

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

WHAT THIS LESSON TEACHES

A fraction is a number that names how many of the equal parts of a whole we have. It is written with a top number (how many parts we have) over a bottom number (how many equal parts the whole is split into).

- If a pizza is cut into 8 equal slices and 3 are left, three-eighths ($\frac{3}{8}$) of the pizza is left.
- In $\frac{5}{8}$ the numerator is 5 and the denominator is 8.

MODEL THIS ON THE BOARD

PIZZA PARTS LEFT ON THE PLATE

- 1 The whole pizza is cut into **8** equal slices.
- 2 Three slices have already been eaten so **3** parts are gone.
- 3 The fraction gone is written **$\frac{3}{8}$** .
- 4 That leaves **5** slices still on the plate, so the fraction left is **$\frac{5}{8}$** .

LESSON ARC

Open on the half-eaten eight-slice pizza and take three hands-up guesses without confirming. Walk four pizza examples one at a time on the slicer interactive, naming each fraction in words before writing the symbol and stressing equal parts. Pupils take turns at the board slicing and shading called fractions while the class reads them back. Sketch $\frac{1}{2}$, $\frac{3}{4}$ and $\frac{5}{8}$ in copybooks, then fold paper strips into halves, quarters and eighths at seats with board checks. Close by naming numerator and denominator on the familiar $\frac{5}{8}$ pizza.

TEACHING MOVES

1. **Getting Started.** Display the pizza image as pupils settle. Take three hands-up answers only — no open call-outs and no confirmation yet. Listen for ‘three out of eight’ versus ‘three-eighths’; both feed the lesson.
2. **Watch and Notice.** Reveal one pizza at a time so nobody reads ahead. For each, have the class say the words first (‘one out of two’, ‘three quarters’) before you write the symbol. Keep repeating equal parts. On $\frac{7}{12}$, pause and ask what happened to each slice as the bottom number grew.
3. **Try It Together.** Call fractions that vary the denominator — $\frac{1}{3}$, $\frac{2}{5}$, $\frac{3}{6}$, $\frac{4}{8}$. Before the pupil resets the slicer, ask the class ‘how many equal parts?’ then ‘how many do we shade?’. Revoice: bottom number sets the slices, top number sets how many we colour. Class reads each fraction back in unison to agree.
4. **Sketch the Fractions in Your Copy.** Pupils sketch $\frac{1}{2}$, $\frac{3}{4}$ and $\frac{5}{8}$ as circles, divide, shade, and label underneath. Walk the room glancing for equal-sized slices and the label. No marking. If slices look wildly uneven, prompt ‘are those parts fair?’ and move on.
5. **Class Challenge.** Hand out paper strips. Run the folding sequence at seats: halves → $\frac{1}{2}$; quarters → $\frac{1}{4}$ then $\frac{3}{4}$; eighths → $\frac{5}{8}$. After each fold, one pupil builds the same fraction on the pizza-slicer in

challenge mode and presses Check — keep board turns brisk. Watching the board is participation for the rest.

6. **What Did We Notice?** Look back at the four on-screen pizzas. Ask why the bottom number is the size of the parts, and what happened to each slice as it got bigger. Revoice: cutting the same pizza into more pieces makes every piece smaller. Head off 'bigger bottom means bigger fraction' by recalling the thin $\frac{7}{12}$ slices beside the $\frac{1}{2}$.
7. **What's Next.** Before the recap, write $\frac{5}{8}$ large on the known pizza. Point to 8 — denominator, equal-part size — then to 5 — numerator, how many shaded. Class chorus: numerator 5, denominator 8, five-eighths. Watch for swapped labels and revoice top-counts, bottom-names-size. Keep forward links brief; no equivalent fractions today.

COMMON MISCONCEPTIONS

⚠ Pupils say 'three out of eight' while looking at parts that are not equal — they count pieces without checking the pieces are the same size.

Freeze on the image or sketch. Ask 'are those parts fair?' and redraw with clearly equal slices before accepting the fraction name. Keep saying equal parts every time.

⚠ Pupils think a bigger bottom number makes a bigger fraction — ' $\frac{7}{12}$ must be more than $\frac{1}{2}$ because twelve is bigger than two'.

Put the $\frac{1}{2}$ pizza beside the $\frac{7}{12}$ pizza from Watch and Notice. Point at one half-slice versus one twelfth-slice: more parts means each part is smaller.

⚠ Pupils swap the new labels — calling the top number the denominator and the bottom the numerator. Point back at $\frac{5}{8}$ on the board. Gesture top then bottom while the class choruses: numerator on top counts the shaded parts; denominator underneath names the equal-part size.

DIFFERENTIATION

EMERGING

- Stay with halves and quarters on the slicer and in the copybook sketches; support the $\frac{5}{8}$ strip fold at the teacher table.
- Pre-draw the circle outlines in the copybook so the pupil only divides, shades and labels.

DEVELOPING

- After the three copybook sketches, ask them to sketch $\frac{2}{5}$ from memory and say aloud what the 5 and the 2 each mean.
- On the strip, after $\frac{5}{8}$, call $\frac{7}{8}$ and ask how the shaded amount changed without refolding.

PROFICIENT

- Stretch row already in the challenge: fold a fresh strip into thirds by curl-and-check, then shade $\frac{2}{3}$ and justify why the parts are equal.
- Pose: 'same pizza, bottom number gets bigger — does one shaded part get bigger or smaller? Write one sentence under your sketches.'

✂ **Cross-curricular:** Tie to SPHE sharing — fair shares of a class treat only work when the parts are equal.

ANSWER KEY

Scaffold: visual check on the page

Q1: $\frac{6}{9}$

Q2: $\frac{1}{10}$

Q3: $\frac{3}{4}$

a) **Always** : The denominator always names the total number of equal parts.

b) **Always** : Equal slices are required for the parts of a fraction.

c) **Never** : For a part of one whole the numerator is not larger than the denominator.

d) **Never** : Fractions need the whole to be split into equal parts only.

EXTENSION SHEET · STRETCH ANSWERS

S1: 6 parts ($\frac{3}{5} = \frac{6}{10}$)

S2: 12 parts ($\frac{4}{5} = \frac{12}{15}$)

S3: 14 parts ($\frac{7}{8} = \frac{14}{16}$)

S4: $\frac{5}{7}$

