Measurement investigation with precision

MODULE 5 · MEASURES — LENGTH, AREA, VOLUME, MASS AND CAPACITY MEASURES

Careful measuring means choosing the right tool and unit, reading the scale exactly, and **recording with sensible precision**.

→ Measure to the nearest mm; repeat and check before you record.

HOW TO ANSWER TODAY

- **Estimate gap.** Subtract the smaller from the bigger to find how far off the estimate was.
  Estimated 15 cm, real 12.5 cm → 2.5 cm off
- **Read a ruler.** Each big mark = 1 cm = 10 mm. Each little mark = 1 mm.
  3 cm + 7 mm = 37 mm = 3.7 cm

WARM-UP

1. Cian draws a scale plan of the classroom on grid paper. He estimates the length of the teacher's desk on the plan as **9 cm**, then measures it with his ruler and gets **11 cm**. By how much is his estimate off?

   > A pupil estimates a length as 9 cm, then measures it as 11 cm. By how much is the estimate off?

2. Saoirse measures an autumn leaf she collected for her art lesson using a ruler. The tip of the leaf reaches **3 cm** and **6 mm** along the ruler from the zero mark. What is the length of the leaf in mm?

   > A ruler reading sits 3 cm and 6 mm from the start of the ruler. What is the reading in mm?

PRACTICE

1. Cian is building a den with branches in the school orchard. He estimates one long branch to be **187 cm**, then measures it with the metre stick and gets **198 cm**. By how much is his estimate off?

   > A pupil estimates a length as 187 cm, then measures it as 198 cm. By how much is the estimate off?

2. Tadhg estimates the height of the service line on the wall-ball court in the yard at **155 cm**. When he measures it with the long tape, it is actually **166 cm**. By how many centimetres is his estimate off?

   > A pupil estimates a length as 155 cm, then measures it as 166 cm. By how much is the estimate off?

CHALLENGE

1. Before Camogie training under the floodlights, Aoife estimates the length of a goalpost shadow as **146.5 cm**. She then measures it with a tape and gets **149 cm**. By how many centimetres is her estimate off?

2. Tadhg is planning a row of marigolds in the school garden flowerbed. He measures the length he needs with a ruler, and the reading sits **28 cm** and **4 mm** from the start of the ruler. What is the reading in cm?