

HOW TO MEASURE SLOPE WITH A LINE LEVEL

MATERIALS

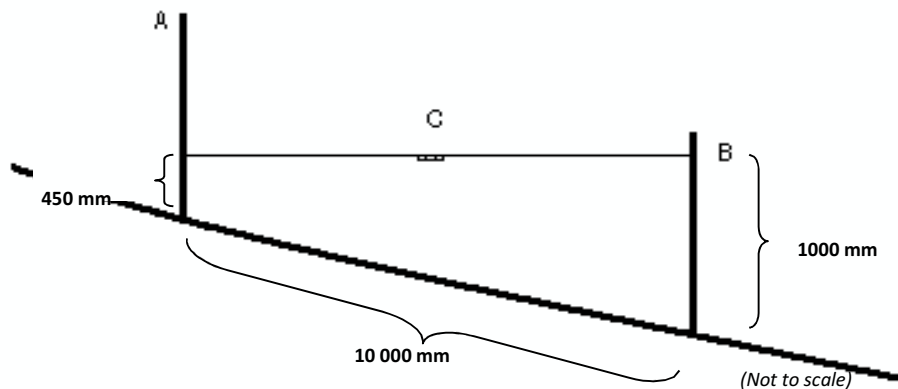
- line level
- tape measure
- calculator (optional)

Slope is calculated using the following formula:

$$\text{Slope} = \frac{\text{rise}}{\text{run}} \times 100$$

Three people are needed to mark contours with a line level: Person A, Person B and Person C.

MEASURING SLOPE:



1. Person A must stand upslope of person B and adjust the string down the pole until the line level attached between the poles gives a level reading. Person C must read the line level.



A level reading on a line level

2. The percentage of the slope can then be calculated using the formula:

$$\text{Slope} = \frac{\text{rise}}{\text{run}} \times 100$$

3. The run is the distance between the two poles, which should be 10 000 mm (10 meters).

The rise is the difference in height of the string, which is calculated by subtracting the height of the string on pole A (e.g. 450 mm) from the height of the string on pole B (e.g. 1000 mm).

$$\begin{aligned} 4. \text{ Slope} &= \frac{1000 - 450}{10\,000} \times 100 \\ &= \frac{550}{10\,000} \times 100 \\ &= 5.5\% \end{aligned}$$

Note: It is important that both poles are held vertically (straight up), and that neither pole is placed in a hole or on top of a minor high spot like a rock or clump of soil.



