

Chapter 1 Measuring up

Short investigation 1.1: Using measuring instruments

Name:

Aim

To practise using a variety of instruments to measure length to different levels of precision

Materials

Vernier callipers, 30 cm ruler, metre ruler, micrometer, piece of wire, textbook

Method

1. Examine each of your measuring instruments and determine its limiting precision. Enter these values in table 1.1A
2. Using each of your measuring instruments, determine the following as precisely as the instruments allow:
 - (a) width of the textbook
 - (b) thickness of the textbook
 - (c) length of the textbook
 - (d) diameter of the wire
 - (e) height of the ceiling
 - (f) length of the benchtop.

Enter these results in table 1.1A.

Results

Table 1.1A

	Ruler	Metre ruler	Micrometer	Vernier callipers
Limiting precision				
Textbook width				
Textbook thickness				
Textbook length				
Diameter of wire				
Height of ceiling				
Length of bench				

Analysing the results

1. Which of the measuring instruments had the greatest level of precision?
2. Why were you not required to use the micrometer or vernier callipers for some measurements?
3. Which instrument would be the most practical to determine:
 - (a) the depth of a test tube?
 - (b) the length of your foot?
4. Use your measurements for the textbook to determine its volume to an appropriate level of precision in:
 - (a) cm^3
 - (b) m^3

Notes: