Summer Learning Journey for Maths
Year 7H Unit 7 Multiplicative Reasoning

How does this unit link to prior learning?

- **Multiplication and division**
  Links to all lessons
- **Factors and multiples**
  Links to all lessons
- **Multiplying and dividing by powers of 10**
  Link to lesson 1: Converting units
- **Familiarity with metric units of measure**
  Link to lesson 1: Converting units
- **Understanding scaling in length, mass and capacity**
  Link to lesson 1: Converting units
- **Sharing quantities equally**
  Link to lesson 3: Sharing in a ratio

Prior Knowledge Check

1. What is 6 × 14?
   What is 64 ÷ 4?

2. What are the factors of 12?
   What are the first 5 multiples of 12?

3. What is 35 × 1000?
   What is 35 ÷ 100?

4. How many centimetres are in 1 metre?

5. If a recipe uses 2 cups of flour and you double it, how many cups of flour do you need?

6. If 24 sweets are shared equally between 6 children, how many sweets does each child get?

What will you be learning about?

To simplify and share in a ratio.
To be able to solve problems both worded and not involving proportion.

We will develop our learning each week by focusing on:

1. Converting Units • Convert between metric and imperial units. • Use metric units.	**RAG**	**2. Writing Ratios** • Write a ratio in its simplest form. • Simplify a ratio expressed in fractions or decimals.	**RAG**
3. Sharing in a given ratio • Share a quantity in 2 or more parts in a given ratio.		**4. Consolidation lesson** • Consolidation on all work covered so far on the topic. • Long periods of deliberate practice. • Should contain exam questions	

5. Proportion • Understand the relationship between ratio and proportion.		**6. Direct Proportional Reasoning** • Solve simple word problems involving ratio and direct proportion.	
7. Inverse Proportional Reasoning • Solve simple word problems involving ratio and inverse proportion.		**8. Unitary Method** • Solve problems involving ratio and proportion using the unitary method. • Write ratios in the form 1 : n • Solve best buy problems.	
9. Revision Lesson • Select topics you feel the class need to revise. • Classroom based or Mathswatch.		**10. Assessment Lesson** • Do 10-minute top up and go through answers together, students self-assess. • Open book assessment done in silence.	
11. Feedback Lesson • Student to highlight their traffic light sheet. • Teacher to go through test and students to self-assess in green. • Students to complete the NOW section of the WOW-HOW-NOW sheet.			

Key Vocabulary

Simplify	Common factor	Share	Ratio	Inverse	Directly	Proportional

How will this help you in the future?

KS4

- GCSE questions often *assume* fluency with ratio tables and multiplicative relationships rather than teaching them explicitly.
- KS3 multiplicative reasoning introduces: percentage increase/decrease as multipliers (e.g. ×1.2, ×0.85), repeated multiplication.
- Used heavily in: Compound interest, depreciation, reverse percentages, GCSE problem-solving questions involving financial contexts.
- Multiplicative reasoning helps students recognise: linear relationships, constant rate of change, scaling on axes.

Beyond LHS

- Multiplicative reasoning underpins everyday money decisions:
  - Understanding discounts (25% off ≠ subtracting 25)
  - Comparing deals (3 for £5 vs £1.80 each)
  - Interest, loans, and savings growth
  - Taxes, pay rises, inflation
- Many jobs rely on multiplicative thinking, even if they aren't "maths jobs":

Examples:

- Construction: scale drawings, material quantities
- Healthcare: medication dosages, body-weight ratios
- Retail & business: profit margins, stock levels
- IT & data: rates, percentages, growth
- Trades: measurements, tolerances, conversions