



Chapter 5: Ratio

| Number of lessons (between 6&8) | Content of the unit | Assumed prior learning (tested at the beginning of the unit) |
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| 9 | <ul style="list-style-type: none"> • Introduction to Ratio • Using Ratio for Recipe questions • Introduction to Proportion • Sharing using ratios • Ratios and fractions | <ul style="list-style-type: none"> • Find common factors of pairs of numbers • Convert between standard metric units of measurement • Convert between units of time • Recall multiplication facts for multiplication tables up to 12 × 12 • Recall division facts for multiplication tables up to 12 × 12 • Solve comparison problems |
| Assessment points and tasks | Written feedback points | Learning Outcomes (tested at the end and related to subject competences) |
| Pre test Post test (half term exams/ mock exams) | Diagnostic marking (TF)-(green sticker)-(PF)/(SF) yellow and orange stickers Traffic lighting of exam papers | <p>Can you solve problems that involve dividing in a ratio?</p> <p>Can you understand and use ratio notation?</p> <ul style="list-style-type: none"> • understand and use proportion as equality of ratios <p>divide a given quantity into two parts in a given part:part or part:whole ratio</p> <p>relate ratios to fractions and to linear functions</p> |



| Lesson | Clear learning intentions | Clear success criteria | Hook | Presentation of content | Guided practice | Independent practice (homework) | Closure |
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| 1 Introduction to Ratio | Can you understand and use ratio notation? | Use ratio notation. Write a ratio in its simplest form by cancelling common factors. | Population explosion | Mathswatch Clip 61 (old GCSE) Mathswatch Clip 38 (NEW GCSE) Boardwork Maths-KS3-N8- Ratio and Proportion-Slides 3-14 | Ratio worksheet (old) New GCSE Foundation textbook – Page 314-316 – Q2-Q10 (<i>exam question</i>), Q12. <i>(Strengthen):</i> Page 335 Q1a and Q1b. | Introduction to ratio worksheet (new) | Find two numbers with a simplest form ratio of 2:7 and a difference of 15. Discuss how students got their answer. Did they all do it the same way? Ask students to make up other problems for the group to solve. |
| 2 Using ratio for recipe questions | Can you solve problems that involve dividing in a ratio? | <ul style="list-style-type: none"> • Use ratio notation to describe a comparison of more than two measurements or objects • Convert between different units of measurement • State a ratio of measurements in the same units | | Mathswatch Clip 39(NEW GCSE) Recipe proportions activity | Ratio for recipe questions worksheet New GCSE Foundation textbook – Page 324-325: – Q6, Q7, Q8, Q9, Q10, Q11, Q12. <i>(exam question)</i> , Q19. | | Students to come up with their own question and swap with the person next to them. |



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| | | | | | Page 22, Q13b (<i>Strengthen</i>): Page 326 Q.4 | | |
| 3 Using ratio for recipe questions | Can you solve problems that involve dividing in a ratio? | <ul style="list-style-type: none"> • Use ratio notation to describe a comparison of more than two measurements or objects • Convert between different units of measurement • State a ratio of measurements in the same units | | Mathswatch Clip 39 (NEW GCSE) | Ratio for recipe questions worksheet Please see above (<i>Strengthen</i>): Page 326 Q.6 | | Ratio and proportion PowerPoint Slides 37-42 |
| 4 Introduction to Proportion | <ul style="list-style-type: none"> • understand and use proportion as equality of ratios | <ul style="list-style-type: none"> • Identify proportion in a situation • Find a relevant multiplier in a situation involving proportion • Solve problems involving proportional reasoning | Scale model starter Simple proportion starter | Mathswatch Clip 23 (old GCSE) Mathswatch Clip 42 (NEW GCSE) Boardwork Maths-KS3-N8- Ratio and Proportion-Slides 24-29 | Proportion worksheet (old) New GCSE Foundation textbook – Page 326-327 Q5, Q6, Q7, Q8, Q9 (<i>exam question</i>), Q14. (<i>Strengthen</i>): Page 327, Q10, Q11, Q12, Q13 | Introduction to proportion worksheet | John can buy 240 teabags for £5.49, or 80 of the same teabags for £2.29. Which is better value for money? (possible answer: 240 teabags for £5.49, because $3 \times 80 = 240$ but $3 \times £2.29 = £6.87$, or they may |



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| | | | | | | | compare cost per teabag or teabags.) |
| 5 Sharing using ratio | divide a given quantity into two parts in a given part: part or part: whole ratio | <ul style="list-style-type: none"> Find the value of a 'unit' in a division in a ratio problem Divide a quantity in two parts in a given part: part ratio Divide a quantity in two parts in a given part: whole ratio Express correctly the solution to a division in a ratio problem | Aunt dotty | Mathswatch Clip 94 (old GCSE) Mathswatch Clip 106 (NEW GCSE) Boardwork Maths-KS3-N8- Ratio and Proportion-Slides 16-23 | Sharing ratios worksheet (old) New GCSE Foundation textbook – Page 321-323 – Q4-Q14 (<i>exam question</i>), Q15 (<i>Strengthen</i>): Page 337 Q9 | | Two numbers are in the ratio 2: 3 and their sum is 35. What is the product of the numbers? (answer: numbers are 14 and 21 so $14 \times 21 = 294$) |
| 6 Sharing using ratio | divide a given quantity into two parts in a given part: part or part: whole ratio | <ul style="list-style-type: none"> Find the value of a 'unit' in a division in a ratio problem Divide a quantity in two parts in a given part: part ratio Divide a quantity in two parts in a given part: whole ratio Express correctly the solution to a division in a ratio problem | Ratio catchphrase starter | Mathswatch clip 94(old GCSE) Mathswatch Clip 106 (NEW GCSE) Boardwork Maths-KS3-N8- Ratio and Proportion-Slides 16-23 | Sharing ratios worksheet (old) New GCSE Foundation textbook – Page 326-327 – Q5-Q13 (<i>exam question</i>), Q14. (<i>Strengthen</i>): Page 336 Q7 and | Sharing using ratio worksheet (new) | Share £30 in the ratio 2 : 3 |



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| | | | | | Q8 | | |
| 7 Ratio and Fractions | relate ratios to fractions and to linear functions | Understand the connections between ratios and fractions | Odd one out | Mathswatch Clip 107 (NEW GCSE) | Ratios, fractions and graphs worksheet New GCSE Foundation textbook – Page 323-324 – Q4-Q10 (exam question), Q19. <i>(Strengthen):</i> Page 335 Q1a and Q1b. | | Draw a rectangular bar. Ask students to use the bar to model the following: <ul style="list-style-type: none"> ● 1/4 and 3/4 ● 1:3 ● 25% and 75% (answer: split the bar into four sections in every case.) |
| 8 Homework Lesson | | | | | | | |
| 9 Check up lesson | Revision of objectives learnt throughout the topic. | Formative assessment on the core objectives, grouped by topic. | | | | | |