

Lesson 2 Overview

Ratios and fractions

Activity	Time (min)	Description/Prompt	Materials
Introduction	5	<p>Introduce the context of buying a baguette to share for lunch. The use of a concrete object, which can be easily visualised, supports the ‘concrete, pictorial, abstract’ approach to developing an understanding of abstract mathematical concepts and structures.</p> <p>Discuss how friends Amy and Bikram could share the baguette. Acknowledge students’ ideas and approaches in order to build upon their existing knowledge. Remind students of the language of fractions and ratios.</p>	<p>Mini whiteboards</p> <p>Slides 2–3</p>
Explore 1	10	<p>Ask students to work in pairs, matching fraction cards to ratio descriptions of different ways the baguette could be shared.</p> <p>A deliberate design feature of the task is handing out the fraction cards without the diagram cards at this stage. It is likely that students will make some incorrect matches and realise they have made mistakes when they are unable to match all the cards. Introducing the diagram cards in Explore 2 is intended to help to resolve this cognitive conflict.</p>	<p>‘Sharing baguettes’ grid</p> <p>‘Fractions’ cards</p> <p>Slides 4–5</p>
Explore 2	15	<p>When students are a substantial way through matching ratios and fractions, give them the diagram cards to place in the column between the ratio and fraction columns.</p> <p>The use of a diagram to represent the ratio (part–part) and the fraction (part–whole) provides an insight into mathematical structure and highlights the connections between ratios and fractions.</p>	<p>‘Diagrams’ cards</p> <p>Scissors</p> <p>Slide 6</p>

Explore 3	15	<p>Once students have completed the ratio–diagram–fraction matches, give them a set of description cards to place along the edge of the grid.</p> <p>The description cards support students in making connections between fractions and ratios, and reinforce the ways that fractions and ratios are often described in exam questions.</p> <p>Students who have completed their matches can use the ‘More sharing’ handout to explore additional ways in which Amy and Bikram could share the baguette.</p>	<p>‘Descriptions’ cards</p> <p>‘More sharing’ handout (Extension)</p> <p>Glue</p> <p>Scissors</p> <p>A3 paper</p> <p>Slide 7</p>
Discuss	15	<p>Discuss what the diagrams revealed about the relationship between fractions and ratios, and how students adjusted their cards after being given the diagram cards. You may want to call on a pair who initially got it wrong and later corrected their work.</p> <p>Establish and discuss any links and connections that students made for themselves as they worked on the task.</p>	<p>Mini whiteboards</p> <p>Glue</p> <p>Slides 8–13</p>
Review	20	<p>Explore a common misconception with the students and discuss how fractions and ratios are linked. Check students’ understanding of how the numbers in a fraction are linked to the numbers in the corresponding ratio.</p> <p>Students could also be asked to calculate how much Amy and Bikram would need to pay for their share of the baguette in each of the scenarios A–I.</p>	<p>Mini whiteboards</p> <p>Slides 14–15</p>
Practice question	10	<p>Ask students to answer an exam question and after a few minutes discuss their thinking.</p> <p>Students may want to just check their solution, but the focus of the discussion should be on students’ thinking and exposing the connections that students have made between fractions and ratios.</p>	<p>Slide 16</p>