

Name:

Math 9

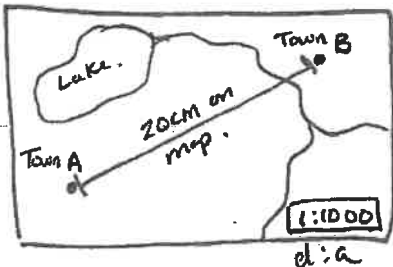
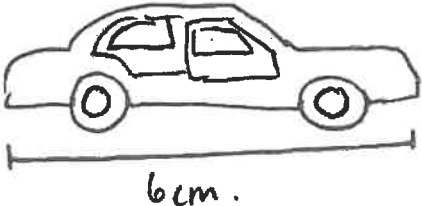
Date:

Chapter 2: Scale and Similar Triangles**2.1 - Scale and Scale Factor**

Key Points	
Scale	Scale = diagram measurement (d) : actual measurement (a) $Scale = d : a$
Scale Factor	$SF = \frac{\text{diagram}}{\text{actual}} = \frac{d}{a}$
	SF greater than 1 → Enlargement
	SF less than 1 → Reduction

Scale:

- relationship between a distance on a drawing, map or model and the actual distance it represents
- Represented as a ratio; Scale = diagram measurement (d) : actual measurement (a)

Example	Steps
 $\frac{d}{a} = \frac{1}{1000} \times \frac{20\text{cm}}{x} = 20000\text{cm or } 200\text{m}$ 1:50 scale model car.  How long is the actual car?	$d : a$ 1 : 1000 scale. 1 unit (cm, mm, etc.) on the map represents 1000 of these in real life $\frac{d}{a} = \frac{1}{50} \times \frac{6\text{cm}}{x}$ $x = 300\text{cm long}$ or 3m long.

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Scale Factor:

- How many times larger or smaller a diagram, map, or model is compared to the original object



What scale factor was used to make the statue?
 "How many times larger is the statue than the person?"

Scale factor = $\frac{d}{a}$ ← "diagram" → or model or copy of original

$$SF = \frac{20m}{2m}$$

$SF = 10$ → Every dimension of the person was made 10x larger to make the statue.

Scale Reduction:

- The multiplier used to reduce the size of an object
- Examples: Globe, pictures, maps

Example	Steps
Redrawn w a sf of $\frac{1}{2}$ Actual. Diagram	* a scale factor of $\frac{1}{2}$ would reduce the size of the object by $\frac{1}{2}$.

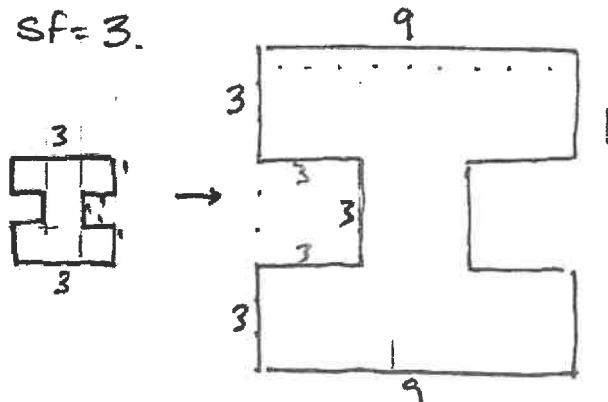
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Scale Enlargement:

- The multiplier used to enlarge the size of an object
- Examples: diagrams of cells, microscopes, pictures of small bugs.

Example	Steps
Redraw using a Scale factor of 3 SF = 3. 	* A SF of 3 means all dimensions on the original image must be multiplied by 3.

