St Bridget's CE Primary Maths Progression Map

REFERENCING: NC14, NCETM PD MATERIALS, KS1/KS2 DFE TEST FRAMEWORK, MNP DFE/NCETM ACCREDITED TEXTBOOK

Specific NCETM PD Materials have been referenced but the whole spine for each area should be studied to ensure sequencing and progression of ideas

Please use the non statutory guidance (Ready to Progress materials) to support identifying key learning at each stage

Multiplication and Division

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
MULTIPLICATION AND DIVISION FACTS						
Explore and represent patterns within numbers up to 10. including evens and odds, double facts and how quantities can be distributed equally. **Counting forwards and backwards** **Counting things that can be touched, that cannot be seen, touched or moved.** **Children need the opportunity to count out or a number of things that belong to a larger group.** **Subitising : recognising how many things are in a group without having to count them one by one.** **Identify groups with the same number of things** **Spotting and continuing patterns and identifying the unit of repeat**	**Count in multiples of twos, fives and tens** NCETM PD MATERIALS LINK *2.1 Counting, unitising and coins* *MNP Chapter 12 link* *This is the first chapter on multiplication. Pupils will learn the foundations of equal groupings, repeated addition, arrays and doubling. By the end of the chapter, pupils will be able to apply that knowledge to solve word problems. Previous lessons using ten frames and visual linear organisation will prove useful in this chapter* **Chapter 12** **Lesson 1 Making equal groups** **Lesson 2 Adding equal groups**	**Count in steps of 2,3 and 5 from 0, and in tens from any number, forward or backward** *NCETM PD MATERIALS LINK* *Previous segments as detailed in year 1: 1.8 plus 1.14 addition and subtraction: two digit and multiples of ten* *2.2 Structures: multiplication representing equal groups* *2.3 Times tables: groups of 2 and commutativity (part 1)* *2.4 Times tables: groups of 10 and of 5, and factors of 0 and 1* *MNP Chapter 1 Link* *This chapter concentrates on various aspects of numbers to 100. Pupils will be able to count to 100 through different steps, including counting up in tens. Place value will have a major role throughout*	**Count from 0 in multiples of 4, 8, 50 and 100** *NCETM PD MATERIALS LINK* *2.7 Times tables: 2, 4 and 8, and the relationship between them* *2.8 Times tables: 3, 6 and 9, and the relationship between them* *MNP chapter 3 Link* *In this chapter, pupils will cover the multiplication and division of 3, 4 and 8. Pupils will then get to use their experience of multiplication and division to solve word problems* **Chapter 3** **Lesson 1 Multiplying by 3** **Lesson2 Multiplying by 3** **Lesson 3 Multiplying by 4** **Lesson 5 Multiplying by 4 and 8** **Lesson 7 Multiplying by 8** **Lesson 8 Dividing by 3**	**Count in multiples of 6,7,9,25 and 1000** *NCETM PD MATERIALS LINK:* *2.8 Times tables 3, 6,9* *2.9 Times tables : 7* *2.13 calculation: multiplying and dividing by 10 or 100* *2.7 Times tables: 2, 4 and 8, and the relationship between them* *2.8 Times tables: 3, 6 and 9, and the relationship between them* *2.9 Times tables: 7 and patterns within/across times tables* *MNP Chapter 1 Link* *In this chapter pupils will learn to count in multiples of 25, 100 and 1000 in order to count larger numbers comprehensively. They will learn about the*	**Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000** *NCETM PD MATERIALS LINK* 2.13 Calculation: multiplying and dividing by 10 or 100 2.19 calculation : decimals fractions by whole numbers MNP Chapter 1 Link *In this chapter, pupils will be looking at numbers and their place value to 1 000 000. The chapter begins reviewing how to read and write numbers to 100 000, quickly moving onto numbers to 1 000 000. Time is spent using concrete materials to represent numbers to 1 000 000, including number discs and place-value charts. Pupils then compare numbers to*	

	Lesson 3 making equal rows **Lesson 4 Making doubles**	*the chapter. Pupils will also look at comparing numbers using their place-value knowledge and they will go through number bonds. The final two chapters will allow pupils to explore numbers to see patterns within 100.* **Chapter 1** **Lesson 1 Counting to 100** **Lesson 5 Number patterns** **Lesson 6 Number patterns** *MNP Chapter 3 Link* *This chapter investigates the multiplication of 2, 5 and 10. Pupils will also have the opportunity to understand what multiplication means and what it looks like. Patterns in multiplication and commutative law are also covered in this chapter* **Chapter 3** **Lesson1 Multiplication as equal groups** **Lesson 2 2 Times Table** **Lesson 3 2 Times table** **Lesson 4 5 times tables** **Lesson 5 5 times table** **Lesson 6 10 times table** **Lesson 7 10 times table** **Lesson 8 Multiplying by 2, 5, 10** **lesson 9 Multiplying by 2, 5, 10**	**Lesson9 Dividing by 4** **Lesson10 Multiplying and dividing**	*relative size of numbers and complete number sequences within 10 000. s* *MNP Chapter 3 Link* *In this chapter, pupils will learn how to multiply and divide by 6, 7, 9, 11 and 12. They will begin to understand mathematical vocabulary such as 'quotient' in relation to division. They will learn how to calculate multiplication equations using the multiplication facts that they know. They will understand the difference between sharing and grouping and they will understand the commutative law in multiplication. They will also solve problems involving multiplication and division* **Chapter 1** **lesson 1 Counting in hundreds and twenty-fives** **Lesson 2 Counting in thousands** **lesson 3 Counting in thousands, hundreds, tens and ones** **lesson 10 Counting In six, sevens and and nines** **Chapter 3** **Lesson1 Multiplying by 6** **Lesson 2 Multiplying by 7** **lesson 3 Multiplying by 9** **lesson 4 Multiplying by 9** **Lesson 5 Multiplying by 11** **lesson 6 Multiplying by 11** **lesson 7 Multiplying by 12**	*1 000 000 using their knowledge of place value in addition to bar model supports to assist them. Pupils complete the unit by making number patterns and rounding numbers to the nearest 10, 1000, 10 000 and 100 000* **Chapter 1** **lesson 8 making numbers patterns** **lesson 9 making number patterns**	

		Recall and use multiplication and division facts for the 2,5, and 10 multiplication tables, including recognising odd and even numbers *NCETM PD Materials link* *2.2 Structures: multiplication representing equal groups* *2.3 Times tables: groups of 2 and commutativity (part 1)* *2.4 Times tables: groups of 10 and of 5, and factors of 0 and 1* *MNP Chapter 3 links as above and chapter 4* *This chapter focuses on both the multiplication and division of 2, 5 and 10. Pupils will look at different ways of sharing, including sharing and grouping before covering division by 2, 5 and 10. Pupils will also investigate links between multiplication and division and odd and even numbers* **Chapter 3** **Lesson1 Multiplication as equal groups** **Lesson 2 2 Times Table** **Lesson 3 2 Times table** **Lesson 4 5 times tables** **Lesson 5 5 times table** **Lesson 6 10 times table** **Lesson 7 10 times table** **Lesson 8 Multiplying by 2, 5, 10**	**Recall and use multiplication and division facts for the 3,4 and 8 multiplication tables** *NCETM PD Materials link* *2.7 Times tables: 2, 4 and 8, and the relationship between them* *2.8 Times tables: 3, 6 and 9, and the relationship between them* MNP chapter 3 links as above **Chapter 3** **Lesson 1 Multiplying by 3** **Lesson2 Multiplying by 3** **Lesson 3 Multiplying by 4** **Lesson 5 Multiplying by 4 and 8** **Lesson 7 Multiplying by 8** **Lesson 8 Dividing by 3** **Lesson9 Dividing by 4** **Lesson10 Multiplying and dividing**	**Recall multiplication and division facts for multiplication tables up to 12 x 12** *NCETM PD MATERIALS LINK* *2.10 Connecting multiplication and division, and the distributive law* *2.11 Times tables: 11 and 12* **MNP Chapter 3 link as above** **Chapter 3** **Lesson1 Multiplying by 6** **Lesson 2 Multiplying by 7** **lesson 3 Multiplying by 9** **lesson 4 Multiplying by 9** **Lesson 5 Multiplying by 11** **lesson 6 Multiplying by 11** **lesson 7 Multiplying by 12** **lesson 8 Dividing by 6** **lesson 9 Dividing by 7** **lesson 10 Dividing by 9** **Lesson 1 Multiplying and Dividing by 11 and 12**		

		lesson 9 Multiplying by 2, 5, 10 **Chapter 4** **Lesson 1 Grouping** **Lesson2 Sharing** **Lesson 3 Divide by 2** **Lesson 4 Dividing by 5** **Lesson 5 Dividing by 10** **Lesson 6 Multiplication and Division**				
MENTAL CALCULATION						
			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 NCETM PD Materials Link 2.14 Multiplication: partitioning leading to short multiplication MNP chapter 3 links as above and chapter 4 *This chapter covers multiplying by a 2-digit number. The first few lessons look at decomposing a number into tens and ones so that the multiplication is easily managed and pupils can see the concept using Base 10 blocks. Lessons move onto multiplying where*	**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** *NCETM PD Materials link 2.10 and 2.11 as above* *MNP Chapter 4 link* *In this chapter, pupils will further develop their understanding of multiplication and division. They will learn how to divide and multiply by 1 and 0 and understand the law of commutativity. They will learn how to multiply three numbers together using prior knowledge of multiplication tables. Pupils will use their tables and knowledge of place value to multiply multiples of 10, leading to the*	**Multiply and divide numbers mentally drawing upon known facts** *NCETM PD MATERIALS LINK* *2.18 Using equivalence to calculate* *MNP chapter 3 link* *In this unit, pupils are multiplying and dividing 3- and 4-digit numbers by single- and double-digit numbers. The unit begins by finding and defining multiples and factors and common factors. Pupils begin to work with prime numbers and determine what makes a number prime or composite. After this, they work with square and cube numbers before*	**Perform mental calculations, including with mixed operations and large numbers** *MNP Chapter 2 link* *In this unit, pupils will be exploring the four operations, in combination and in isolation. The unit begins with lessons on creating and solving expressions involving brackets, exponents, multiplication, division, addition and subtraction. Pupils are then multiplying 3- and 4-digit numbers by 2-digit numbers using number bonds and column multiplication as the key methods. After this, they are estimating the product of multiplication sentences*

			regrouping is necessary before pupils start to look at division. Decomposing numbers is critical in making both multiplication and division manageable for pupils and this is practised throughout the chapter. Once pupils master multiplication and division, they focus on solving problems using the multiplication and division methods dealt with in previous lessons. **Chapter 3** **Lesson 1 Multiplying by 3** **Lesson2 Multiplying by 3** **Lesson 3 Multiplying by 4** **Lesson 5 Multiplying by 4 and 8** **Lesson 7 Multiplying by 8** **Lesson 8 Dividing by 3** **Lesson9 Dividing by 4** **Lesson10 Multiplying and dividing** **Chapter 4** **Lesson 1 Multiplying 2 digit numbers** **Lesson 2 Multiplying 2 digit numbers** **lesson 3 Multiplying 2 digit numbers** **Lesson 4 Multiplying with regrouping** **Lesson 5 Multiplying with regrouping** **Lesson 6 Simple Dividing** **Lesson 7 Dividing with regrouping** **Lesson 8 Dividing with regrouping**	*multiplication of 2-digit numbers using short multiplication. They will use their knowledge of multiplying multiples of 10 when multiplying multiples of 100, leading to multiplying 3-digit numbers using short multiplication.* *Pupils will learn more about division and will divide 2-digit numbers using two methods, including numbers with remainders. They will learn to solve multiplication and division problems using the methods they have learned and will use bar models to visualise what the problem is asking them to do* *MNP Chapter 8 lin* *In this chapter, pupils will learn about tenths and hundredths. They will learn how to count, order and record the decimals in different ways. They will begin to see equivalence between tenths and hundredths and will be able to compare and order the numbers. Pupils will learn to continue linear number sequences as well as round decimals to the nearest whole number. They will also link tenths and hundredths with dividing by 10 and 100* **Chapter 4** **Lesson1 Multiplying by 0 and 1** **Lesson 2 Dividing by 1**	*moving on to multiplying by 10, 100 and 1000. When multiplying, pupils are encouraged to use a variety of methods, including: number bonds, column methods and the grid method. Number bonds are used to represent multiplicative word problems. Pupils then move on to multiply by 2-digit numbers before beginning to divide by 10, 100 and 1000. The unit ends as pupils learn to divide, giving rise to remainders using multiple methods, including number bonds and long and short division* **Chapter 3** **Lesson 1 Finding multiples** **lesson 2 Finding factors** **Lesson 3 Finding common factors** **Lesson 4 Finding prime numbers** **lesson 5 Finding prime numbers** **Lesson 6 Finding square and cuv=be numbers** **Lesson 7 Multiplying by 10, 100, 1000**	*before moving on to division. Pupils are dividing 3- and 4-digit numbers by 2-digit numbers using a variety of methods, including number bonds and long division. Pupils then begin solving more complex word problems involving multiple operations, including multiplication and division, with bar models being a main heuristic in addition to other pictorial methods. Pupils are then challenged by finding common multiples and common factors before ending the unit exploring prime numbers.* **Chapter 2** **Lesson 1 using mixed operations** **lesson 2 using mixed operations**

				lesson 3 Multiplying the same two numbers **lesson 4 Multiplying three numbers** **Lesson 5 Multiplying by multiples of 10** **Chapter 8** **Lesson 16 dividing whole numbers by 10** **Lesson 17 Dividing whole numbers by 100**		
		Show that multiplication of two numbers can be done in any order (commutative) and division of one number cannot *NCETM PD MATERIALS Link* 2.5 Commutativity (part 2), doubling and halving 2.6 Structures: quotitive and partitive division **MNP Chapter 3 and 4 link as above** **Chapter 3** **Lesson1 Multiplication as equal groups** **Lesson 2 2 Times Table** **Lesson 3 2 Times table** **Lesson 4 5 times tables** **Lesson 5 5 times table** **Lesson 6 10 times table** **Lesson 7 10 times table** **Lesson 8 Multiplying by 2, 5, 10** **lesson 9 Multiplying by 2, 5, 10**		**Recognise and use factor pairs and commutativity in mental calculations** NCETM PD Materials Link *2.9 as above* MNP Chapter 3 link as above **Chapter 3** **Lesson1 Multiplying by 6** **Lesson 2 Multiplying by 7** **lesson 3 Multiplying by 9** **lesson 4 Multiplying by 9** **Lesson 5 Multiplying by 11** **lesson 6 Multiplying by 11** **lesson 7 Multiplying by 12** **lesson 8 Dividing by 6** **lesson 9 Dividing by 7** **lesson 10 Dividing by 9** **Lesson 1 Multiplying and Dividing by 11 and 12**	**Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000** *NCETM PD MATERIALS link* 2.13 Calculation: multiplying and dividing by 10 or 100 MNP Chapter 3 and 4 link as above **Chapter 3** **Lesson 7 Multiplying by 10, 100, 1000** **Chapter 4** **Lesson 16 Dividing by 10, 100, 1000**	**Associate a fraction with division and calculate decimals fraction equivalents for a simple fraction** *MNP Chapter 4 link* *Pupils will read, write decimals using base 10.* *Pupils will be asked to write fractions as decimals using division and pictorial methods.* **Chapter 4** **Lesson 4 Writing fractions and decimals** **lesson 5 Writing fractions as decimals**
WRITTEN CALCULATION						
		Calculate mathematical statements for	**Write and calculate mathematical statements**	**Multiply two-digit and three -digit numbers by a**	**Multiply numbers up to 4 digits by a one-digit**	**Multiply multi-digit numbers up to 4 digits by**

		multiplication and division within the multiplication tables and write them using the multiplication and division and equals signs *NCETM PD MATERIALS Link 2.2-2.6 as above* MNP Chapter 3 and 4 link as above **Chapter 3** **Lesson1 Multiplication as equal groups** **Lesson 2 2 Times Table** **Lesson 3 2 Times table** **Lesson 4 5 times tables** **Lesson 5 5 times table** **Lesson 6 10 times table** **Lesson 7 10 times table** **Lesson 8 Multiplying by 2, 5, 10** **lesson 9 Multiplying by 2, 5, 10** **Chapter 4** **Lesson 1 Grouping** **Lesson2 Sharing** **Lesson 3 Divide by 2** **Lesson 4 Dividing by 5** **Lesson 5 Dividing by 10** **Lesson 6 Multiplication and Division**	**for multiplication and division using the multiplication tables that they know** ***NCETM PD MATERIALS Link 2.14 and*** *2.12 Division with remainders* *2.13 Calculation: multiplying and dividing by 10 or 100* **MNP Chapter 3 and 4 link as above** **Chapter 3** **Lesson 1 Multiplying by 3** **Lesson2 Multiplying by 3** **Lesson 3 Multiplying by 4** **Lesson 5 Multiplying by 4 and 8** **Lesson 7 Multiplying by 8** **Lesson 8 Dividing by 3** **Lesson9 Dividing by 4** **Lesson10 Multiplying and dividing** **Chapter 4** **Lesson 1 Multiplying 2 digit numbers** **Lesson 2 Multiplying 2 digit numbers** **lesson 3 Multiplying 2 digit numbers** **Lesson 4 Multiplying with regrouping** **Lesson 5 Multiplying with regrouping** **Lesson 6 Simple Dividing** **Lesson 7 Dividing with regrouping** **Lesson 8 Dividing with regrouping**	**one- digit number using formal written layout** NCETM PD Materials Link *2.13 Calculation: multiplying and dividing by 10 or 100* *2.14 Multiplication: partitioning leading to short multiplication* MNP Chapter 4 link as above **Lesson 6 Multiplying 2 digit numbers** **lesson 7 Multiplying 2 digit numbers** **Lesson 8 Multiplying multiples of 100** **Lesson 9 Multiplying 3 digit numbers** **Lesson 10 Multiplying 3 digit numbers** **Lesson 11 Multiplying 3 digit numbers**	**number using a formal written method, including long multiplication for two-digit numbers** *NCETM PD MATERIALS LINK* *2.23 Multiplication strategies for larger numbers and long multiplication* MNP Chapter 3 link as above **Chapter 3** **Lesson 8 8 Multiplying 2 digit and 3 digit numbers by a single digit** **Lesson 9 Multiplying 4 digit numbers** **Lesson 10 Multiplying 4 digit numbers** **lesson 11 Multiplying 4 digit numbers** **Lesson 12 Multiplying a 2 digit number by a 2 digit numbers** **Lesson 13 Multiplying a 2 digit number by a 2 digit number** **Lesson 14 Multiplying a 3 digit number by a 2 digit numbers** **lesson 15 Multiplying a 3 digit number by a 2 digit number**	**a two-digit whole number using the formal written method of long multiplication** MNP Chapter 2 link as above *NCETM PD MATERIALS LINK* *2.23 Multiplication strategies for larger numbers and long multiplication* **Chapter 2** **lesson 3 Multiplying by 2 digit numbers** **lesson 4 Multiplying by 2 digit numbers** **lesson 5 Multiplying by 2 digit numbers** **Lesson 6 Multiplying by 2 digit numbers** **lesson 7 Multiplying by 2 digit numbers** **lesson 8 estimating the product of large numbers**

				Chapter 4 **Lesson 12 Dividing 2 digit numbers** **Lesson 13 Dividing 3 digit numbers** **Lesson 14 Dividing 2 digit numbers** **Lesson 15 Dividing 3 digit numbers** **Lesson 16 Dividing 3 digit numbers**	**Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context** MNP Chapter 3 link as above chapter 3 **Lesson 17 Dividing 3 digit and 4 digit numbers** **Lesson 18 dividing 4 digit numbers** **Lesson 19 dividing with remainder**	**Divide numbers up to 4-digits by a two-digit whole number using the formal written method of short division where appropriate for the context** **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** *NCETM PD MATERIALS LINK* 2.24 Division: dividing by two-digit divisors MNP Chapter 2 link as above **Chapter 2** **lesson 9 Dividing by 2 digit numbers** **lesson 10 Dividing by 2 digit numbers** **Lesson 11 Dividing by 2 digit numbers** **Lesson 12 dividing by 2 digit numbers** **Lesson 13 dividing by 2 digit numbers**
						Use written division methods in cases where the answer has up to two decimal places *NCETM PD MATERIALS LINK*

						2.29 Decimal place-value knowledge, multiplication and division *Chapter 2 link as above* *MNP Chapter 4 link* *In this chapter, pupils will be working with decimals. To begin with, pupils will read and write decimals using Base 10 materials before moving on to dividing and multiplying decimals by 1-digit numbers with no regrouping or renaming. Pupils will then be asked to write fractions as decimals using division and pictorial methods before looking at multiplying fractions which involve some regrouping and renaming by 1-digit numbers. Pupils will look at dividing decimals again, this time when regrouping and renaming with 1-digit numbers is required. They then move on to multiplying and dividing decimals by 2-digit numbers, which involves regrouping and renaming, using a variety of methods and strategies, including: number bonds, the worded method (writing down a problem in words and numbers), long division and the column method.* **Chapter 2** **lesson 9 Dividing by 2 digit numbers** **lesson 10 Dividing by 2 digit numbers** **Lesson 11 Dividing by 2 digit numbers**

						Lesson 12 dividing by 2 digit numbers **Lesson 13 dividing by 2 digit numbers** **Chapter 4** **lesson 10 Dividing decimals** **lesson 11 Dividing decimals** **lesson13 Dividing a decimals by a 2 digit whole number** **lesson 14 dividing a decimals by a 2 digit whole number**
PROPERTIES OF NUMBERS: MULTIPLES, FACTORS, PRIMES, SQUARE AND CUBE NUMBERS						
Explore and represent patterns within numbers up to 10. including evens and odds, double facts and how quantities can be distributed equally.		**Chapter 4** **Lesson 8 Odd and even numbers**		**Recognise and use factor pairs and commutativity in mental calculations** *NCETM PD MATERIALS LINK 2.9 and 2.10 above* MNP Chapter 3 link as above **Chapter 3** **Lesson1 Multiplying by 6** **Lesson 2 Multiplying by 7** **lesson 3 Multiplying by 9** **lesson 4 Multiplying by 9** **Lesson 5 Multiplying by 11** **lesson 6 Multiplying by 11** **lesson 7 Multiplying by 12** **lesson 8 Dividing by 6** **lesson 9 Dividing by 7** **lesson 10 Dividing by 9** **Lesson 1 Multiplying and Dividing by 11 and 12**	**Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers** **NCETM MATERIALS LINK** *NCETM PD Materials Link* 2.21 Factors, multiples, prime numbers and composite numbers MNP Chapter 3 link as above **Chapter 3** **Lesson 1 Finding multiples** **lesson 2 Finding factors** **Lesson 3 Finding common factors** **Lesson 4 Finding prime numbers** **lesson 5 Finding prime numbers** **Lesson 6 Finding square and cube numbers** **Lesson 7 Multiplying by 10, 100, 1000**	**Identify common factors, common multiples and prime numbers** *NCETM PD Materials Link* 2.21 Factors, multiples, prime numbers and composite numbers *MNP Chapter 2 Link* **Lesson 17 Finding common multiples** **Lesson 18 Finding common multiples** **Lesson 19 Finding common factors** **Lesson 20 finding common factors** **Lesson 20 finding common factors** **lesson 21 Finding prime numbers** **Lesson 22 finding prime numbers**

					Know and use the vocabulary of prime numbers prime factors and composite (non prime numbers *NCETM PD Materials Link* **2.21 as above** MNP Chapter 3 link as above **Lesson 4 Finding prime numbers** **lesson 5 Finding prime numbers**	**Use common factors to simplify fractions; use common multiples to express fractions in the same denomination** ***MNP Chapter 3 link*** *This is a chapter on adding, subtracting, multiplying and dividing fractions. The chapter begins with pupils simplifying fractions and moves on to comparing and ordering fractions. Pupils are working with basic fractions and mixed numbers. They then begin to add and subtract fractions with different denominators, including mixed numbers. Bar model diagrams are incorporated to support pupils' understanding before moving on to multiplication and division. Pupils will be required to divide fractions by whole numbers and will explore different methods* **Lesson 1 Simplifying fractions** **Lesson 2 Simplifying fractions** **Lesson 3 Comparing and ordering fractions** **lesson 4 comparing and ordering fractions** **lesson 5 Comparing and ordering fractions**
					Establish whether a number up to 100 is prime and recall prime numbers up to 19 *NCETM PD Materials Link*	

					2.21 as above MNP Chapter 3 link as above **Lesson 4 Finding prime numbers** **lesson 5 Finding prime numbers**	
					Recognise and use square numbers and cube numbers, and the notation for squared and cubed *NCETM PD Materials Link* **2.21** MNP Chapter 3 link as above **Lesson 6 Finding square and cube numbers**	**Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed and cubic metres and extending to other units such as mm cubed and km cubed** *NCETM PD Materials Link 2.30 Multiplicative contexts: area and perimeter 2* *MNP chapter 5 link* *In this chapter, the focus is on converting units of measurement using fractions and decimals. Pupils begin by converting units of length and distance followed by exploring units of mass, volume and time. While most of the chapter considers metric conversions, time is challenging as it does not follow multiples of 10, 100 or 1000* *MNP chapter 11 link* *In this chapter, pupils will be developing their understanding of volume*

						as it relates to cubes and cuboids. At the beginning of the chapter, they are working with concrete materials to expose the meaning of volume thoroughly. As the chapter progresses, pupils are determining the formula for the volume of cubes and cuboids, estimating volumes and calculating total volumes with a formula. By the end of the chapter, pupils are solving multi-step word problems related to volume, using division and multiplication **Chapter 5** **Lesson 5 Converting units of volume** **Chapter 11** **Lesson 1 Finding the volume of cubes and cuboids** **Lesson 2 Finding the volume of cubes and cuboids** **Lesson 3 Finding the volume of cubes and cuboids** **Lesson 4 Finding the volume of cubes and cuboids**
PROBLEM SOLVING						
	Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations	**Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division**	**Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems**	**Solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one-digit, integer scaling problems**	**Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes**	**Solve problems involving addition, subtraction, multiplication and division** *NCETM PD Materials Link*

	and arrays with the support of the teacher **MNP Chapter 12 as above** **Lesson 5 Solving word problems**	**facts, including problems in contexts** NCETM PD MATERIALS 2.2 -2.6 as above **MNP Chapter 3 and 4 link as above** **Chapter 3** **Lesson 10 Solving word problems** **Chapter 4** **Lesson 7 Solving word problems** **Chapter 4** **Lesson 7 Solving word problems**	**in which n objects are connected to m objects** **MNP Chapter 3 and 4 link as above** **Chapter 3** **Lesson12 Solving word problems** **Lesson 13 Solving word problems** **Lesson 14 Solving word problems** **lesson 15 Solving word problems** **Chapter 4** **Lesson 9 Solving word problems** **Lesson 10 Solving word problems** **Lesson 1 Solving word problems**	**and harder correspondence problems such as n objects are connected to m objects** *NCETM PD MATERIALS LINK* *2.16 Multiplicative contexts: area and perimeter 1* *2.17 Structures: using measures and comparison to understand scaling* MNP Chapter 3 and 4 link as above **Chapter 3** **lesson 13 Solving word problems** **lesson 14 Solving word problems** **Lesson 15 Solving word problems** **chapter 4** **Lesson 17 Solving word problems** **Lesson 18 Solving word problems**	*NCETM PD Materials Link* 2.20 Multiplication with three factors and volume MNP Chapter 4 link as above Chapter 4 **lesson 1 Solving word problems** **lesson 2 Solving word problems** **lesson 3 Solving word problems** **lesson 4 solving word problems**	*2.30 as before and* *2.26 Mean average and equal shares* *2.28 Combining division with addition and subtraction* *MNP Chapter 2 link plus word problems sections from each chapter*
					Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign **NCETM PD MATERIALS LINK** NCETM PD Materials Link	

					2.22 Combining multiplication with addition and subtraction MNP Chapter 3 and 4 link as above	
					Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates NCETM PD Materials Link *2.18 Using equivalence to calculate* *2.19 Calculation: ×/÷ decimal fractions by whole numbers* 2.25 Using compensation to calculate *MNP Chapter 3 and 4 link as above and* *Chapter 6 link* *This chapter develops pupils' ability to handle more diverse problems involving fractions, including dividing and multiplying fractions by whole numbers. To begin the chapter, pupils divide whole numbers by whole numbers, giving rise to fractions. Pupils then show improper fractions and mixed numbers using pictures. As they progress through the unit, they find equivalent fractions, compare and order fractions and utilise the number bond strategy,*	**Solve problems involving similar shapes where the scale factor is known or can be found** NCETM PD Materials Link *2.30 as before and* *2.25 Using compensation to calculate* ***MNP Chapter 8 link plus geometry and position and movement chapters*** *In this chapter, pupils will be comparing quantities, including numbers, objects, fractions and mass before moving on to solving word problems. In the first six lessons, pupils will use bar models and concrete materials to compare amounts. They will be using both pictorial and abstract multiplication and division to support their learning while simplifying and comparing ratios. In the final three lessons, pupils will be solving word problems involving ratio by constructing bar models to support their understand*ing Chapter 8 **Lesson 2 Comparing quantities**

					known as number pairs, in their work with fractions. Next, pupils review adding fractions, with a focus on fractions with different denominators and fractions that create improper fractions and mixed numbers. Then they subtract fractions that are different, finding common denominators and subtracting mixed numbers and improper fractions. At the end of the chapter, pupils begin to multiply fractions by whole numbers and multiply mixed numbers by whole numbers. The final lesson involves solving word problems that require multiple steps and bar model representations.	**lesson 3 Comparing quantities** **lesson 4 Comparing quantities** **lesson 5 Comparing quantities** **Lesson 6 Comparing quantities** **Chapter 12** **Lesson10 Drawing triangles** **Chapter 13** **lesson 2 describing position**
ORDER OF OPERATIONS						
						Use their knowledge of the order of operations to carry out calculations involving the four operations NCETM PD Materials Link 2.28 as before MNP Chapter 2 link as above **Lesson 1 using mixed operations** **lesson 2 using mixed operations**
INVERSE OPERATIONS, ESTIMATING AND CHECKING ANSWERS						

			Estimate the answer to a calculation and use inverse operations to check answers	**Estimate and use inverse operations to check answers to a calculation**		**Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy**
Concrete Resources/ Manipulatives : Identifying and Representing						
Objects for counting *Linking cubes* *Paper plates* *Ten frames* *Counters* *Giant ten frames* *beads*	*Objects for counting* *Linking cubes (30 between 2)* *Paper plates* *Counters (20 between 2)* *Ten frames* *Six sided dice*	*Objects for counting* *Linking cubes (30 between 2)* *Paper plates* *Counters (20 between 2)* *Ten frames* *Base ten* *Dot cards*	*Objects for counting* *Linking cubes (30 between 2)* *Paper plates* *Counters (20 between 2)* *Base ten* *Dot cards*	*Linking cubes (30 between 2)* *Counters (20 between 2)* *Base ten* *Dot cards* *Place value counters and charts*	*Linking cubes* *Place value counters and charts*	*Linking cubes* *Place value counters and charts*