Lesson 2 NUMBER

One whole, ten parts — introducing tenths

CURRICULUM ALIGNMENT

NUM.FRC.4a explore (model, compare and convert) the relationships between fractions, decimals and percentages.

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

INTERACTIVES Fraction Strips · challenge, display, explore

WHAT THIS LESSON TEACHES

If you split **one whole** into **ten equal parts**, each part is one **tenth**. Written as a fraction: **1/10**. Written as a decimal: **0.1**.

→ **3/10** = **0.3** (three tenths).
→ **7/10** = **0.7** (seven tenths).
→ Ten tenths make one whole: 10/10 = **1.0**.

LESSON ARC

Open with the shared-pizza question, then bring up the fraction-strips interactive — one whole strip above a strip cut into ten, with a halves strip beside it for contrast. Count the ten parts aloud and draw out that more parts means smaller parts. Pupils take turns shading named tenths at the board, then sketch and label 3/10 and 7/10 in their copies. The Class Challenge ends on the 'more than half but less than seven tenths' reasoning round.

TEACHING MOVES

1. **Getting Started.** Give quiet think-time, then take three hands-up answers — not call-outs. When a pupil says 'a tenth' or 'one out of ten', re-voice it as 'one tenth'. Then plant the seed: 'and if everyone put their slice back?'
2. **Watch and Notice.** Point along the ten-tenths strip while the class counts in unison — 'one tenth, two tenths…' to ten. On the halves contrast, slow right down and ask: which are bigger, the halves or the tenths? Land the line 'more parts means smaller parts' explicitly — this heads off pupils thinking ten always means bigger.
3. **Try It Together.** Call a tenths fraction, a pupil shades it at the board, the class names it aloud as 4/10. Then turn to the watching rows: 'how many more tenths would reach one whole?' Take two answers and re-voice the reasoning. Keep glancing back up at the lined-up whole strip so pupils see how far each amount sits from full.
4. **Sketch the Tenths in Your Copy.** Walk the room as pupils draw and divide their strip. Glance for two things only: are the ten parts roughly equal, and does the shaded count match the label? This is practice, not marking — fix shaky strips on the spot rather than grading.
5. **Class Challenge.** Keep the board work brisk — pupils take turns, the class confirms each answer, then move on. Shade 5/10 as the agreed reference point before the final round. For 'more than half but less than seven tenths', let the class reason out loud why six tenths is the only fit before anyone checks it.
6. **What Did We Notice?.** Listen for everyday tens — ten 10c coins in a euro, ten centimetres along a ruler, ten years in a decade. Re-voice a strong one: 'so ten of those equal parts rebuild one whole, just like our ten tenths.' This is the bridge into decimals next.

COMMON MISCONCEPTIONS

⚠ A pupil reasons that tenths must be bigger than halves because ten is bigger than two.

Hold the halves strip directly above the tenths strip on the IWB so one half visibly covers five of the little parts. Ask the pupil to point to a single half, then a single tenth — 'cutting one whole into more pieces makes each piece smaller'.

⚠ When shading four tenths, a pupil writes 4/6 — they count the four shaded parts over the six unshaded ones instead of the ten total.

Stop and have the class re-count all the parts of the whole strip together — ten, every time. The bottom number is always how many equal parts the whole was split into, shaded or not; the top is just how many we've shaded.

DIFFERENTIATION

EMERGING

- Pre-divide the IWB strip into its ten parts and have these pupils only count and shade, not judge whether the parts are equal.
- For the copybook, let pupils trace over a strip you've already divided into ten so they focus on shading and labelling 3/10 and 7/10.

DEVELOPING

- After 7/10, ask them to write how many more tenths reach one whole and prove it by shading on their copy strip.
- Pose a missing-shade puzzle: 'I shaded some tenths and there are exactly four parts left white — what fraction did I shade?'

PROFICIENT

- During the Class Challenge, narrate a harder variant aloud: 'shade an amount between five tenths and six tenths' — let them argue why no whole tenth fits, and what they'd need (smaller parts) to land between.
- Ask them to explain to the class, in their own words, why ten tenths and one whole are the same number written two ways.

Cross-curricular: Link to measures — pupils find the ten 1 cm marks between two whole-centimetre lines on their ruler and name one of them as a tenth of the way along.

ANSWER KEY

a) $3/10 = 0.3$

b) $7/10 = 0.7$

c) Any of $6/10$ ($= 0.6$) — only one tenths option between $1/2 = 5/10$ and $7/10$.

d) $10/10 = 1 = 1.0$

Q1: $2.52 = 2 + 0.5 + 0.02$

Q2: $6.96 = 6 + 0.9 + 0.06$

Q3: between 4 and 5, closer to 4

Q4: between 3 and 4, closer to 3

EXTENSION SHEET · STRETCH ANSWERS

S1: between 3 and 4, closer to 3

S2: $5.71 = 5 + 0.7 + 0.01$

S3: $8.32 = 8 + 0.3 + 0.02$