

What is a fraction? – review part-whole

CURRICULUM ALIGNMENT

NUM.FRC.4a

explore (model, compare and convert) the relationships between fractions, decimals and percentages.

INTERACTIVES [Pizza Slicer · challenge, display, explore](#)

LESSON ARC

Open with a pizza on the IWB cut into eight slices, three eaten — take three hands-up before confirming anything. On the pizza-slicer interactive, build $\frac{1}{2}$, $\frac{3}{4}$, $\frac{5}{8}$, $\frac{7}{12}$ one at a time, naming each in words before the symbol and drawing out that a bigger bottom number means smaller slices. Pupils sketch $\frac{1}{2}$, $\frac{3}{4}$, $\frac{5}{8}$ on pre-printed circle templates, then fold paper strips into halves, quarters and eighths. The display-only maths-talk looks back at the four screen pizzas.

TEACHING MOVES

- Getting Started.** Display the eight-slice pizza with three gone as pupils settle and take exactly three hands-up — not open call-outs. Don't confirm the answer; listen for who says 'three out of eight' versus 'three-eighths' and hold that for later.
- Watch and Notice.** Reveal one example at a time on the slicer so pupils can't read ahead. Say the words before the symbol every time — 'one out of two equal parts, one half' — and for $\frac{7}{12}$ stop and draw out the lesson's key idea: bigger bottom number, smaller slice. Keep saying 'equal parts'.
- Try It Together.** Call a fraction; one pupil resets the slicer to the right number of equal parts and shades while the class reads it back in unison. Before each pupil starts, ask the class 'how many equal parts?' then 'how many do we shade?' Revoice: 'the bottom number sets the slices, the top number sets how many we colour.'
- Sketch the Fractions in Your Copy.** Hand out the pre-printed circle templates first so pupils divide-and-shade rather than draw wonky circles freehand. Walk the room checking for equal slices and a labelled fraction underneath. If slices are wildly uneven, prompt 'are those parts fair?' and move on — no marking.
- Class Challenge.** Run the seat-folding as the lead: fold in half ($\frac{1}{2}$), into quarters ($\frac{1}{4}$ then $\frac{3}{4}$), into eighths (shade five for $\frac{5}{8}$), confirming each fold on the board with the slicer in challenge mode and pressing Check. Keep the board work brisk — confirm and move, don't re-explain each fold.
- What Did We Notice?.** Point back at the four screen pizzas and ask why the bottom number sets the size of the parts. Revoice a strong answer: 'cutting the same pizza into more pieces makes every piece smaller, even though we have more of them.' Head off 'bigger bottom number means bigger fraction' by pointing at the thin $\frac{7}{12}$ slices beside the $\frac{1}{2}$ slice.

COMMON MISCONCEPTIONS

⚠ Pupils read $\frac{7}{12}$ as a bigger fraction than $\frac{1}{2}$ because '12 is bigger than 2' — they rank fractions by the bottom number.

Put the $\frac{7}{12}$ pizza and the $\frac{1}{2}$ pizza side by side on the slicer. The twelfth-slices are visibly thinner. Say 'more pieces means each piece is smaller' and have a pupil point to the single biggest slice on each pizza.

⚠ Pupils say 'three out of eight' while pointing at unequal-looking parts — they count the parts but ignore the 'equal' rule.

Show two pizzas: one cut into eight fair slices, one cut into one big slice and seven slivers. Ask 'is three out of these eight a fair three-eighths?' Reinforce that the slicer keeps slices equal for us — that's the fair-sharing the screen does.

⚠ When sketching freehand, pupils divide a circle into roughly-equal parts and count them as a fraction even when the slices are obviously different sizes.

This is why the pre-printed templates go out before pencils. If a pupil's parts are uneven, don't correct the drawing — ask 'are those parts fair?' and have them re-fold a paper strip where the crease forces equal parts.

DIFFERENTIATION

EMERGING

- Stay on halves and quarters at the board and in the copybook while the class moves to eighths and twelfths — same templates, fewer slices to manage.
- Pre-divide one circle template into the slices needed so the pupil only shades and labels, not divides.

DEVELOPING

- After the $\frac{5}{8}$ fold, give a fresh strip and ask them to shade $\frac{6}{8}$, then say what fraction is left unshaded.
- Ask: which is more pizza, $\frac{3}{4}$ or $\frac{5}{8}$? Have them fold or sketch both to justify rather than guess.

PROFICIENT

- Set the strip-fold stretch already in the lesson: fold a fresh strip into thirds with no measuring — curl-and-check it — then shade $\frac{2}{3}$ and explain how they knew the thirds were equal.
- Pose: name a fraction with a bottom number bigger than 8 whose slices are still bigger than one-eighth — is that possible? Let them test it on the slicer.

➤ **Cross-curricular:** Tie to home economics — pupils name what fraction of a real pizza or sliced pan is left after equal portions are taken, reading the fraction aloud.

ANSWER KEY

a) $\frac{1}{2} = 4 \text{ slices} = \frac{4}{8}$.

b) $\frac{3}{4} = 6 \text{ slices} = \frac{6}{8}$.

c) $\frac{5}{8} = 5 \text{ slices}$.

d) $\frac{5}{8} > \frac{1}{2}$ (5 slices is more than 4 slices).

Q1: $\frac{3}{11}$

Q2: $\frac{5}{7}$

a) Always — Same numerator — bigger denominator means smaller piece.

b) Never — $\frac{1}{2}$, $\frac{2}{4}$, $\frac{4}{8}$ all equal a half.

c) Never — Opposite — bigger denominator = more, smaller pieces.

d) Always — $\frac{1}{2} = \frac{50}{100} = 50\%$.

e) Never — $\frac{1}{2} \neq \frac{2}{3}$. Equivalent fractions come from multiplying, not adding.

f) Always — Improper fractions: $\frac{5}{4}$, $\frac{7}{3}$, $\frac{9}{8}$ are all > 1 .

EXTENSION SHEET · STRETCH ANSWERS

S1: 12 parts ($\frac{4}{5} = \frac{12}{15}$)

S3: $\frac{5}{6}$

S2: $\frac{4}{11}$