Buckingham Park Cof E Primary School Maths Progression documents

Multiplication and Division

Objectives	Y1	Y2	Y3	Y4	Y5	Y6
National curriculum objectives	-solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	-recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers -show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot -calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs -solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	-recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables -write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods -solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects	-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 three 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 one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects	-identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers -know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers -establish whether a number up to 100 is prime and recall prime numbers up to 19 -recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) -multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers -multiply and divide numbers mentally drawing upon known facts -divide numbers up to 4 digits by a one-digit	-identify common factors, common multiples and prime numbers -use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy -multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication - divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context - divide numbers up to 4 digits by a two-digit number using the formal written method of short division where

					number using the formal written method of short division and interpret remainders appropriately for the context -multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 -solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes -solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates -solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	appropriate, interpreting remainders according to the context -perform mental calculations, including with mixed operations and large numbers -solve problems involving addition, subtraction, multiplication and division -use their knowledge of the order of operations to carry out calculations involving the four operations
Dfe ready to progress criteria	**1NF-1** Develop fluency in addition and subtraction facts within 10 **1NF-2** Count forwards and backwards in	**2MD-1** Recognise repeated addition contexts, representing them with multiplication equations and calculating the product,	**3NF-1** Secure fluency in addition and subtraction facts that bridge 10, through continued practice.	**4NF-1** Recall multiplication and division facts up to 12 × 12 and recognise products in multiplication	**5NF-1** Secure fluency in multiplication table facts, and corresponding division facts, through continued practice.	**6AS/MD-1** Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative

	multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers.	within the 2, 5 and 10 multiplication tables. **2MD-2** Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotitive division).	**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. **3NF-3** Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10). **3MD-1** Apply known multiplication and division facts to solve contextual problems with different structures, including quotitive and partitive division	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. **4NF-3** Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100). **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. **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	**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. **5MD-2** Find factors and multiples of positive whole numbers, including common factors and common multiples, and express a given number as a product of 2 or 3 factors. **5MD-3** Multiply any whole number with up to 4 digits by any one-digit number using a formal written method. **5MD-4** Divide a number with up to 4 digits by a one-digit number using a formal written method, and interpret remainders appropriately for the context.	relationships (multiplicative relationships restricted to multiplication by a whole number). **6AS/MD-2** Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding. **6AS/MD-3** Solve problems involving ratio relationships. **6AS/MD-4** Solve problems with 2 unknowns.

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Power Maths unit/s and when taught in school	Textbook 1A Taught in Autumn Unit 2: Part-whole within 10 – lesson 7 (1NF-1) Unit 3: Addition within 10 – lesson 1,2,4 (1NF-1) Unit 4: Subtraction within 10 – lesson 5 (1NF-1) Textbook 1B Taught in Spring Unit 9: Numbers to 50 Textbook 1C Taught in Summer Unit 11: Multiplication and division – lessons 1-3 (1NF-2)	Textbook 2B Taught in Spring Unit 6: Multiplication & Division (1) – lesson 4 (2MD-1) Lessons 7 and 8 (2MD-2) Unit 7: Multiplication & Division (2) – lesson 1,5,7 (2MD-1) Textbook 2C Taught in Summer Unit 12: Problem solving & efficient methods – lesson 10 (2MD-2)	Textbook 3A Taught in Autumn Unit 2: Addition and subtraction (1) – lesson 6 and 8 (3NF-1) Lesson 1,3,4,5,10 (3NF-3) Unit 3: Addition and subtraction (2) – lesson 3 and 5 (3NF-1) Unit 4: Multiplication and division (1) – lesson 3 and 4 (3NF-2) Unit 5: Multiplication and division (2) lesson 4-9 (3NF-2) lesson 10 and 11 (3MD-1) Textbook 3B Taught in Spring Unit 6: Multiplication and division (3) – lesson 7 (3NF-2) lesson 2 (3NF-3)	Textbook 4A Taught in Autumn Unit 3: Addition and subtraction – lesson 1 (4NF-3) Unit 5: Multiplication & Division (1) – lesson 12 (4MD-2) lessons 1-11 (4NF-1) Textbook 4B Taught in Spring Unit 6: Multiplication and division (2) – lesson 2 and 3 (4MD-1) Lessons 6 and 7 (4MD-3) Lessons 11-13 (4NF-2) Lesson 4 and 5 (4NF-3)	Textbook 5A Taught in Autumn Unit 4: Multiplication & Division (1) – lessons 8 and 9 (5MD-1) Lessons 1-4 (5MD-2) Lessons 3 and 4 (5NF-1) Textbook 5B Taught in Spring Unit 7: Multiplication and division (2) Lesson 1 (5MD-3) Lessons 6 and 7 – (5MD-4) Textbook 5C Taught in Summer Unit 12: Decimals – lessons 1-4 (5NF-2)	Textbook 6A Taught in Autumn Unit 2: Four operations (1) – lessons 4 and 5 (6AS/MD-1) Unit 3: Four operations (2) lessons 10 and 11 – (6AS/MD-1) Lesson 12 (6AS/MD-2) Textbook 6B Taught in Spring Unit 7: Ratio & Proportion Lessons 1,2,3,7,8,9 (6AS/MD-3)
Other resources to aid teaching	-Daily Fluent in 5 tasks -White Rose – Summer 1 -NCETM pages 17 & 18 https://www.ncetm.org.uk/media/qjpctp24/mastery_assessment_y1.pdf	-Daily Fluent in 5 tasks -White Rose – Spring 2 -NCETM pages 17-19 https://www.ncetm.org.uk/media/dnobtk14/mastery_assessment_yr2.pdf	-Daily Fluent in 5 tasks -White Rose – Autumn 3, Spring 1 -NCETM pages 16 – 18 https://www.ncetm.org.uk/media/oaqfcvjq/mastery_assessment_y3.pdf	-Daily Fluent in 5 tasks -White Rose – Autumn 4, Spring 1 -NCETM pages 15 – 17 https://www.ncetm.org.uk/media/x45na0cs/mastery_assessment_y4.pdf	-Daily Fluent in 5 tasks -White Rose – Autumn 3, Spring 1 -NCETM pages 14 – 16 https://www.ncetm.org.uk/media/lp0o2lgv/mastery_assessment_y5.pdf	-Daily Fluent in 5 tasks -White Rose – Autumn 2 -NCETM pages 15 – 17 https://www.ncetm.org.uk/media/uitj1x5g/mastery_assessment_y6.pdf

Links to further activities to aid teaching:

White Rose materials link: https://whiterosemaths.co m/resources?year=year-1-new

NCETM materials link: https://www.ncetm.org.uk/classroom-resources/exemplification-of-ready-to-progress-criteria/

NCETM activities link: https://www.ncetm.org.uk/classroom-resources/assessment-materials-primary/

NRICH - **PRIMARY CURRICULUM MAP FOR ALL TOPICS**

https://docs.google.com/spreadsheets/d/1bIrdv1M9pKzoKrHeyxT5rkHbJUIJJWjYug2k4Xe9_es/edit#gid=598691163

Key: Highlighted objectives above link to the topic of place value taught

Red = recall/use

Blue = calculations

Green = problems

Orange = addition, subtraction, multiplication and division combined