Coast Academies Maths Framework Step 6
Number

	Objective	Almost	Meeting	Exceeding
1	N1 KPI Calculate intervals across zero	Pupil can work out the difference between ?8 and zero.	Pupil can work out the difference between 4 and 5?	Pupil can work out the connection between finding the difference between negative numbers and subtracting them.
2	N2 Consolidate counting forwards or backwards in steps of powers of 10 for any given number to 1 000 000	Pupil can count backwards from 374,920 in steps of 10,000.	Pupil can count backwards from 902,401 in steps of 100,000, 10,000, 1000, 100 and 10.	Pupil can reduce any number to zero by subtracting the appropriate number of each of the appropriate powers of 10.
3	N3 Consolidate counting in multiples of 2, through to 10, 25 and 50	Pupil can count up in 6s, 9s and 12s using their knowledge of counting up in 3s, and in 12s using their knowledge of counting up in 4s and 6s	Pupil can decide whether a number is a multiple of any number by counting up in multiples of that number, developing more efficient strategies than enumerating	Pupil can identify whether numbers are in more than one of the sequences with which they are familiar, developing efficient strategies for deciding.
4	N4 Read and write numbers to 10 000 000 and determine the value of digits	Pupil can read and write numbers to ten million that are multiples of 100.	Pupil can form a number with up to seven digit cards and write it in words.	Pupil can relate megabytes, gigabytes and terabytes and express each in terms of the others.
5	N5 Consolidate reading Roman numerals to 1000 (M) and recognising years written in Roman numerals	Pupil can write the numbers from 1 to 20 using Roman numerals, and write the year 2100 using Roman numerals.	Pupil can write the date using Roman numerals and identify the year a film was made.	Pupil can explain why calculation with large numbers is difficult with Roman numerals and how our place

	N6 KPI Use negative numbers in context	Pupil can answer questions such as 'How much colder is ?5°C than 10°C?	Pupil can answer questions such as 'How much warmer is ?2°C than ?10°C?'	Pupil can solve problems such as ordering the changes in temperature between day and night on the planets in the
	N7 Order and compare numbers up to 10 000 000	Pupil can choose the smaller number out of 800,000 and 8,000,000.	Pupil can place the correct sign (=, < and >) in statements such as between 8,282,828 and 28,282,828.	Pupil can solve problems involving ordering the distances in light years to stars and galaxies.
6	N8 Solve number problems and practical problems with number and place value from the Year 6 curriculum	Pupil can solve problems such as 'The temperature is zero at 10 a.m. It drops to ?4°C by 5 p.m. How much has it dropped?'	Pupil can solve problems such as 'The temperature at sunrise is ?5°C and rises to 8°C by midday. How much has it risen?	Pupil can solve problems such as 'What is 10,000 less than 236.7?'
7	N9 KPI Round whole numbers to 10 000 000 to a required degree of accuracy	Pupil can round 68 to the nearest 20.	Pupil can round 8,438 to the nearest 50.	Pupil can identify a number over 1000 that rounds to the same number when rounded to the nearest 20 and nearest 50.
8	N10 Use knowledge of the order of operations	Pupil can correctly calculate 7 + 2 x 3 as 13.	Pupil can correctly calculate 3 ? 5 x 8 + 1 as ?36, and 3 x (5 + 7) as 36	Pupil can correctly calculate any expression involving brackets and a mixture of the four operations. They solve problems such as 'Insert signs to make the calculation correct: (3 ? 7) ? 6 = 100 ? 5 ? 17'.

9	N11 Consolidate their understanding of the equals sign as representing equivalence between two expressions	Pupil can interpret instances of the equals sign such as 4 + 8 x 2 = 10 + 10.	Pupil can deal with a variety of instances of the equals sign including 30 ? ? = 12 + 3 x 5	Pupil can solve problems such as 3 + 5 x ? = 5 x 10 ? 3 x 4.
10	N12 Consolidate understanding of the structure of numbers	Pupil can apply their understanding of multiples to learning the multiplication table facts.	Pupil can apply their understanding of factors to simplifying fractions, for example.	Pupil can apply their understanding of factors and primes to a variety of problems.
11	N13 Consolidate knowledge of types of number	Pupil can identify factors and multiples of familiar numbers.	Pupil can identify factors and multiples of numbers up to 50 and prime numbers up to 20.	Pupil can identify factors and multiples of many numbers and prime numbers beyond 20.

12	N14 Perform mental calculations, including with mixed operations and large numbers	Pupil can work out 10 x 6 ? 3 x 4 mentally.	Pupil can work out 12 x 70 + 3 x 20 mentally.	Pupil can solve problems such as 'Using the numbers 6, 3, 5, 9, 25 and 100 once each, use any of the four operations to make the target number of 673'.
13	N15 Consolidate knowledge of addition facts and the related subtraction facts, deriving further related facts as required	Pupil can write several calculations derived from 105 + 60 = 165	Pupil can write a variety of calculations derived from 105 + 632 = 737.	Pupil can write a variety of calculations derived from 105 + 632 = 737 and generalise to describe further calculations.
14	N16 Identify common factors, common multiples and prime numbers greater than 100	Pupil can decide, given 30 and 45, what their common factors and multiples are, with prompts. The pupil can identify prime numbers below 30. They do this using recall, mental calculation and jottings	Pupil can decide, given 35 and 80, what their common factors and multiples are. The pupil can decide whether 133 is a prime number. They do this using recall, mental calculation and jottings	Pupil can identify, given 35 and 80, the highest common factor and the least common multiple without listing all of the common factors and common multiples. They do this using recall, mental calculation and jottings.

20	N17 Consolidate multiplying and dividing whole numbers and decimals by 10, 100 and 1000	Pupil can work out 2.1 x 10 = 21 and 56 ÷ 10 = 5.6, applying this in the context of measurement.	Pupil can work out 2.3 x 1000 = 2300 and 98 ÷ 1000 = 0.098, applying this in the context of metric measures.	Pupil can calculate 0.012 x 600 = 7.2, applying this in a variety of contexts including measures.
21	N18 KPI Solve multi-step addition and subtraction problems in less familiar contexts, deciding which operations and methods to use and why	Pupil can solve problems such as 'I buy a shirt for $15 and a pair of jeans for $26 and 50 cents. How much change do I get from $50?	Pupil can solve problems such as 'Jim puts down a deposit of £25 when he hires a rotavator. He pays £12 for the first day and £8.50 for subsequent days. He damages the rotavator on a large stone and loses £12 of his deposit. He hires the rotavator for two days, what does he pay?'	Pupil can devise a toolkit for solving multi-step addition and subtraction problems and show how it works on a variety of problems.
22	N19 Consolidate solving problems using more than one of the four operations	Pupil can solve problems such as 'Jack buys a bottle of water at £1.20 and a banana at 20p and pays with a £5 note. What change does he get?	Pupil can solve problems such as 'Jack buys seven bottles of water and a pizza for £3.50 and gets 20p change when he pays with a £10 note. How much is each bottle of water?	Pupil canThe pupil can make up problems involving several steps and prompting different calculation strategies such as 'Use the numbers 5, 4, 6, 7, 25 and 75 once each and any combination of the four operations to make the number 612'

23	N20 Solve multi-step calculation problems involving combinations of all four operations	Pupil can solve problems such as 'Zoe has £5. She buys three pints of milk at 59p each. She wants to buy some tins of soup which cost 85p each. How many can she afford?', using a strategy which avoids division for example.	Pupil can solve problems such as 'A fence is 2.4 m long. It consists of three panels and the posts are 12 cm wide. How wide is each panel?	Pupil can solve problems such as 'Use some or all of the numbers 1, 2, 3 and 4, no more than once each, and any combination of the four operations to make as many as possible of the numbers 1 to 50'.
24	N21 Consolidate solving calculation problems involving scaling by simple fractions and simple rates	Pupil can solve problems such as 'One packet of biscuits weighs 200 g. How much does 1/4 of a packet weigh?'	Pupil can solve problems such as 'One packet of biscuits weighs 200 g. How much does 4/5 of a packet weigh?'	Pupil can make up problems such as 'One packet of biscuits weighs 200 g. How much does 3/8 of a packet weigh?'
25	N22 Consolidate knowledge of multiples and factors, including all factor pairs of a number, and common factors of two numbers	Pupil can list the factors of numbers below 20 and arrange them in pairs that multiply to give 24. The pupil can also list multiples of numbers in the multiplication tables.	Pupil can identify multiples or factors of a number from a set of numbers below 80 and list the factors of 50 as 1, 50; 2, 25; 5, 10. The pupil recognises that 8 is a common factor of 40 and 64.	Pupil can solve problems involving factors and multiples such as 'Numbers are co-prime if they have no factors in common. Find all of the numbers below 50 that are co-prime with 36. What do you notice? Can you explain this?'

26	N23 Consolidate recall of square numbers and cube numbers and the notation for them	Pupil can list the first ten square numbers and interpret 8² as 8 x 8 = 64.	Pupil can identify whether a given number is a square number or cube number up to 200, interpret 6² as 6 x 6 = 36 and 2³ = 2 x 2 x 2 = 8.	Pupil can sort the numbers below 500 into a Venn diagram with two sets: square numbers and cube numbers. The pupil can also interpret 3⁴ as 3 x 3 x 3 x 3 = 81 and extend the idea to higher powers.
27	N24 Consolidate recall of prime numbers up to 19	Pupil can identify the prime numbers below 12.	Pupil can correctly and promptly list the prime numbers up to 19.	Pupil can apply their knowledge of the prime numbers below 20 to quickly test numbers up to 400 to ascertain whether they are prime.

28	N25 Consolidate adding and subtracting whole numbers with more than 4 digits, including using formal written columnar addition and subtraction	Pupil can calculate 8238 + 3261 and 8237 ? 3265 using formal columnar methods, with some prompting.	Pupil can calculate 187,234 + 321,465 and 807,234 ? 372,465 using formal columnar methods.	Pupil can calculate 987,234 + 132,465 and 867,234 ? 352,465 using formal columnar methods, describing why each step in the algorithm is used.
29	N26 KPI Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication	Pupil can calculate 417 x 15 using the formal method of long multiplication, with jottings to support the process	Pupil can calculate 2187 x 34 using the formal method of long multiplication	Pupil can calculate 267,914 x 73 using the formal method of long multiplication.

29	N27 KPI Divide numbers up to 4 digits by a two-digit whole number using the formal methods of short or long division, and interpret remainders as appropriate for the context as whole numbers, fractions or by rounding	Pupil can calculate 364 ÷ 13 using the formal method of long division, with supporting jottings for the layout.	Pupil can calculate 3612 ÷ 42 using the formal method of long division.	Pupil can calculate 57,324 ÷ 68 using the formal method of long division.
30	N28 KPI Check answers to calculations with mixed operations and large numbers, choosing the most appropriate method, including estimation, and determining, in the context of a problem, an appropriate degree of accuracy	Pupil can choose an appropriate level of accuracy for the answer to a problem such as '£10 is shared equally between three people. How much do they get each?': 10 ÷ 3 = 3.333 … by rounding it to £3.33.	Pupil can check the answer to any calculation using an appropriate method, choosing to round it if appropriate, e.g. 'I buy 1.5 m of gold trimming for 14 decorations. How much do I need for each?': 1.5 ÷ 14 = 0.10714 m, so the answer is rounded to 10 cm	Pupil can check the answer to any calculation using an appropriate method, choosing to round it if appropriate, e.g. 'I buy 1.5 m of gold trimming for 14 decorations. How much do I need for each?': 1.5 ÷ 14 = 0.10714 m, so the answer is rounded to 10 cm, justifying
	N29 Check answers to calculations with all four operations involving any numbers by rounding	Pupil can check the answer to 8.9 x 1.9 by rounding and working out 9 x 2 = 18.	Pupil can check the answer to 8.9 ÷ 1.9 + 0.49 by rounding and working out 9 ÷ 2 + 0.5 = 5.	Pupil can check the answer to 8.9 ÷ 1.9 + 0.49 x 3.4 by rounding and working out 9 ÷ 2 + 0.5 x 3 = 6, deploying the correct order for the operations.

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N30 Associate a fraction with division	Pupil can recognise that 1/7 can be interpreted as 1 ÷ 7 and that 1 ÷ 5 can be interpreted as one-fifth.	Pupil can recognise that three-fifths can also be interpreted as 3 ÷ 5 and that 7 ÷ 5 can be interpreted as seven-fifths or one and two-fifths.	Pupil can choose whether to interpret 3/7 as three-sevenths or 3 ÷ 7 depending on the context, justifying their choice.
N31 Consolidate understanding of equivalent fractions by extending to improper fractions	Pupil can recognise that 3/2 and 6/4 are equivalent.	Pupil can recognise that 7/5 and 14/10 are equivalent.	Pupil can recognise that 1 2/8 is equivalent to 1 1/4.
N32 Identify the value of each digit in numbers given to three decimal places	Pupil can identify the 7 in 5.78 as meaning seven-tenths.	Pupil can identify the 7 in 9.587 as meaning seven-thousandths.	Pupil can identify the 7 in 6.578 as meaning seven-hundredths or 70-thousandths.

N33 Multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places	Pupil can calculate 5 x 10 = 50 and 34 x 100 = 3400 and, with prompting, work out 7 ÷ 10 = 0.7	Pupil can calculate 23 ÷ 100 = 0.23, and 306 ÷ 1000 = 0.306.	Pupil can extend their understanding of multiplying and dividing whole numbers by 10, 100 and 1000 to calculating 5.8 ÷ 100 = 0.058 and 4.402 x 100 = 440.2.
N34 Consolidate recognition of the per cent symbol and understanding that per cent relates to "number of parts per hundred"	Pupil can identify 20% as meaning 20 parts out of 100.	Pupil can relate their knowledge of hundredths to percentages. They know that 1%, one hundredth, 0.01 and 1/100 all represent the same amount and that is one in every hundred.	Pupil can readily recognise percentages as hundredths and apply this to solving problems.
N35 Use common factors to simplify fractions	Pupil can identify that the numerator and denominator of 4/8 can both be halved and then do so. With prompting, the pupil can then repeat the process to obtain 1/2.	Pupil can identify that four is a common factor for the numerator and denominator of 8/12 and divide by it to get 2/3.	Pupil can identify the common factors for the numerator and denominator of a fraction, realising that the highest common factor is needed to reach the simplest form in one step.

N36 Use common multiples to express fractions in the same denomination	Pupil can express halves, quarters and eighths all as eighths	Pupil can change 1/3 to twelfths by multiplying both the numerator and denominator by four, and 3/4 to twelfths by multiplying both the numerator and the denominator by three.	Pupil can express 2/3 and 4/5 as fifteenths, knowing that 15 is a common multiple of 3 and 5.
N37 Consolidate understanding of the relation between tenths, hundredths and thousandths and decimal notation	Pupil can identify 0.2 as the decimal equivalent of 1/5 by converting 1/5 to 2/10	Pupil can identify 0.125 as the decimal equivalent of 1/8 by deducing it from the decimal equivalent of 1/4	Pupil can interpret any fraction with a power of 10 as its denominator in terms of decimal notation.
N38 Calculate decimal fraction equivalents for a simple fraction	Pupil can calculate 0.2 as the decimal equivalent of 1/5 by converting 1/5 to 2/10.	Pupil can calculate 0.125 as the decimal equivalent of 1/8 by deducing it from the decimal equivalent of 1/4 or use a calculator to do $1 \div 8$.	Pupil can convert any fraction to its decimal equivalent by dividing the numerator by the denominator, either using a calculator or long division.

N39 Consolidate understanding of the connection between fractions, decimals and percentages	Pupil can use manipulatives to show that 25% and 1/4 are equivalent.	Pupil can draw diagrams to show why 25%, 1/4 and 0.25 are equivalent	Pupil can explain why 20%, 1/5 and 0.2 are equivalent.
N40 KPI Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts	Pupil can recall the decimal and percentage equivalents of halves, quarters and tenths, with prompting.	Pupil can recall the decimal and percentage equivalents of halves, quarters, thirds, fifths and tenths in a variety of contexts.	Pupil can recall the decimal and percentage equivalents of halves, quarters, thirds, fifths and tenths in a variety of contexts, selecting the most appropriate form to use for that context and the numbers involved.
N41 Compare and order fractions, including fractions	Pupil can select the larger fraction out of 2/3 and 3/4 using appropriate images.	Pupil can select the larger fraction out of 17/20 and 5/7.	Pupil can devise a general set of instructions for selecting the larger of two fractions.

N42 Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions	Pupil can calculate 1/3 + 1/2 with supporting diagrams.	Pupil can calculate 3/4 + 2/5 = 1 3/20.	Pupil can calculate 3/4 +2/5 ? 1/6 = 59/60.
N43 Multiply simple pairs of proper fractions	Pupil can calculate 1/2 x 1/3 using appropriate images and with prompts	Pupil can calculate 1/3 x 1/4 using appropriate diagrams or images.	Pupil can show how to multiply 1/3 and 1/5 using an appropriate array.
N44 Divide proper fractions by whole numbers	Pupil can calculate 1/3 ÷ 2 using an appropriate diagram and suitable prompts.	Pupil can calculate 1/4 ÷ 5 using a diagram.	Pupil can explain how to divide a fraction by a whole number and why it works.

N45 Round decimals to three decimal places or other approximations depending on the context	Pupil can round an answer involving decimals of pounds to two decimal places as it is to the nearest penny	Pupil can round 0.6666 … to 0.667 when working with length and 0.67 when working with money.	Pupil can justify rounding to a particular number of decimal places by referring to the context.
N46 KPI Use written division methods in cases where the answer has up to two decimal places	Pupil can calculate $17 \div 5$ using jottings and with appropriate prompts	Pupil can calculate $317 \div 25$ using jottings or a more formal written method.	Pupil can apply the formal methods of short or long division to calculations which have answers of several decimal places.
N47 Multiply one-digit numbers with up to two decimal places by whole numbers	Pupil can calculate 2.6×12 using an appropriate written method including jottings.	Pupil can calculate 3.78×27 using an appropriate written method.	Pupil can apply the formal method of long multiplication or the grid method to work out 23.38×83.

N48 Multiply a quantity that represents a unit fraction to find the whole quantity	Pupil can solve problems such as 'Half a packet of biscuits is ten biscuits. How many biscuits are in the whole packet?'	Pupil can solve problems such as 'One-quarter of a packet of biscuits is five biscuits. How many biscuits are in the whole packet?'	Pupil can solve problems such as 'A packet of biscuits plus a third of a packet of biscuits is 36 biscuits. How many biscuits are in one packet of biscuits?' (answer 27).
N49 KPI Solve problems which require decimal answers to be rounded to specified degrees of accuracy	Pupil can solve problems such as 'I have £5 to share between three people. How much do they get each?' (answer £1.66 with 2p to be given to charity!).	Pupil can solve problems such as 'I have £20 to share between 15 people. How much do they get each?' (answer £1.33 with 1p to be given to charity).	Pupil can make up problems involving fractions, decimals and percentages which require the answer to be rounded in some way.
N50 Solve problems with FDP from the Year 6 curriculum	Pupil can solve problems such as 'Which is greater: 3/4 of £15 or 20% of £50?	Pupil can solve problems such as 'Place the following in ascending order of size: 65%, 2/3, 0.6, 5/7'	Pupil can make up problems involving fractions, decimals and percentages which involve at least three steps.

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