Lesson 8 NUMBER

Rounding decimals to the nearest whole, tenth, hundredth

CURRICULUM ALIGNMENT

NUM.PVT.4 investigate how decimals and percentages (and fractions) can be compared, ordered and expressed in related terms.

INTERACTIVES Number Line · challenge, display, explore

WHAT THIS LESSON TEACHES

Rounding replaces a decimal with the nearest simpler value at a chosen place. Look at the next digit: 5 or more means round up, less than 5 means round down.

→ 4.7 rounds to 5 to the nearest whole number.
→ 0.62 rounds to 0.6 to the nearest tenth.

MODEL THIS ON THE BOARD

ROUNDING A GAA KICK

1. A kick travels **4.7** metres. Round to the nearest whole metre.
2. It sits between **4** and **5** on the number line.
3. The deciding digit is **7**, so round up to **5** metres.

LESSON ARC

Open with a GAA kick of 4.7 metres — whole metres only, 4 or 5? Take three hands-up before the number-line interactive settles it. In Watch and Notice, walk four markers (4.7, 0.34, 1.275, 4.5) so pupils see the deciding digit at work and the round-half-up tie-break. Pupils sketch candidate lines in copybook, then the class works the challenge bank, ending on 9.95's carry into 10.0.

TEACHING MOVES

1. **Getting Started.** Give five seconds of quiet think-time, then take exactly three hands — not open call-outs. Don't confirm 5 yet. Listen for 'it's closer to 5' and hold that pupil's phrasing to reuse in Watch and Notice.
2. **Watch and Notice.** Point to each marker on the number line and ask the class to predict before you name it. Slow down on 0.34 — head off 'the 4 makes it round to 4-something' by naming the deciding digit as the second place, not the first. Say the round-half-up rule aloud verbatim at 1.275, and let 4.5 sit visibly stuck in the middle before the rule breaks the tie.
3. **Try It Together.** One line at a time — 0.62, then reset to 9-10 for 9.5, then 1.3-1.4 for 1.34. Pupils take turns at the board; the class agrees or corrects out loud. Name the deciding digit together before deciding. This round is for talking it through, not marking. Revoice the 9.5 answer as 'exactly halfway, and the rule says round up, so 10'.
4. **Sketch the Candidates in Your Copy.** Walk the room glancing for pupils who've marked both candidates at the ends before dotting the number — that's the whole point of the sketch. Watch for 9.5 being left uncircled because it looks stuck in the middle; that's the one to nudge.
5. **Class Challenge.** Keep the board work brisk — pupils take turns, everyone confirms each answer before moving on. Save your breath for the last one: let a pupil discover that rounding 9.95's tenths cascades to 10.0, then revoice 'the tenths filled up and pushed into the ones'.

6. **What Did We Notice?.** Prompt: 'when might losing a little detail actually matter?' Steer for real places — medicine doses, money at the till, building measurements. Revoice a strong one: 'so rounding is handy for a quick report, but not when the extra bit really counts.'

COMMON MISCONCEPTIONS

⚠ Rounding 0.34 to the nearest tenth, pupils look at the whole 34 and round to 0.4 because '34 is more than half'. They are looking at the wrong digit: only the hundredths digit decides.

On the number line, cover everything except the digit immediately right of the tenths place — the 4. 'Only this digit decides. It's less than 5, so we stay at 0.3.' Rebuild 0.34 between 0.3 and 0.4 so the marker visibly sits below halfway.

⚠ At 9.5 or 9.95, pupils freeze or write the wrong candidate because the answer becomes a two-digit or 'past the mark' number — they don't expect rounding to push past 10.

Let the number line range run past 10 so the higher candidate is visible on screen. For 9.95, work the carry slowly: the 9 tenths round up, fill a whole one, so 9.9 becomes 10.0. Let a pupil narrate the cascade rather than you telling it.

DIFFERENTIATION

EMERGING

- Stay in nearest-whole and nearest-tenth only; leave hundredths for teacher-supported moments. Keep the deciding digit circled on the board so pupils only judge 'is it 5 or more?'.
- In the copybook sketch, pre-write both candidate numbers at the line ends so pupils only place the dot and circle the winner.

DEVELOPING

- After the challenge bank, ask pupils to invent a decimal that rounds UP to 5 and another that rounds DOWN to 5 — then justify each with a quick candidate line.
- Pose a fill-in-the-blank: 0.6_ rounds to 0.7 to the nearest tenth — which digits work in the blank, and why?

PROFICIENT

- Give the carry-chain challenge: find a decimal that, rounded to the nearest tenth, jumps a whole two-digit boundary (like 9.95). Can they build one that carries twice, e.g. cascades through 99.95? Ask them to explain the run-out in writing on their copybook line, then read it back to the class.

↗ **Cross-curricular:** Tie to PE or the GAA — pupils pace a distance in the yard, measure it to the nearest tenth of a metre, then round to whole metres for a 'match report'.

ANSWER KEY

a) 1.3

b) 1.2

c) 1.27

Q1: 7 m

Q2: 10 m

Q3: 2 m

Q4: 0.6 m

Q5: 3.5 m

a) Always : The digit after the ones place is 7 so the number rounds up.

b) Never : The deciding digit is 2 which is less than 5 so it rounds down to 0.6.

c) Never : The thousandths digit is 5 so it rounds up to 1.24.

d) Sometimes : 9.96 rounds to 10.0, so the ones digit changes; 3.42 rounds to 3.4, so it does not.

EXTENSION SHEET · STRETCH ANSWERS

S1: 19.19

S2: 77.61

S3: €76.27

S4: 93.72

S5: 26.04