Estimating and rounding numbers on measuring equipment

National Curriculum attainment target

- Convert between different units of measure

Lesson objective

- Estimate and compare length; round numbers on measuring tapes to the nearest whole number

Previous related lessons

Unit 6, Week 3, Lesson 1; Unit 6, Week 3, Lesson 2

Prerequisites for learning

Pupils need to:

- be able to estimate and measure length using standard units (m, cm, mm)
- be able to round any number to the nearest 10 or 100

Vocabulary

measure, estimate, round, distance, metre (m), centimetre (cm), millimetre (mm)

Future related lesson

Unit 6, Week 3, Lesson 4

Success criteria

Pupils can:

- round numbers on measuring tapes to the nearest 10 cm and 100 cm

Getting Started

- Choose an activity from Measurement (length and perimeter).

Collins Connect
Year 4, Unit 6, Week 3

Teach

Resources

Resources 36 and 43: 1–100 number square and arrow cards (per class), measuring tape (per class), 6 small arrow cards (per class), 6 felt-tip pens (per class)

- Display the 1–100 number square. Select a range of numbers to revise rounding to the nearest 10, for example, 26, 83, 42, 55. Ask: **Who can explain why numbers with ones digits from five to nine are rounded up and those with ones digits one to four are rounded down?**
- Add a length unit to each number and write them on the board, for example, 26 km, 83 m, 42 cm, 55 mm.

- Say: **Tell your partner what each length is rounded to the nearest 10.**
- Extend to rounding three-digit lengths to the nearest 10, for example, 264 cm, 838 m, 432 m, 505 m.

- Ask: **What is 995 m rounded to the nearest 10?** (1000)
- Repeat, as above, by rounding the four, three-digit numbers to the nearest 100.
- Run out a measuring tape to 4 m. Distribute the six small arrow cards and felt-tip pens. Ask each child to write a length between 200 cm and 400 cm on their card, for example, 213 cm, 242 cm, 275 cm, 339 cm, 351 cm and 387 cm.
- Say: **On the other side of your card, write your length to the nearest 10 cm. Put your card at that mark on the measuring tape.** (210, 240, 280, 340, 350, 390 cm) **Mentally round the length on your card to the nearest 100 cm. Reposition your card.** (200, 200, 300, 300, 400, 400 cm)
- Turn over the cards to show the starting number. Discuss the measurements which rounded to 200 cm, 300 cm and 400 cm. Elicit practical applications, for example, buying lengths of wood or curtain material to cut to size.

- Display: Slide 1.
- Say: **We are looking at part of a ruler.** Ask: **Who can point to the position on the ruler for 47 mm?**
- Ask: **What is 47 mm rounded to the nearest centimetre? Can you explain to the class how you worked it out?**
- Say: T**ell your partner where to find 2.8 cm on the ruler and what this measurement is in millimetres and rounded to the nearest centimetre.** Take feedback and repeat for other measures, for example, 8·2 cm, 36 mm, 5·3 cm, 9·8 cm.
- Display: Slide 2.
- Say: **We are looking at part of a measuring tape.** Ask: **Who can point to the position on the tape for 472 cm.** Elicit that the position for 472 cm is just over 470 cm.
- Ask: **What is 472 cm rounded to the nearest 10 cm/metre?** (470 cm / 5 m)
- Repeat as above for other lengths.

Individualised Learning

Refer to Activity 3 from the Learning activities on page 259.

Pupil Book 4B: – Page 26: Fixing the fence in metres

Progress Guide 4: – Support: Year 4, Unit 6, Week 3, Lesson 3: Rounding heights of plants

– Extension: Year 4, Unit 6, Week 3, Lesson 3: How high?

Plenary

- Ask: **Who can explain why 5·4 metres rounds down to five metres?**
- Call out a range of lengths in metres such as 3·8 m, 9·6 m, 2·7 m, 840 cm, 460 cm and ask the class to show, by thumbs up or down, whether the length will round up or down to the nearest whole metre.
- Repeat, as above, for lengths such as 340 cm, 850 cm, rounded to the nearest 100 centimetres.
- Say: **Tell your partner why 448 cm rounded to the nearest metre is four metres.**
- Say: **The length of wire mesh between two posts measures 583 cm.** Ask: **What is the length of wire mesh rounded to the nearest 10 cm/metre?** (580 cm/6 m)
- Repeat, as above, for other lengths of wire mesh.