FORSBROOK CE PRIMARY MATHEMATICS

NCETM Mastering Number · Year 4 overview

These termly overviews are produced by the NCETM (National Centre for Excellence in the Teaching of Mathematics) for its Mastering Number programme. The wording is the NCETM's; the layout follows our school design.

	Term 1	Term 2	Term 3
Overview	Pupils will have an opportunity to consolidate multiplication facts that have been the focus of learning in KS1 and Year 3, such as doubles and the 5 and 10 times tables. They will explore multiplicative contexts and apply these facts to them and explore relationships between factors and associated products when looking at larger numbers. The use of gesture by the teacher and pupil will support with making connections. **Pupils will:** • consider 'many as 1' – seeing that a 'unit' can represent more than 1 • sort and classify factors and products using multiplicative number sense • recap doubles • recap × 10 and × 5 (connect to halving and doubling) • explore square numbers • use the distributive property to explore the facts in the 11 and 12 times table • use the distributive property to explore the facts in the 9 times table • use the commutative property of multiplication to reorder factors to reduce the number of facts that need to be learnt and start to explore the core multiplication facts table (CMF)	Pupils will explore the core multiplication facts focusing on becoming secure with two facts per week, so that all are known and can be retrieved in a random order. As a class they will support one another to retrieve these facts and use a 'Going for Gold' approach, so that all facts are known as an oral response rather than having to be derived. They will continue to develop multiplicative number sense looking at, for example, the magnitude and/or relationship of related products. **Pupils will:** • sort and classify factors and products using multiplicative number sense • practise retrieving multiplication facts using the oral pattern • know all the core multiplication facts and those related to the 11 and 12 times table • represent the structure of a maths story	Pupils will continue to retrieve known facts focusing on those that are less secure. They will continue to apply facts to multiplicative contexts and connect both multiplication and division equations to represent the maths story. In particular, they will connect missing factor equations to division. They will sort and classify products into multiples and not multiples of a given number knowing that, for example, 38 ÷ 4 will not result in a whole number quotient because 38 is not a multiple of 4. **Pupils will:** • practise retrieving multiplication facts using the oral pattern • sort and classify factors and products using multiplicative number sense • connect multiplicative contexts to writing and interpreting equations and connect multiplication equations, and multiplication equations with a missing factor, to division, knowing that the product in a multiplication equation is equivalent to the dividend in the corresponding division equation
Ready-to-progress criteria	This term will build and consolidate the Year 3 RtP listed as well as support the consolidation of the following Year 4 RtP criteria: **3NF–2** Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number. **4NF–1** Recall multiplication and division facts up to 12 × 12, and recognise products in multiplication tables as multiples of the corresponding number. **4MD–3** Understand and apply the distributive property of multiplication.	This term will particularly support the teaching and consolidation of the following RtP criteria: **4NF–1** Recall multiplication and division facts up to 12 × 12, and recognise products in multiplication tables as multiples of the corresponding number. **4MD–2** Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication. **4MD–3** Understand and apply the distributive property of multiplication.	This term will particularly support the teaching and consolidation of the following RtP criteria: **4NF–1** Recall multiplication and division facts up to 12 × 12, and recognise products in multiplication tables as multiples of the corresponding number. **4MD–2** Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication.

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NCETM Mastering Number · Year 5 overview

	Term 1	Term 2	Term 3
Overview	Pupils will have an opportunity to consolidate multiplication facts that have been the focus of learning in previous years and use the core multiplication facts table (CMF) to practise those that are less secure. They will explore multiplicative contexts and scale known facts by 10 and 100 and explore relationships between factors and associated products when looking at larger numbers. The use of representations, such as arrays, and the use of gesture by the teacher and pupil will support pupils to see structure and to make connections. **Pupils will:** • continue to practise retrieving multiplication facts using their oral pattern and focus on those that are less secure • explore contexts where 1 is a factor • recap scaling by 10 and then apply to scaling by 100 (creating multiples of 10 and 100 – not looking at decimals) • apply scaling in the contexts of ratios • make links between multiplication and division expressions as well as equations in different multiplicative contexts • write an improper fraction as a whole number, such as 36/6 = 6; the dividend is a multiple of the divisor • find a unit fraction of a number to connect the known division fact to scaling down; the dividend is a multiple of the divisor • continue to explore multiplicative contexts	Pupils will continue to retrieve the core multiplication facts in a random order. They will practise these facts when using the written algorithms for multiplication and division. They will continue to develop multiplicative number sense and connect contexts to equations. When looking at division there will be a focus on remainders and knowledge of when a number is 1 more, 2 more, etc., than a given multiple. They will continue to sort improper fractions into those that will give a whole number quotient and those that do not, and use this knowledge to write improper fractions as mixed numbers and vice versa. **Pupils will:** • continue to practise retrieving multiplication facts using their oral pattern so that they know all the core multiplication facts • connect a multiplication and addition equation to a division equation with a remainder • develop multiplicative number sense through using knowledge of divisibility laws • sort and classify improper fractions into those that give a whole number quotient and those that do not	Pupils will focus on multiplicative composition of number. When a context gives rise to more than two factors, they will use the associative and the commutative property of multiplication to make calculations more accessible. When working with larger numbers they will be encouraged to consider how they see the maths as they shift from one expression to another, for example 3 × 72 to 3 × 73, and 3 × 72 to 4 × 72, being able to explain what each number represents. They will also make connections when number facts have been scaled by 10 (or 100). For example, 5 × 6 = 30; 30 ÷ 5 = 6 and 50 × 6 = 300; 300 ÷ 50 = 6. They will also apply known facts to when a factor is 1/10 of the size, making connections to decimal fractions where the denominator of a unit fraction is a multiple of 10. **Pupils will:** • continue to connect multiplicative contexts to writing and interpreting equations • apply scaling by 10, 100, 1/10 or 1/100 to known facts • look at the multiplicative composition of number • explore expressions with three factors and use brackets, considering how the associative property and commutative property can be used to make calculations easier to solve

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	Term 1	Term 2	Term 3
Ready-to-progress criteria	This term will build and consolidate some of the Year 4 RtPs listed as well as support pupils' understanding of the following Year 5 RtP criteria: **4MD–1** Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size. **4NF–1** Recall multiplication and division facts up to 12 × 12, and recognise products in multiplication tables as multiples of the corresponding number. **4MD–3** Understand and apply the distributive property of multiplication. **5NF–1** Secure fluency in multiplication table facts, and corresponding division facts, through continued practice.	This term will build and consolidate the Year 4 RtPs listed as well as support pupils' understanding of the following Year 5 RtP criteria: **4NF–1** Recall multiplication and division facts up to 12 × 12, and recognise products in multiplication tables as multiples of the corresponding number. **4NF–2** Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders, and interpret remainders appropriately according to the context. **4MD–2** Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication. **5NF–1** Secure fluency in multiplication table facts, and corresponding division facts, through continued practice.	This term will build and consolidate the Year 4 RtPs listed, as well as support pupils' understanding of the following Year 5 RtP criteria: **4NF–1** Recall multiplication and division facts up to 12 × 12, and recognise products in multiplication tables as multiples of the corresponding number. **4MD–2** Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication. **5NPV–1** Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01. **5NF–1** Secure fluency in multiplication table facts, and corresponding division facts, through continued practice. **5NF–2** Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth). **5MD–1** Multiply and divide numbers by 10 and 100; understand this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size.