Hampshire County Council
Improvement and Advisory Service

HIAS MOODLE+ RESOURCE

Year 4 Unit Plan 4.3
Multiplication and Division

Autumn term

HIAS Maths Team
September 2026
Final version

Overview

This document contains…

Year 4 Unit Plans linked to the Hampshire Medium Term Overview

Points to consider when using this resource:

These unit plans provide an example of how medium-term planning could be developed into units of work. These unit plans will need to be adapted to meet the needs of pupils. The unit plan provides an outline of a possible learning journey with suggestions of types of tasks that could be used. They also identify required prior learning, some common misconceptions and an indication of key skills pupils need to secure competency. It is assumed that teachers will make use of appropriate mathematical representations (manipulatives, visuals and symbolic) to support conceptual understanding for pupils alongside procedural fluency.

National Curriculum Links:

Multiplication and Division

Pupils should be taught to:

- Recall multiplication and division facts for multiplication tables up to 12 × 12
- Use place value, known and derived facts to multiply and divide mentally, including multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers
- Recognise and use factor pairs and commutativity in mental calculations
- Multiply two-digit and three-digit numbers by a one-digit number using formal written layout
- Solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects

<table>
<tr><td colspan="2">This Year 4 unit builds strong multiplication and division fluency from previous learning in Year 3, helping pupils recall and connect facts for the 3, 4 and 8 times tables. Pupils learn how facts relate through fact families, understand key rules when multiplying and dividing by 0 and 1, and apply the commutative law to calculate efficiently. By using place value, known and derived facts, pupils develop flexible mental strategies for both multiplication and division, preparing them for more complex calculations and problem solving.</td><td>Notional Time:

10 sessions</td></tr>
<tr><td>Check and Refresh - skills and knowledge that pupils need to know</td><td>Verbal coding- precise mathematical language to model during worked examples</td><td>Mastering Key Facts in Key Stage 2 – developing fluency and automaticity</td></tr>
<tr><td>Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.

Understand the inverse relationship between multiplication and division.

Write and use multiplication table facts with the factors presented in either order.</td><td>If I know…I also know…
Any number multiplied by zero is equal to ____.
Any number multiplied by 1 is equal to ____
____groups of one = ____
____groups of zero = ____
When you divide a number by ___ , the number remains the same.
There are ____ 1s in _____.</td><td>Y2 & 3 Recap: Recall multiples of 2, 3, 4, 5, 8 and 10 up to 12 in any order, including missing numbers and related division facts fluently.
Recall multiples of 6 up to 12 x 6 in any order, including missing numbers and related division facts with growing fluency.</td></tr>
<tr><td>Mathematical Concepts- important pieces of information learners should take away from the unit</td><td>Watch out for</td><td>DfE Ready -to- progress criteria</td></tr>
<tr><td rowspan="2">Multiplication and division facts are connected and flexible
Pupils understand that multiplication and division facts belong together and can be used in different ways.
Multiplication is commutative
Pupils choose efficient ways to calculate mentally.
Place value and known facts can be used to calculate mentally
This ensures pupils are not overly reliant on written methods and can reason efficiently, check answers, and solve problems confidently.</td><td rowspan="2">Pupils who are not secure with the 3, 4 and 8 times tables.

Pupils who cannot use known facts to derive new facts.

Pupils who do not recognise that division is the inverse of multiplication.

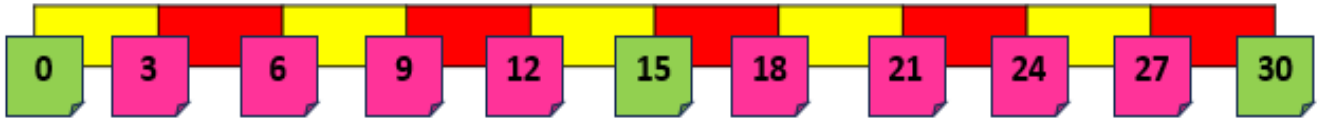
Pupils who cannot articulate the number in each group and the number of groups, particularly when multiplying by 0 and 1, or dividing by 1.

Pupils who are not confident with their times-table facts, may struggle with multiplying three numbers together.</td><td>4MD-1

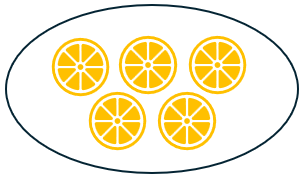
4MD-2

4MD-3</td></tr>
<tr><td>Formative assessment questions - key questions to support pupil reasoning and teacher assessment
What is the same and what is different?
What if I change…?
Can you give me an example of… and another…and another?
Which is harder and which is easier…?
If I know this, then what else do I know?</td></tr>
</table>

Visual coding: key representations



3 x ____ = ____

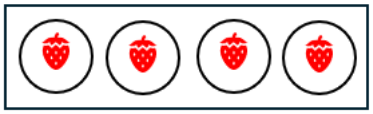


5 oranges shared into 1 equal group is equal to _____

5 ÷ 1 = ____

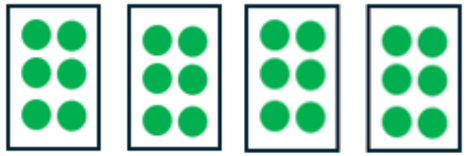
Match the statements to the pictures.

4 groups of 0



4 groups of 1

1 group of 4



= (3 x 2) x 4

Fact Family		**Nearby**
3 x 8 = 24	24 ÷ 3 = 8	2 x 8 = 24
8 x 3 = 24	24 ÷ 8 = 3	4 x 8 = 32

24		
8	8	8

If I know....

3 x 8 = 24

Then I know...

Equivalent

8 + 8 + 8 = 24

3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 = 24

Place Value

3 x 80 = 240

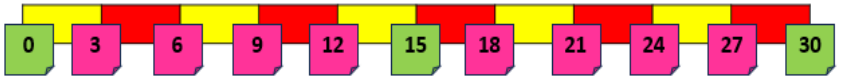
30 x 8 = 240

20 x 80 = 2400

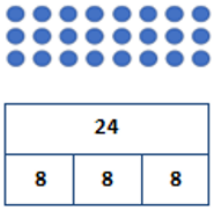
300 x8 = 2400

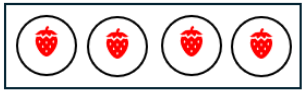
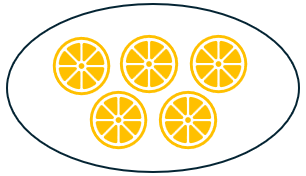
3 x 800 = 2400

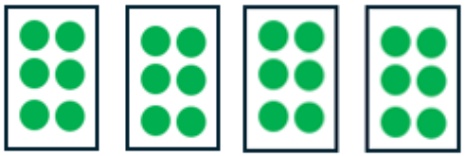
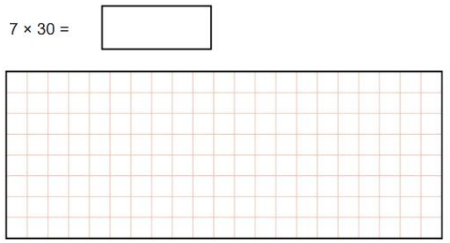
Autumn unit 4.3 (2 weeks)	Spring unit 4.9 (2 weeks)	Summer 4.11 (3 weeks)	Summer unit 4.14 (2 weeks)
I can recall and use multiplication and division facts for the 3 times table. I can recall and use multiplication and division facts for the 4 times table. I can recall and use multiplication and division facts for the 8 times table. I can find fact families for the 3, 4 and 8 times table. I can multiply by 0 and 1. I can divide by 1. I can multiply three numbers (commutative) I can use place value, known and derived facts to multiply mentally. I can use place value, known and derived facts to divide mentally.	I can recall and use multiplication and division facts for the 6 times table. I can recall and use multiplication and division facts for the 12 times table. I can find fact families for the 6- and 12-times table. I can recognise and use factor pairs and commutativity in mental calculations. I can solve problems using the distributive law to multiply one-digit numbers by one digit. I can solve problems using the distributive law to multiply two-digit numbers by one digit. I can multiply two-digit numbers by one-digit numbers using known facts (box array). I can divide two-digit numbers by one-digit numbers using known facts (box array). I can solve missing number problems involving multiplication and division. I can solve scaling problems involving multiplication. I can solve scaling problems involving division.	I can recall and use multiplication and division facts for the 7 times table. I can find fact families for the 7 times table. I can solve problems using the distributive law to multiply one-digit numbers by one digit. I can solve problems using the distributive law to multiply two-digit numbers by one digit. I can multiply a two-digit number by a one-digit number using the grid method. I can multiply a three-digit number by a one-digit number using the grid method. I can solve scaling problems involving multiplication. I can divide two-digit numbers by one-digit numbers using short division. I can solve scaling problems involving division.	I can recall and use multiplication and division facts for the 9 times table. I can recall and use multiplication and division facts for the 11 times table. I can recall multiplication and division facts for multiplication tables up to 12 × 12 I can find fact families for the 9- and 11- times table. I can use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers I can recognise and use factor pairs and commutativity in mental calculations I can multiply two-digit and three-digit numbers by a one-digit number using formal written layout I can solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.

Proposed lesson sequence to support development of mathematical concepts	
Developing fluency and automaticity – ongoing daily practice	
Mastering Key Facts in Key Stage 2	**Autumn Term Ongoing Mental Fluency Practice** • Y2 & 3 Recap: Recall multiples of 2, 3, 4, 5, 8 and 10 up to 12 in any order, including missing numbers and related division facts fluently. • Recall multiples of 6 up to 12 x 6 in any order, including missing numbers and related division facts with growing fluency.
Counting Fluency	• I can count from 0 in multiples of 3, 4 and 8. • Course: Primary Counting Progression | Maths Moodle
I can…	**Mathematical Concepts, Key Skills and Suggested Tasks**
10 sessions – Multiplication and Division	
I can recall and use multiplication and division facts for the 3, 4 and 8 times table.	In this step, pupils build on and consolidate skills developed in Year 3, with opportunities to revisit and deepen learning over several sessions in order to secure understanding. Assessment should focus on pupils' ability to: • Instantly recall multiplication and division facts for the 3, 4 and 8 times tables • Solve missing number problems, showing flexibility and confidence with known facts **Use of counting stick, based on the '1, 10, 5' derive approach:** • I am going to work out the 3 times tables using my counting stick. • The first number I want here is 3. **1** x 3 is 3. • If I know that **10** x 3 = 30, I know that half of that is **5** x 3 = 15. • Double 3 is 6. So **2** x 3 is 6. • Double 6 is 12. **4** x 3 is 12. • Double 12 is 24. **8** x 3 = 24 • To find **3** x 3, I can add one group of 3 to 2 x 3 or take one group away from 4 x 3. I think 6 + 3 is easier than 12 - 3. • To find **6** x 3, I can double 3 x 3 or add one group of 3 to 5 x 3. I know double 9 is 18 . • To find **7** x 3, I can add one group of 3 to 6 x 3 or take one group of 3 from 8 x 3. I think 21 + 3 is easier than 27 - 3. • To find **9** x 3, I can add one group of 3 to 8 x 3 or take one group of 3 from 10 x 3. I think 30 - 3 is easier than 24 + 3. 

I can find fact families for the 3, 4 and 8 times table.	This small step makes inverse relationships explicit. Fact families help pupils clearly see that multiplication and division involve the same three numbers and that division is the inverse of multiplication. It helps to secure fluency and understand that multiplication and division are connected. **Suggested tasks:** • Here is an example of a Derivation Board using the multiplication fact 3 x 8 = 24. • Encourage pupils to create their own for key facts in the 3, 4 and 8 times tables, including the fact family, equivalent (using repeated addition) and drawing an array and bar model. • As a greater depth challenge, you could ask pupils to also find nearby facts and derive facts from the known fact by multiplying by 10 and 100.

<table>
<tr><td colspan="2">Fact Family
3 x 8 = 24
 24 ÷ 3 = 8
8 x 3 = 24
 24 ÷ 8 = 3</td><td>Nearby
2 x 8 = 24
4 x 8 = 32</td></tr>
<tr><td rowspan="2"> 
</td><td>If I know….
3 x 8 = 24
Then I know...</td><td rowspan="2">Place Value
3 x 80 = 240
30 x 8 = 240
20 x 80 = 2400
300 x8 = 2400
3 x 800 = 2400</td></tr>
<tr><td>Equivalent
8 + 8 + 8 = 24
3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 = 24</td></tr>
</table>

I can multiply by 0 and 1.	In this step, learning that any number multiplied by 0 equals 0 helps pupils understand that maths has clear, consistent rules. Multiplying by 0 links directly to meaning: *zero groups of something results in nothing*. This reinforces understanding of multiplication as repeated addition and grouping, rather than just a set of facts to memorise. Multiplying by 1 reinforces that multiplication can represent *one equal group*. Pupils learn that one group of a number is still that number. **Key questions:**  • There are 3 plates. • Each plate has zero cakes on it. • How many cakes are there in total? • Complete the multiplication sentence: 3 x ____ = ____ Match the statements to the pictures. 4 groups of 0  4 groups of 1  1 group of 4  Design tasks that encourage pupils to consider how many groups of 0 or 1 there are to reinforce multiplying by 0 or 1. Use the following stem sentences: • ____groups of one = ____ • ____groups of zero = ____
I can divide by 1.	This step helps pupils understand that 1 is the *identity number* for multiplication and division — it changes nothing. Dividing by 1 shows that if nothing is being shared or grouped further, the value remains unchanged. Design tasks that encourage pupils to consider that when they divide by 1, the number remains the same. Use the following stem sentences: • When you divide a number by ___ , the number remains the same. • There are ____ 1s in _____. • 5 oranges shared into 1 equal group is equal to _____ • I can use this division statement: 5 ÷ 1 = ____ 

I can multiply three numbers (commutative)	When pupils multiply three numbers, they learn that the *order* in which numbers are multiplied does not affect the result (e.g. 2 × 3 × 4 = 3 × 2 × 4). This reinforces the commutative nature of multiplication and helps pupils trust and apply this rule with confidence. Being able to reorder numbers allows pupils to choose easier combinations first (e.g. 5 × 4 × 2 → 4 × 2 = 8, then 8 × 5 = 40). This builds mental fluency and encourages pupils to think strategically rather than follow fixed procedures. **Key questions:** • Encourage pupils to make arrays to support multiplying three numbers together • For example:  • How does this array show (3 x 2) x 4? Can you show it in another way using the commutative law? E.g. (2 x 4) x 3 • Repeat for other sets of three numbers for pupils to multiply together.
I can use place value, known and derived facts to multiply mentally.	This step encourages the use of mental multiplication, where pupils choose efficient strategies rather than relying on one fixed method. For example, knowing that 6 × 8 can be thought of as 6 × 4 × 2 shows flexible thinking and secure fluency. Many calculations are quicker and more appropriate to solve mentally. **Key questions: If I know…I also know…** **If I know...I also know...** **3 x 7 = 21** — **4 x 9 = 36** — **8 x 6 = 48** 30 x 7 = ? — 4 x 90 = ? — 80 x 6 = ? ? = 70 x 3 — 3 x 90 = ? — ? = 800 x 6 7 x 300 = ? — 30 x 9 = ? — ? = 60 x 80  Encourage pupils to consider what known fact they should use to help them calculate 7 x 30. For example, if I know 7 x 3 = 21, I also know 7 x 30 = 210. Repeat for other calculations, focussing on known times tables.

I can use place value, known and derived facts to divide mentally.	This step promotes efficient mental division, encouraging pupils to think flexibly rather than depend on one set procedure. For example, understanding that dividing by 8 can be broken down into dividing by 4 and then by 2 (e.g. 48 ÷ 8 → 48 ÷ 4 ÷ 2) demonstrates secure understanding and fluency. Many division calculations are faster and more appropriate to work out mentally using these strategies.
	
	Checking for understanding questions:
	
	• *'Same-structure, different numbers'*
	• Encourage pupils to spot patterns rather than recalculating every time
	• Example sequence:
	  ○ 24 ÷ 6 =
	  ○ 240 ÷ 6 =
	  ○ 2400 ÷ 6 =
	• What stays the same? What changes? Why?
	• What is the known fact that you used to help you?
	
	Design tasks that encourage pupils to reason mathematically, using precise language to justify their thinking. Where appropriate, encourage pupils to explain, prove, or represent their thinking, identifying the known fact that they used to help them.

HIAS Resources to support:

- Reasoning and Intelligent Practice Tasks: Reasoning and Intelligent Practice Tasks
- Faded Scaffolds and Intelligent Practice: Faded Scaffolds and Intelligent Practice
- Paired Examples: Paired Examples
- Entry and Exit tickets: Entry and Exit Tickets
- Interleaving, Recall and Retrieval: Interleaving, Recall and Retrieval (hants.gov.uk)
- Connect4Maths: Connect4Maths - Primary
- Moderation Documents: Moderation Documents
- KS1 Key Facts: Key Stage 1 Key Facts Document
- Mastering Times Tables: Mastering Times Tables

NCETM Resources to support:

- Exemplification of ready -to -progress criteria (RTPS): Exemplification of ready-to-progress criteria | NCETM
- NCETM Professional Development materials spine 1: Number, Addition and Subtraction | NCETM ;
- The NCETM Mastery Task booklets can be used as a source of tasks to support end of year teacher assessment for both EXS and GDS Teaching for Mastery Booklets Yr1-6

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