

## Topic 1: Using Ratios- Block 2

### Essential Question: How do you use scale factor to find proportional ratios? How does scale factor effect ratios?

What are equivalent ratios?

**Equivalent Ratios** are two ratios that are equal

$$\text{Example: } \frac{1}{2} \text{ and } \frac{2}{4}$$

What is scale factor?

**Scale Factor** is the factor you use to create proportional change. You multiply it to both numbers in the ratio to make equivalent ratios. It can be a fraction or decimal. It can be greater than 1, less than 1, or even a negative.

$$\text{Example: } \frac{3}{4} = \frac{6}{8}$$

What is a proportion?

A **proportion** is an equation stating that 2 ratios are equal.

How do I determine the scale factor for a proportion?

$$\text{Example: } \frac{1}{2} = \frac{2}{4}$$

Scale factor = 2

**To find scale factor** you calculate the number that you multiply both the numerator and denominator by to get the other equivalent ratio

$$\text{Example: } \frac{2}{3} = \frac{6}{9}$$

Scale factor = 3

If the scale factor isn't obvious then divide the second ratio numerator or denominator by the first ratios matching numerator or denominator

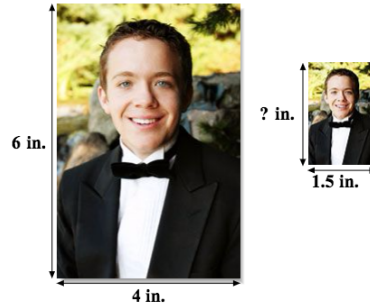
$$\text{Example: } \frac{16}{24} = \frac{2}{3}$$

Scale factor =  $\frac{1}{8}$

What does it mean if the scale factor is less than 1?

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What does it mean if the scale factor is 1?

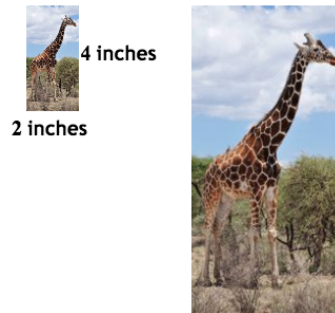


What does it mean if the scale factor is greater than 1?

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**Summary**

