

## Curriculum Outcomes:

**(SS3) Demonstrate an understanding of similarity of polygons.**

**(SS4) Draw and interpret scale diagrams of 2-D shapes.**

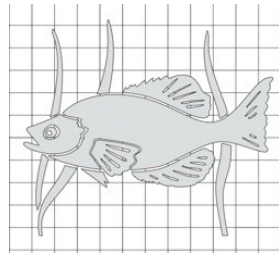
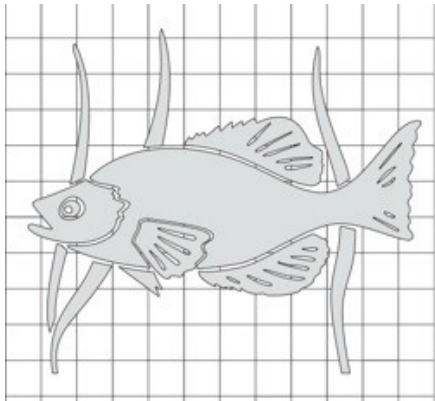
**(SS5) Demonstrate an understanding of line and rotation symmetry.**

Student Friendly:

How are diagrams related in size? To increase a length by a certain number be it a fraction or a whole number.

# **Chapter 7:**

# **Similarity and Transformations**



### Scale Diagrams:

A diagram that is an enlargement or reduction of another diagram.

The measurements in each diagram are compared.



$$\text{Scale Factor} = \frac{\text{Length of Scale Diagram}}{\text{Length of Original Diagram}}$$

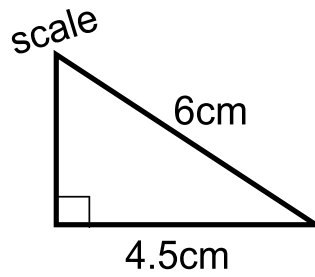
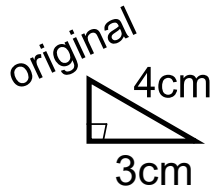


$$SF = \frac{S}{O}$$

The **scale factor** can be written as a fraction or decimal.

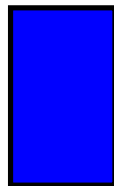
If the scale factor is **less than one**, the diagram is a **reduction**, **larger than one** indicates the diagram is an **enlargement**.

When pairs of corresponding lengths have the same scale factor,  
we say that the  
corresponding lengths are *proportional*.



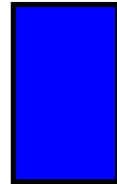
Hypotenuse

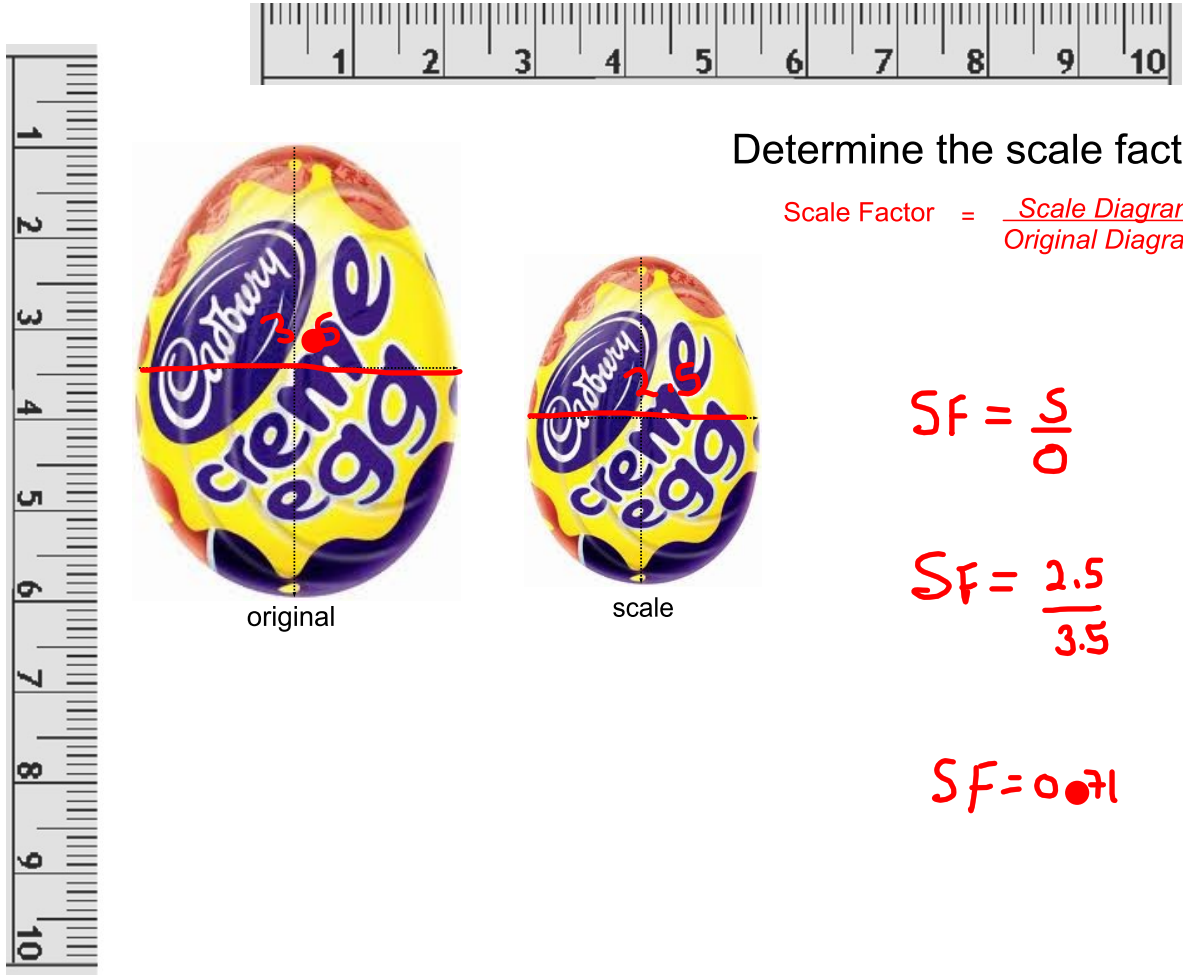
$$SF = \frac{\cancel{6}}{\cancel{4}} = \frac{6}{4} = 1.5$$



Leg

$$SF = \frac{\cancel{4.5}}{\cancel{3}} = \frac{4.5}{3} = 1.5$$





Determine the scale factor.

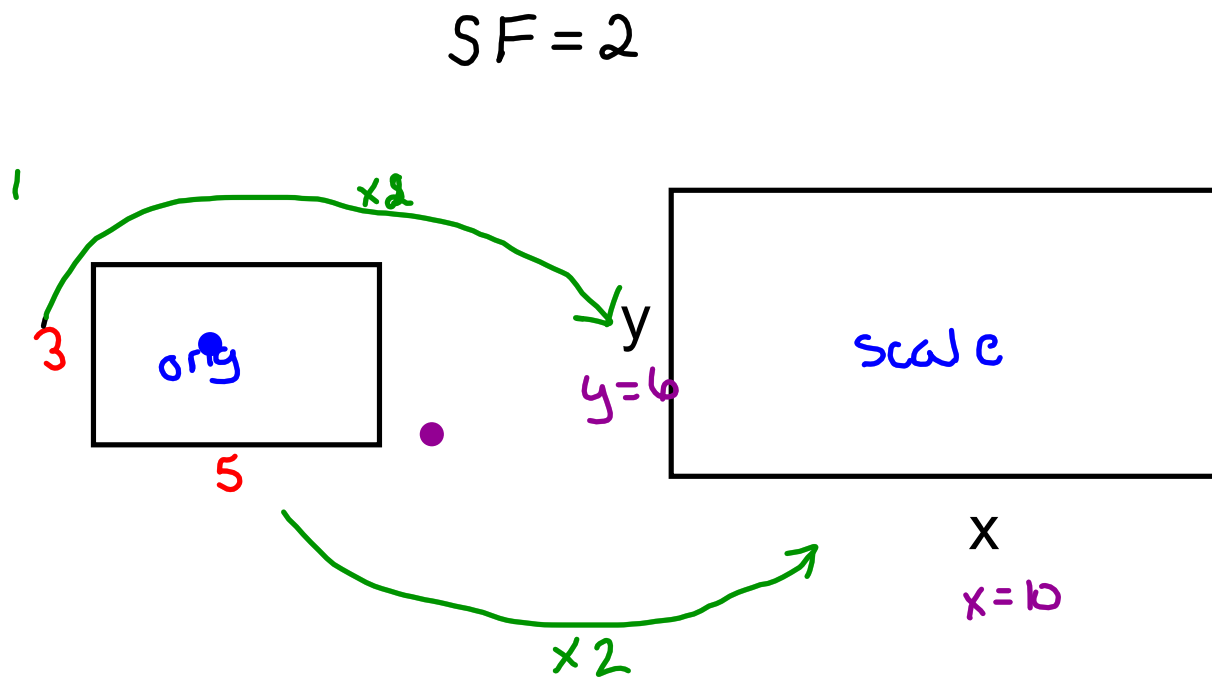
$$\text{Scale Factor} = \frac{\text{Scale Diagram}}{\text{Original Diagram}}$$

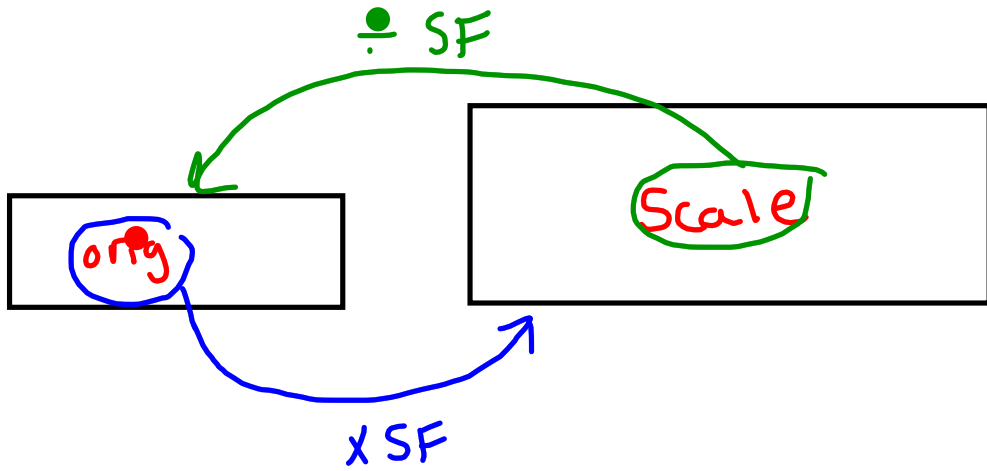
$$SF = \frac{S}{O}$$

$$SF = \frac{2.5}{3.5}$$

$$SF = 0.71$$

$$x = 0.71$$







This photo of longhouses has dimensions 9 cm by 6 cm.

The photo is to be enlarged by a scale factor of  $\frac{7}{2}$ .



