SCALE

Keywords:	Scale, Ratio, Simplify		
Definition / Description:	Scale: A scale for a drawing or map is the ratio between the drawn distance to its true value	Ratio: A ratio gives a part – to – part comparison.	Simplify: Simplify means to make it simple. In mathematics, simplification is reducing the expression/fraction/problem in a simpler form. It makes the problem easy with calculations and solving.
Knowledge points:	Convert a measurement with a scale	Simplify a Ratio / Scale with units	

Knowledge point examples:	Scales are used to make it possible to work out real distances on a small diagram.
	
	A map uses the scale 1cm : 2km
	
	This tells us for every 1cm we measure, the real life distance would be 2km.
	
	If we measure 3.5cm, we can multiply the real life measurement by what we have measured to find the correct distance.
	
	2(km) x 3.5 = 7km
	So 3.5cm on the diagram would represent 7km.
		Ratios and scales with units can be simplified. First all parts of the ratio or scale must be converted to the same units. Once all the parts have matching units, we can divide all parts by the same amount.
		
		Simplify the Scale 4cm : 2km
		1. Convert to the same unit 2km = 200,000cm
		
		    4cm : 200,000cm
		
		      4: 200,000 Simplify
		                       ÷4
		      1: 50,000
		
		The units are removed as this scale will now work with any units as it was simplified with matching units.		

Linked Knowledge Maps	Ratio, Measurements / Units, Unit Conversion		