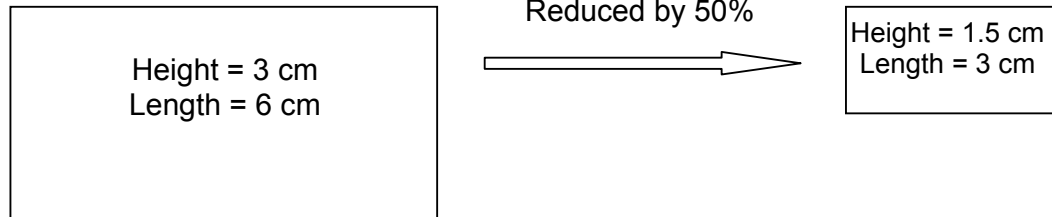


Map Reading – Measuring Distances

1. Scale:

Objects on the map are drawn to scale: this means the length is changed by the same proportion as the width.

Example:



Cadets usually work with 1:50000 (most common) or 1:25000 scale maps.

For a 1:50000 map: 1 cm on the map equals 50000 cm on the ground (which is the same as saying 1 cm = 500 m or 2 cm = 1000 m).

For a 1:25000 map: 1 cm on the map equals 25000 cm on the ground (which is the same as saying 1 cm = 250 m or 4 cm = 1000 m).

In map reading we usually measure distances in kilometres (km) instead of metres (m). 1 km = 1000 m.

Key Ideas:

A grid square is 1 km by 1 km on the ground. This means a grid square measures 2 cm across on a 1:50000 map or 4 cm across on a 1:25000 map. A 1:25000 map has twice as much detail as a 1:50000 map, because the grid squares are twice as large.

2. Estimating Distances:

As said above, a grid square measures 1 km by 1 km. The diagonal distance (from bottom left to top right say) on a grid square is approximately 1.5 km. A quick method of measuring a straight line on the map is to count grid squares:

Examples:

- If a straight road covers 4 grid squares on the map, it will measure approximately 4 km on the ground.
- If the straight edge of a forest covers 3.2 grid squares on the map, it will measure approximately 3.2 km on the ground.
- If a road runs diagonally across two grid squares it will measure about 3 km on the ground.

Please note this is a rough method only. It is not suitable for accurate measurements.

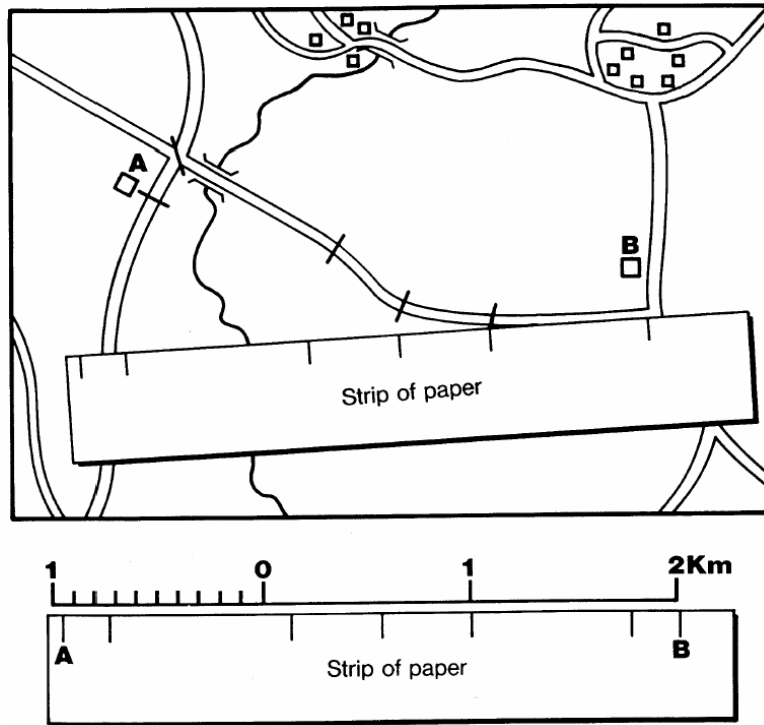
3. Accurate Measurement of Distances

Part A: To measure a straight line between two points:

- Use a ruler and convert the ruler measurement to the distance on the ground.
- Alternatively, lay the straight edge of a piece of paper between the points and mark the paper where they are. Transfer the paper edge to the scale bar at the bottom of the map and read off the distance on the ground.

Part B: To measure a winding route:

- Use a piece of paper with a straight edge and 'work' it along the route on the map.



- Remember which mark on your paper strip is the start of the route.
- Don't take the paper strip off the map – just mark it and rotate it when you get to a bend on your route.
- When you've put the last mark on your paper strip (eg. the end of your route) lay the strip over the scale bar at the bottom of the map.
- Read off the distance between the start and end marks on your paper strip.
- You can also use string to measure distances on the map. Knot or mark your string at the start of the route and work it round in the same way you would the paper strip. Proper map measurers can also be purchased from outdoor shops.

Practice this method to get good at it. Measuring distances is a very important skill.