

Lesson 38 **NUMBER**

Reading and writing decimals with tenths; tenths on a number line

CURRICULUM ALIGNMENT

NUM.PVT.3

explore equivalent numerical expressions of numbers using the base ten system.

NUM.FRC.3a

compare and express in equivalent terms; and order fractions.

INTERACTIVES **Number Line** · challenge, display, explore

WHAT THIS LESSON TEACHES

A tenth is one of ten equal parts of a whole. We write tenths in the first place after the decimal point, so 0.1 means one tenth.

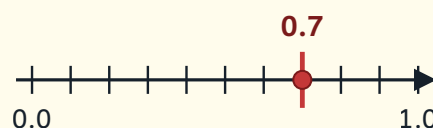
→ 0.5 sits exactly halfway between 0 and 1 on the track.

→ 1.2 is read 'one point two' and sits just past the whole lap 1.

MODEL THIS ON THE BOARD

READING 0.7 ON THE NUMBER LINE

- 1 The number line runs from **0** to **1** and is split into **ten** equal parts, each worth **0.1**.
- 2 Count seven jumps of one tenth from 0: the mark sits at **0.7**.
- 3 Read it aloud as zero point **seven**.



DISCUSSION STARTER

REFLECT

When you place a decimal on a number line, which whole-number landmark helps you most?

LESSON ARC

Open with a 0-to-1 line split into ten stretches and a runner on 0.5: nearer the start or the finish?

Model reading 0.3, 0.8, 1.5 and 0.6 on lines that name only the whole numbers, counting the jumps from the nearest whole number. Pupils place 0.1, 0.6, 1.3 and 1.9 at the board, then draw their own 0-to-1 line in their copy and mark 0.2, 0.5 and 0.9. The Class Challenge runs to 3: 0.4, 0.7, 1.2, 1.8, 2.3 and 2.9, saying first which two whole numbers each one sits between.

TEACHING MOVES

1. **Getting Started.** Display the 0-to-1 line split into ten with the runner on 0.5 as pupils settle. Take three hands-up answers, not open call-outs. When a pupil says 'it's in the middle', re-voice as 'halfway between the landmarks 0 and 1'.
2. **Watch and Notice.** Only the whole numbers are named on these lines, so count the jumps aloud with the class: three for 0.3, stressing 'zero point three' one digit at a time. Before 0.8, ask 'nearer 0 or 1?'. On 1.5 the line runs to 2: point to the landmark 1 the marker has passed, whole number first, then five tenths.
3. **Try It Together.** Run 0.1, 0.6, 1.3 and 1.9 in order, resetting the marker between each. Before each one the class says which whole number to count from; for 1.3 and 1.9 that is 1, so pupils count tenths on from 1, not 0. Watch for 1.9 placed near the 0.9 mark: point back at the landmark 1.

4. **Draw the Tenths Line in Your Copy.** Walk the room glancing for ten equal spaces, not for correct answers — this is practice, not marking. When you spot uneven jumps, a quick 'use your ruler' fixes most of them before pupils mark 0.2, 0.5, 0.9.
5. **Class Challenge.** Keep it brisk on the line to 3: 0.4, 0.7, 1.2, 1.8, 2.3 and 2.9. Insist on 'which two whole numbers is it between?' before the marker moves. Watch for 1.2 placed near 0.2 and 2.3 near 0.3: point at the whole-number landmark and let the pupil recount. A correct Check names the tenths on the line.
6. **What Did We Notice?.** Listen for 'five jumps out of ten, so it's the middle' and re-voice it. For the stretch-to-2 prompt, push pupils to say the whole-number part tells you which stretch to count in — name the landmark 1 again to head off the 1.2-near-0.2 error.

COMMON MISCONCEPTIONS

⚠ Pupils place 1.2 near the 0.2 mark — they count two tenths from 0 and ignore the whole-number part. Point at the whole-number landmark 1 on the interactive and say 'past the 1 first, then count on'. Reset the marker to 1 and have the pupil count two jumps from there, not from 0.

⚠ Pupils confuse 1.9 and 0.9 when placing on a line that stretches to 2 — both land 'near the end' of a stretch.

Ask which whole number each sits beside: 0.9 hugs the landmark 1, 1.9 hugs the landmark 2. Have the pupil point to the landmark before placing the marker.

DIFFERENTIATION

EMERGING

- Keep these pupils on the 0-to-1 line only while the class moves to the stretch-to-2 numbers; the whole-number-part step waits.
- Number the ten jumps 0.1 to 1.0 on the interactive so pupils count to a labelled mark rather than judging by eye.

DEVELOPING

- After the copybook line, ask them to add 0.35 to their own line and explain roughly where it sits between 0.3 and 0.4.
- Give a between-question: name a tenth that sits between 0.6 and 0.8, and justify it on the line.

PROFICIENT

- During Class Challenge, narrate a harder variant aloud for fast finishers — 'where would 2.4 sit if the line stretched to 3?' — and have them sketch it in the copybook margin.
- Ask them to explain to an imaginary younger pupil why 0.5 and $\frac{5}{10}$ land on the exact same spot.

✂ **Cross-curricular:** Tie to PE — pupils run a lap of the yard and call out their position as a tenth of the way round, 0.5 for halfway.

ANSWER KEY

Scaffold: visual check on the page

Q1: zero point four; 4

Q2: zero point six; 6

Q3: zero point five; exactly halfway

Q4: one point two; 1 whole and 2 tenths

Q5: one point eight; 1 whole and 8 tenths

a) Always : The first place after the point is always the tenths place.

b) Always : Five tenths is exactly half of ten tenths, so it is the midpoint.

c) Sometimes : 0.4 sits before 1 but 1.2 sits after 1, so it depends on the number.

d) Never : Seven tenths and four tenths are different amounts, so they are never equal.

EXTENSION SHEET · STRETCH ANSWERS

S1: between 4 and 5, closer to 4

S2: between 1 and 2, closer to 1

S3: between 1 and 2, closer to 1

S4: between 7 and 8, closer to 7

S5: between 5 and 6, closer to 5

Investigation: Tenths in real life — open-ended; scan pupils' working for valid solution paths rather than a single answer.