Scale skills

Imagine how much paper you would need to draw a full size map of Victoria! This is why maps and aerial photographs have scales. A scale tells us how much the real area has been ‘scaled’ down to fit on a map and there are three types:

(a) A **linear scale** is a numbered line showing how many metres or kilometres are represented by a given distance on the map, such as in the graphic below, where 4cm represents 1,000m or 1km on the ground.

(b) A **written scale** is an actual statement which says how much 1cm on the map represents on the ground. In the graphic below, it would be: 1cm represents 250m.

(c) A **representative fraction** or **ratio** is a way of showing scale as numbers. 1:1,000 or 1/1,000 both mean that one unit on the map (mm or cm) represents 1,000 of the same units on the ground. Below the ratio would be 1:250 (1cm:250m).

The easiest way to calculate distance on a map is to measure the distance between the two points in centimetres. If you were to measure 10cm between A and B, and 1cm on the map represented 5km, the distance between A and B would be 50km (10x5). Where a line scale is supplied, place the edge of a piece of paper along the distance to be measured. Mark in the starting and finishing points on the paper. Hold your piece of paper against the linear scale to work out the actual distance between the points. Sometimes you may need to measure a distance which is not straight like a road or river. In this case, you can use a piece of string to follow the shape of the feature. When you’ve completed the measurement, straighten the string along a ruler or line scale to determine the distance. Finally, convert the distance using the scale to find out the actual distance on the ground.

![Map of Linton](scale-skills.pdf)

1. Work out the approximate distance - **via the roads and tracks** - between the places below:
   
   (a) from the entrance gate to Covy Park to the art gallery carpark: ..............................................
   
   (b) from the sports centre to Wattle Beach via the access track: ......................................................
   
   (c) from the intersection of Parma Road and the golf course access lane to the start of Buxner Bridge: ...........................................................

2. You and a friend have 24 hours to spend in the area marked on the map. Plan a round-trip itinerary of no more than 15km as you are walking. Detail your itinerary, listing the distances between the different places you will visit.

**References:**
- SOSE Alive 1, p131
- Geoactive 1, p9
- SOSE for Queensland 1, pp180-181
- Jacaranda SOSE 1 2E, pp140-143
- Jacaranda SOSE: Geography 1, pp24-27
- SOSE Alive Geography 1, pp10-11
- Jacaranda Atlas 5E, p3