

Need for Measurement and Standard Units

Chapter 5: Measurement of Length and Motion · Topic 1

Key Concept

If two people measure the same table using their own handspans, they will likely get different results, since everyone's hand size is different — this shows why non-standard units are unreliable. The metre was originally defined based on the Earth's size, but is now defined very precisely using the speed of light, making it consistent everywhere on Earth (and beyond) regardless of who measures it or where. Other standard units include the kilogram for mass and the second for time.

Quick Revision Notes

- Standard units allow consistent, reliable measurement understood by everyone.
- Non-standard units like handspans vary between people and are unreliable.
- The metre (m) is the SI unit of length.
- Other SI base units include the kilogram (mass) and the second (time).

Practice Questions

- 1 Why do we need standard units of measurement instead of body-part-based units?
- 2 Measure the length of your desk using a handspan and then a ruler, and compare the results.
- 3 Name the SI units for length, mass, and time.