of your enlargement. Carefully erase the grid lines.
8. Next, carefully and neatly, color the enlargement the same as the original by using colored pencils or crayons (no markers).
9. You will be graded according to the grading rubric provided. The rubric must also be turned in with your finished product. HAVE FUN!

#### NOTES:

- This project will be a project/quiz score.
- The Enlargement picture and original picture/candy wrapper **MUST** be handed in together.
- The Summary Page must be completed on your **OWN**.
- Rubric must be self assessed **and** peer assessed.

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## SUMMARY PAGE

1. Scale factor: \_\_\_\_\_ (2 points)

2. Scale used: \_\_\_\_\_ (example: 1 inch = 3 feet) (2 points)

3. (12 points total)

Candy wrapper/comic strip Information	Original Size measurements (2 points each)	Original to enlarged WORK! (2 points each)	Enlarged size measurements (2 points each)
Length			
Width			

4. What is the **scale factor** that you used? Show ALL calculations. (work - 2 points)

Scale factor: \_\_\_\_\_ (2 points)

(20) \_\_\_\_\_

5. Write about your strategies:

Using complete sentences, describe the mathematics you used to solve this project. Be sure to include appropriate vocabulary.

Sentences (2 points) \_\_\_\_\_

Vocabulary (4 points) \_\_\_\_\_

Clear explanation (4 points) \_\_\_\_\_

Writing total (10 points) \_\_\_\_\_

Total both pages (30): \_\_\_\_\_

## Grading Rubric for project drawing

Requirements	6 points	4 points	2 points	Points earned Self	Points earned peer
The $\frac{1}{4}$ inch by $\frac{1}{4}$ inch grid is drawn over the original figure.	The grid has accurate measurements, and was made using a straightedge.	The grid has somewhat accurate lines; some may be slightly crooked or sloppy.	Grid is not $\frac{1}{4}$ inch by $\frac{1}{4}$ inch; lines are sloppy and crooked.		
Enlarged grid is drawn following the chosen scale factor.	The grid has accurate measurements, and was made using a straightedge.	The grid has somewhat accurate lines; some may be slightly crooked or sloppy.	Grid does not follow scale factor; lines are sloppy and crooked.		
Cartoon transferred to the new grid	Cartoon is transferred accurately to the new grid following the guidelines.	Cartoon is transferred somewhat accurately. Some parts may be disproportioned	Cartoon is disproportionate. The new figure does not resemble the original.		
Drawing is colored.	Cartoon enlargement is colored <i>neatly</i> using colored pencils or crayons.	Cartoon enlargement is colored using colored pencils or crayons.	Cartoon enlargement is partially or not colored. Is colored with markers.		
Overall Look	The overall look is excellent! The new figure appears almost identical to the original. Color greatly enhances the figure.	The overall look is good; some sections appear to be disproportioned. Color enhances the picture.	The overall look is fair. Many sections appear disproportioned. Color adds little to the overall look.		
<b>Teacher</b> Total points artistic component:			TOTAL POINTS:  (30 possible)	<b>self:</b>	<b>peer:</b>

### Reflection time:

1. Read the description for each section carefully. Make adjustments as needed before scoring.
2. Using a highlighter, mark the appropriate box with an "X" indicating what you believe your score should be for each section. My highlighter color is:  Enter total score in the box above.
3. Find a peer to evaluate your project. Have them highlight what score they see you have earned. My peer's highlighter color is:  Enter total score in the box above.

EXTENSION (BONUS FOR CANDY BAR SELECTION):

1. Copy the nutritional information from your original candy bar to the table below in the "Original Size" column.
2. Calculate the nutritional values of your enlarged candy bar in direct proportion to the original candy bar and record below.

Candy Bar Information	Original Size	Scale Factor	Enlarged Size
Calories			
Total Fat			
Cholesterol			
Sodium			
Total Carbohydrates			
Protein			