

Lesson 37 **NUMBER****Tenths: the first decimal place**

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

Fraction Strips · challenge, display, explore

Place Value Blocks (Dienes) · display

WHAT THIS LESSON TEACHES

A tenth is one of ten equal parts of a whole. Ten tenths make one whole, and we write tenths with one digit after the decimal point.

→ 3 means three tenths of a whole

→ $\frac{7}{10}$ and 0.7 both show seven tenths of a pizza

MODEL THIS ON THE BOARD

FOUR TENTHS OF A CHOCOLATE BAR

- 1 Take one whole bar split into **10** equal pieces
- 2 Shade **4** of those ten pieces
- 3 Say the amount as the fraction **$\frac{4}{10}$**
- 4 Write the same amount as the decimal **0.4**

DISCUSSION STARTER

REFLECT

Does 0.1 feel more like a fraction or a whole-number place to you? Why?

LESSON ARC

Open with one whole strip split into ten equal pieces on the IWB — pupils name one tenth before any notation appears. Move to the place-value-blocks interactive: one flat becomes ten rods, and each shaded amount gets all three names (tenths, fraction, decimal). Pupils shade their own ten-part bar in copybook. The Class Challenge climbs 0.1 to 0.9 at the board, and the lesson closes rebuilding 0.4 on the blocks.

TEACHING MOVES

1. **Getting Started.** Keep only the single ten-part strip on screen — no columns, no number line yet. Take three hands-up answers to 'what could we call one of these pieces?' and fish for 'one tenth'; if it doesn't come, say it and have the class echo it once.
2. **Watch and Notice.** Walk each place-value-blocks snapshot aloud, one rod at a time, pointing to the digit sitting just right of the decimal point. At three tenths, pause and ask 'shade one more — what decimal?' to pull 0.4 out loud. Land on seven tenths: point to the three unshaded rods so seven and three rebuilding ten is the line they leave on.
3. **Try It Together.** Pupils take turns shading 0.1, 0.5, 0.8, then all ten on the fraction-strips interactive; the class reads each amount as fraction and decimal in unison. At 0.5, stop on the half-strip beside it so they see $\frac{5}{10} = \frac{1}{2} = 0.5$. Listen for anyone saying 'point five' with no meaning — revoice as 'five of the ten equal parts'.

4. **Shade the Bar in Your Copy.** Pupils draw a ten-part bar, shade four, and write $\frac{4}{10}$ and 0.4 underneath. Walk the room glancing for roughly-equal parts — for pupils splitting into ten uneven chunks, hand them a ruler and get them to mark a light row of ten dots first.
5. **Class Challenge.** Brisk board turns through $0.1 \rightarrow 0.3 \rightarrow 0.7 \rightarrow 0.9$, checking each before moving on — consolidation, not re-teaching. At 0.9, ask 'how many more tenths to make one whole?' before the reveal. Watch for pupils counting the gaps between lines instead of the shaded parts.
6. **What Did We Notice?.** Pose 'what would 0.3 mean if we just wrote a 3?' and listen for pupils saying the point marks the 3 as three of ten parts, not three wholes. Revoice a strong answer: 'the little dot is the sign that says these are parts of a whole, not whole numbers.'
7. **Four tenths on the blocks.** Rebuild 0.4 on the place-value-blocks interactive with the class. Point to the four shaded rods, then to the digit just right of the decimal point, and have pupils call all three names: 'four tenths, $\frac{4}{10}$, 0.4' — closing the loop from Watch and Notice before the summary.

COMMON MISCONCEPTIONS

⚠ Pupils read 0.3 and 3 as the same amount — 'point three is just three'.

At the maths-talk step, put one whole flat (worth 3 wholes) beside three shaded tenths on the blocks. Same digit, wildly different size. Have the pupil say which is bigger and by how much.

⚠ When shading, pupils count the lines between the parts rather than the parts themselves, so 0.7 comes out as 8 or 6.

During the Class Challenge, stop and have the pupil point-count only the shaded rods aloud, ignoring the divider lines. The answer is the number of shaded parts, not the gaps between them.

⚠ Pupils say '0.5' fluently but as an empty label — 'point five' with no sense of size.

At Try It Together, freeze on the half-strip beside the tenths strip. Ask the pupil to show where 0.5 reaches — the exact midpoint — so five tenths, one half and 0.5 are visibly the same amount.

DIFFERENTIATION

EMERGING

- Pre-mark the ten dividing lines on the copybook bar so pupils only shade and label, not construct the ten equal parts.
- Keep these pupils on 0.1, 0.3, 0.5 at the board — the whole tenths that map cleanly to a single rod count — before the class reaches 0.7 and 0.9.

DEVELOPING

- After the copybook bar, ask them to shade the missing part too and name it: 'you shaded 0.4 — what decimal is the unshaded piece, and do the two make one whole?'
- At the Class Challenge, ask them to predict the decimal before the next pupil shades, then check against the board.

PROFICIENT

- On the blocks, ask: 'if ten tenths make one whole, what would eleven tenths look like?' Let them reason toward more than one whole on the copybook without being told the answer — this reaches toward next lesson's number-line work.
- Have them explain to the class, in their own words, why we can't drop the zero and write 0.4 as just .4 or as 4.

✓ **Cross-curricular:** Tie to measures — pupils measure a 1-metre length in tenths and read 0.3 m as three tenths of a metre, matching the strip on the board.

ANSWER KEY

Scaffold: visual check on the page

Q1: 0.6

Q2: 0.1

Q3: $\frac{3}{10}$

Q4: 0.7

Q5: $\frac{9}{10}$

Q6: 5 tenths

Spot: Four tenths is ****0.4****, not 4.0. The 4 sits in the tenths place, just after the decimal point. 4.0 means four wholes.

EXTENSION SHEET · STRETCH ANSWERS

S1: €1.75 (write both as cent: 130 cent vs 175 cent)

S2: €4.90 ($€4.09 = 409$ cent; $€4.90 = 490$ cent)

S3: €3.80 ($€3.80 = 380$ cent; $€3.08 = 308$ cent)

S4: 9 (tenths digit of 2.9)

S5: $6.96 = 6 + 0.9 + 0.06$

Investigation: Tenths all around us — open-ended; scan pupils' working for valid solution paths rather than a single answer.