Using ratios
Block 2 Student Activity Sheet

1. Sunil has a photo of his puppy that is 2 inches by 3 inches. He wants to make different sizes of the photo without distorting the image. Use scale factors to complete the table showing different sizes he could make.

6.25	4	9	10.5	$\frac{4}{3}$	3
5.5	2	$\frac{9}{2}$	5	$\frac{3}{4}$	7

Scale factor	Width (inches)	Length (inches)
1	2	3
$\frac{2}{3}$		
$\frac{3}{2}$		
3.5		

2. What is a proportion?

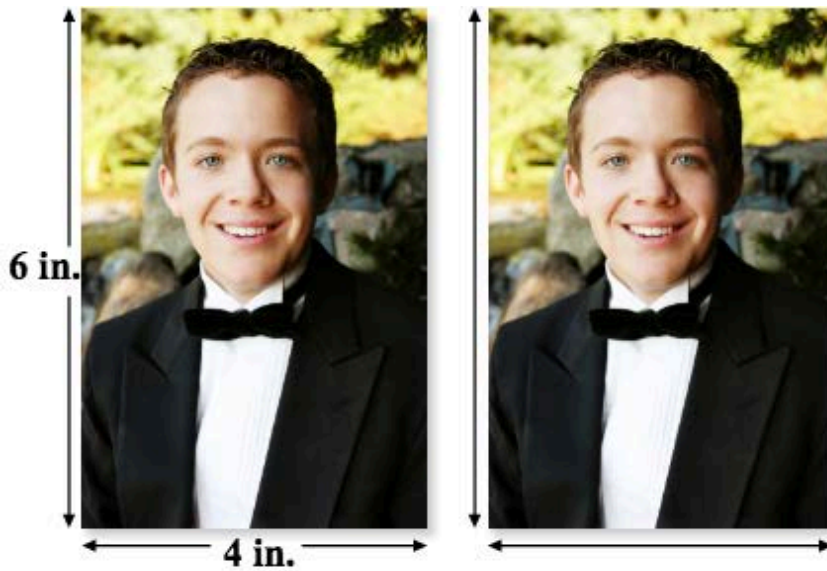## Using ratios

3. Sunil has a picture of his puppy that is 2 inches by 3 inches. Create a proportion using these dimensions. Can you find more than one solution?
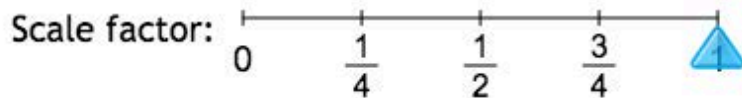

3 inches

2 inches

4. Record the dimensions of reduced images in the table. For each reduction, record the scale factor and the length and width.

6 in.

4 in.

Scale factor: 0 $\frac{1}{4}$ $\frac{1}{2}$ $\frac{3}{4}$

Scale factor	Width (inches)	Length (inches)
1	4	6

5. **REINFORCE** The factor you use to create proportional change is called the **scale factor.** Answer the following questions about the effects of different scale factors.

   a. Name some examples of scale factors that are less than 1. What effect does a scale factor less than 1 have on the dimensions of the image being scaled?

   b. Name some examples of scale factors that are equal to 1. What effect does a scale factor equal to 1 have on the dimensions of the image being scaled?

   c. Name some examples of scale factors that are greater than 1. What effect does a scale factor greater than 1 have on the dimensions of the image being scaled?

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6. **REINFORCE** Nadeem has a photo that is 5 inches tall and 8 inches wide. He plans to print copies of the photo in different sizes.

a. For one of the copies, Nadeem enlarges the dimensions of the original photo by a factor of 3. What are the dimensions of the enlarged photo?

b. For another copy, Nadeem shrinks the dimensions of the original photo by a factor of 0.75. What are the dimensions of the smaller photo?

c. Nadeem has a 10-inch-by-10 inch photo album. He wants to make as large a copy of the original photo as possible to fit in the album. What are the largest dimensions the copy can be, if he keeps the proportion of the original photo? Explain your answer.