

Coast Academies Maths Framework Band 5

Number

Objective		Almost	Meeting	Exceeding
1	N1 KPI Count forwards and backwards with positive and negative whole numbers, including through zero	Pupil can continue the sequence ?1, 0, 1 ...	Pupil can continue the sequence ?3, ?2, ?1 ...	Pupil can solve problems such as 'Does the sequence ?11, ?6, ?1 ... pass through 91?'
2	N2 Count forwards or backwards in steps of powers of 10 for any given number to 1 000 000	Pupil can count backwards from 34,875 in steps of 1000.	Pupil can count backwards from 962,471 in steps of 100,000, 10,000, 1000, 100 and 10.	Pupil can reduce any six-digit number to zero by subtracting the appropriate number of each of the appropriate powers of 10.
3	N3 Continue to count in any multiples of 2 to 10, 25 and 50	Pupil can count up in 6s and 9s using their knowledge of counting up in 3s, and in 8s using their knowledge of counting up in 2s and 4s	Pupil can decide whether a number is a multiple of any number by counting up in multiples of that number.	Pupil can identify whether numbers are in more than one of the sequences with which they are familiar, developing strategies for deciding.
4	N4 KPI Read and write numbers to at least 1 000 000 and determine the value of each digit	Pupil can read and write numbers to 1,000,000 that are multiples of 100.	Pupil can form a number with up to six digit cards and write it in words.	Pupil can write the number of megabytes on a memory stick in words and numerals.
5	N5 Read Roman numerals to 1000 (M) and recognise years written in Roman numerals	Pupil can interpret the numbers from 1 to 20 using Roman numerals, and interpret the year 1900	The pupil can interpret the date written using Roman numerals and identify the year a film was made	Pupil can explain why calculation with large numbers is difficult with Roman numerals.

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6	N6 KPI Interpret negative numbers in context	Pupil can answer questions such as 'Which is colder ?5°C or 10°C?	Pupil can The pupil can answer questions such as 'Which is colder ?2°C or ?10°C	Pupil can solve problems such as identifying the biggest change in temperature between day and night on the planets in the solar system.
7	N7 KPI Order and compare numbers to at least 1 000 000	Pupil can choose the larger number out of 30,000 and 300,000.	Pupil can place the correct sign (=, < and >) in statements such as between 343,434 and 344,344	Pupil can problems involving timelines from the origins of humankind.
8	N8 Solve number problems and practical problems with number and place value from the Year 5 curriculum	Pupil can solve problems such as 'What is the term-to-term rule for the sequence 5, 9, 13 ... and write down the next two terms?'	Pupil can solve problems such as 'What is the term-to-term rule for the sequence 14.5, 13, 11.5 ... and write down the next two terms?'	Pupil can solve problems such as 'What sequence has the third term 0.3 and the seventh term ?1.3?'
9	N9 Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000	Pupil can round 7678 to the nearest 100.	Pupil can round 306,812 to the nearest 10,000.	Pupil can identify the largest multiple of 9 that rounds to 250,000 to the nearest 100.

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10	N10 Continue to use the distributive law to partition numbers when multiplying them	Pupil can use jottings to explain how they work out 11×3 by partitioning.	Pupil can use jottings to explain how to multiply 214 by 9 using partitioning	Pupil can explain how they can use partitioning to work out 452×12 .
11	N11 Develop their understanding of the meaning of the equals sign	Pupil can interpret instances of the equals sign such as $4 + 8 = 10 + 2$ and $4 + ? = 13$.	Pupil can deal with a variety of instances of the equals sign including $3 + ? = 12$; $3 + 12 = ?$ $? + 4$ and $? + ? + 8 = ? + 11$	Pupil can interpret the equals sign as indicating that the expressions on each side are equivalent, whether they involve numbers or are missing number problems.

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12	N12 Establish whether a number up to 100 is prime	Pupil can test whether 19 is prime by trying to divide it by numbers less than 19.	Pupil can test whether 43 is prime by checking its divisibility by numbers smaller than half 43.	Pupil can test whether 67 is prime by testing its divisibility by the prime numbers smaller than the square root of 67.
13	N13 Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	Pupil can explain that a number such as 11 only appears in the multiplication table square in the first column and first row because only 1 and itself 'go into it'.	Pupil can explain that a prime number such as 11 has only two factors and that a composite number such as 12 has prime factors that are 2 and 3.	Pupil can solve problems such as 'Which number up to 100 has the most factors?'
14	N14 KPI Add and subtract numbers mentally with increasingly large numbers	Pupil can work out mentally $15,650 - 450 = 15,200$	Pupil can work out mentally $23,712 - 1610 = 22,102$.	Pupil can solve problems mentally such as $45,762 + ? = 105,761$.

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16	N15 Continue to develop knowledge of addition and subtraction facts and to derive related facts	Pupil can write several calculations derived from $15 + 60 = 75$.	Pupil can write several calculations derived from $15 + 60 = 75$.	Pupil can write a variety of calculations derived from $15 + 63 = 78$ and generalise to describe further calculations.
17	N16 Multiply and divide numbers mentally drawing upon known facts	Pupil can see that there is more than one strategy to complete a mental calculation and can describe them.	Pupil can select from several strategies to calculate $25 \times 80 \times 2.5 (= 5000)$	Pupil can solve problems such as 'Use the numbers 6, 3, 7, 9, 25 and 50 once each, and use any of the four operations to make the target number of 573'.
18	N17 Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	Pupil can work out $10 \times 6 \div 3 \times 4$ mentally.	Pupil can work out $12 \times 70 + 3 \times 20$ 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'.

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19	N18 Solve addition and subtraction multi-step problems in familiar contexts, deciding which operations and methods to use and why	Pupil can solve problems such as 'Dan has £5. He spends £1.80 on a magazine. He needs to keep £1.40 for the bus fare home. Can he afford a sandwich costing £1.90?'	Pupil can solve problems such as 'It is 560 km from Penzance to Manchester and Ali has completed 218 km of the journey. How far must he now travel until he is 100 km from Manchester?', choosing appropriate methods for the calculations.	Pupil can make up problems involving several steps and prompting different calculation strategies such as 'It is 560 km from Penzance to Manchester. Ali drives 315 km and notes that he is 112 km from Birmingham. How far is it from Birmingham to Manchester?' .
20	N19 Solve problems involving addition, subtraction, multiplication and division, and a combination of these	Pupil can solve problems such as 'Sam buys two bottles of water at £1.20 each and pays with a £5 note. What change does he get?'	Pupil can solve problems such as 'Sam buys seven bottles of water and gets 20p change when he pays with a £10 note. How much was each bottle?'	Pupil can make up problems involving several steps and prompting different calculation strategies such as 'Use the numbers 5, 1, 6, 7, 25 and 75 once each and any combination of the four operations to make the number 612'
21	N20 KPI Solve calculation problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes	Pupil can solve problems such as 'I am thinking of a two-digit number. It is a square number. It is a multiple of 12. What number is it?'	Pupil can solve problems such as 'I am thinking of a two-digit number. The difference between its digits is a cube number and the tens digit is a square number. It is a multiple of 13. What is the number?'	Pupil can make up problems such as 'I am thinking of a two-digit number. The difference between its digits is a cube number and the tens digit is a square number. It is a multiple of 13. What is the number?' with a unique answer.

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22	N21 KPI Solve problems involving scaling by simple fractions and problems involving simple rates	Pupil can solve problems such as 'One ruler costs 30p. How much do four rulers cost?'	Pupil can solve problems such as 'Two rulers cost 60p. How much do five rulers cost?'	Pupil can make up problems such as 'Helen cycles 40 km in two hours. How far would she cycle in 20 minutes at the same speed?'
23	N22 Identify multiples and factors, including all factor pairs of a number, and common factors of 2 numbers	Pupil can list the factors of numbers below 10 and arrange them in pairs that multiply to give 10. 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 50 and list the factors of 40 as 1, 40; 2, 20; 4, 10; 5, 8. The pupil recognises that 5 is a common factor of 40 and 35.	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 30 that are co-prime with 36. What do you notice? Can you explain this?'
24	N23 N23 Recall square numbers and cube numbers and the notation for them	Pupil can list the first eight square numbers and interpret 5^2 as $5 \times 5 = 25$.	Pupil can identify whether a given number is a square number or cube number up to 100, interpret 6^2 as $6 \times 6 = 36$ and 2^3 as $2 \times 2 \times 2 = 8$.	Pupil can sort the numbers below 200 into a Venn diagram with two sets: square numbers and cube numbers. The pupil can list the first eight square numbers and interpret 5^2 as $5 \times 5 = 25$. he pupil can also interpret 3^4 as $3 \times 3 \times 3 \times 3 = 81$ and extend the idea to

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25	N24 Recall prime numbers up to 19	Pupil can identify the prime numbers below 10.	Pupil can correctly list the prime numbers up to 19	Pupil can apply their knowledge of the prime numbers below 20 to quickly test numbers up to 200 to ascertain whether they are prime.
26	N25 KPI Add whole numbers with more than 4 digits, including using formal written methods (columnar addition)	Pupil can calculate $8234 + 3265$ using formal columnar methods, with some prompting.	Pupil can calculate $87,234 + 32,465$ using formal columnar methods.	Pupil can calculate $87,234 + 32,465$ using formal columnar methods, describing why each step in the algorithm is used.

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27	N26 KPI Subtract whole numbers with more than 4 digits, including using formal written methods (columnar subtraction)	Pupil can calculate $8234 - 3265$ using formal columnar methods, with some prompting.	Pupil can calculate $87,234 - 32,465$ using formal columnar methods	Pupil can calculate $87,234 - 32,465$ using formal columnar methods, describing why each step in the algorithm is used.
28	N27 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	Pupil can calculate 3964×7 and 3964×32 using a formal written method such as the grid method.	Pupil can calculate 3964×7 and 3964×32 using a formal written method such as the grid method or long multiplication.	Pupil can calculate 3964×7 and 3964×32 using a formal written method such as long multiplication and relate the steps to the grid method.

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29	N28 Divide numbers up to 4 digits by a one-digit number using formal written method of short division and interpret remainders appropriately for the context	Pupil can calculate $714 \div 6$ using chunking and relating it to the formal written method of short division, with prompting and solve problems such as 'Lin wishes to buy 45 bottles of water. They are sold in packs of eight bottles. How many packs must she buy?' knowing that the answer is not exact and	Pupil can calculate $7194 \div 6$ using the formal written method of short division and solve problems such as 'Lin wishes to buy 45 bottles of water. They are sold in packs of eight bottles. How many packs must she buy?' knowing to round up to obtain the correct answer for the context	Pupil can calculate $7194 \div 6$ using the formal written method of short division and extend it to dividing decimals involving four digits by one-digit numbers. The pupil can also solve problems that lead to the calculation $45 \div 8$ and write versions that require the remainder to be dealt with in different ways, e.g. '45 cm of
29	N29 Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	Pupil can check the answer to $9172 + 123 \approx 3987$ by rounding to $9000 + 100 \approx 4000 = 5100$, with some prompting and check the answer to $30 \times 6 = 24$ by working out $24 \div 6 = 30$. The pupil can also check the reasonableness of the answer to a problem such as 'I have 20 sweets and eat 17. How	Pupil can check the answer to $56,713 \approx 3156 + 954$ by rounding to $60,000 \approx 3000 + 1000 = 58,000$ and the answer to $7194 \approx 667 = 6527$ by working out that $6527 + 667 = 7194$. The pupil can also check the reasonableness of the answer to a problem such as 'I buy a book at £6.99 and pay with a £20 note. How much	Pupil can check the answer to $56,713 + 3156 + 954$ by rounding to $60,000 + 3000 + 1000 = 64,000$, knowing where they are likely to have made a mistake and the answer to $7194 \approx 609 = 6585$ by working out that $6585 + 609 = 7194$. The pupil also realises that addition is better checked in other ways as addition is easier
30	N30 Check answers to calculations and to multiplication and division calculations using the inverse	Pupil can check the answer to $30 \div 6 = 5$ by working out $5 \times 6 = 30$.	Pupil can check the answer to $7194 \div 6 = 1199$ by working out that $1199 \times 6 = 7194$.	Pupil can check the answer to $7194 \div 6 = 1199$ by working out that $1199 \times 6 = 7194$. They also realise that multiplication is better checked in other ways as multiplication is easier than division. They can however check divisions by multiplication if necessary.

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<p>N31 Write mathematical statements > 1 as a mixed number</p>	<p>Pupil can identify $\frac{6}{5}$ as being greater than one and, with prompting, realise that it is one whole and one-fifth.</p>	<p>Pupil can write $\frac{24}{5}$ as 4 and $\frac{4}{5}$</p>	<p>Pupil can convert freely between improper fractions and mixed numbers, knowing whether it is better to use one representation than the other.</p>
<p>N32 Continue to apply their knowledge of multiplication table facts to find equivalent fractions</p>	<p>Pupil can use doubling to create a set of equivalent fractions such as $\frac{1}{3}$, $\frac{2}{6}$, $\frac{3}{9}$.</p>	<p>Pupil can simplify $\frac{12}{15}$ by noticing that 3 is a common factor between 12 and 15 and dividing both numerator and denominator by it to get $\frac{4}{5}$.</p>	<p>Pupil can quickly calculate equivalent fractions in order to solve problems.</p>
<p>N33 Recognise and use thousandths and relate them to tenths and hundredths</p>	<p>Pupil can recognise that one out of 1000 is one-thousandth with the help of manipulatives.</p>	<p>Pupil can write $\frac{1}{1000}$ as 0.001 and extend their understanding of the relationship between tenths and hundredths to thousandths. They state that ten-thousandths equal one-hundredth and 100-thousandths equal one-tenth</p>	<p>Pupil can relate thousandths to tenths and hundredths and extend this to ten thousandths and millionths.</p>

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<p>N34 Divide one- or two-digit numbers by 1000, identifying the value of the digits in the answer as ones, tenths, hundredths and thousandths</p>	<p>Pupil can calculate $4 \div 100 = 0.04$ and, with prompting, identify the 4 in 0.04 as four-hundredths.</p>	<p>Pupil can calculate $23 \div 1000 = 0.023$, identifying the 2 in 0.023 as two-hundredths and the 3 as three-thousandths.</p>	<p>Pupil can explain why dividing ones by one thousand results in thousandths and how this might extend into ten thousandths.</p>
<p>N35 Recognise the per cent symbol and understand that per cent relates to "number of parts per hundred"</p>	<p>Pupil can identify 6% as meaning six parts out of 100.</p>	<p>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.</p>	<p>Pupil can readily recognise percentages as hundredths and apply this to solving problems.</p>
<p>N36 Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</p>	<p>Pupil can draw a fraction wall to show the relationship between halves, thirds, quarters and sixths, and use it to identify groups of equivalent fractions. They are able to explain, with prompting, why the fractions are equivalent</p>	<p>Pupil can draw a fraction wall to show the relationship between halves, thirds, quarters, sixths and twelfths, and use it to identify groups of equivalent fractions. They are able to explain why some have several equivalent fractions and others do not</p>	<p>Pupil can draw a fraction wall to show the relationship between any groups of fractions, selecting an appropriate length for the 'wall'. They are able to explain why some have several equivalent fractions and others do not have any</p>

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N37 Recognise mixed numbers and improper fractions and convert from one form to the other	Pupil can write 1 and $\frac{1}{4}$ as $\frac{5}{4}$ and, with diagrams or manipulatives, explain why this works	Pupil can recognise that improper fractions have a numerator that is larger than the denominator and so can be written as a combination of whole numbers and proper fractions	Pupil can identify when it is better to work with mixed numbers rather than improper fractions or vice versa, explaining their reasons for doing so.
N38 Relate thousandths to decimal equivalents	Pupil can interpret $\frac{3}{1000}$ as 0.003.	Pupil can interpret $\frac{45}{1000}$ as 0.045	Pupil can interpret $\frac{3087}{1000}$ as 3.087 and explain why the zero has to be in the tenths position.
N39 KPI Read and write decimal numbers as fractions	The pupil can interpret 0.6 as $\frac{6}{10}$	The pupil can interpret 0.51 as $\frac{51}{100}$	The pupil can interpret 0.126 as $\frac{126}{1000}$.

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<p>N40 Write percentages as a fraction with denominator hundred, and as a decimal</p>	<p>Pupil can write 25% as $\frac{25}{100}$ and as 0.25 with the support of appropriate images or manipulatives.</p>	<p>Pupil can write 45% as $\frac{45}{100}$ and 0.45.</p>	<p>Pupil can write 45% as $\frac{45}{100}$ and 0.45 and simplify $\frac{45}{100}$ to $\frac{9}{20}$.</p>
<p>N41 KPI Know percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those with a denominator of a multiple of 10 or 25</p>	<p>Pupil can write $\frac{1}{2}$ as 0.5 and 50%; $\frac{1}{4}$ as 0.25 and 25%; $\frac{1}{5}$ as 0.2 and 20%.</p>	<p>Pupil can write $\frac{1}{2}$ as 0.5 and 50%; $\frac{1}{4}$ as 0.25 and 25%; $\frac{1}{5}$ as 0.2 and 20%; $\frac{3}{10}$ as 0.3 and 30%; $\frac{4}{25}$ as 0.16 and 16%</p>	<p>Pupil can write $\frac{1}{2}$ as 0.5 and 50%; $\frac{1}{4}$ as 0.25 and 25%; $\frac{1}{5}$ as 0.2 and 20%; $\frac{3}{10}$ as 0.3 and 30%; $\frac{4}{25}$ as 0.16 and 16% and deduce which other fractions can be written as whole number percentages.</p>
<p>N42 KPI Compare and order fractions whose denominators are all multiples of the same number</p>	<p>Pupil can identify the smaller out of $\frac{3}{8}$ and $\frac{1}{4}$ with supporting diagrams.</p>	<p>Pupil can identify the smaller out of $\frac{2}{3}$ and $\frac{13}{18}$.</p>	<p>Pupil can identify the smaller out of $\frac{2}{3}$ and $\frac{13}{18}$ and write down a fraction that is between them.</p>

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<p>N43 Add and subtract fractions with the same denominator and denominators that are multiples of the same number, including calculations</p>	<p>Pupil can calculate $3/4 + 1/2$ with appropriate supporting materials</p>	<p>Pupil can calculate $3/4 + 5/12$</p>	<p>Pupil can make up addition and subtraction problems involving fractions with the same denominator and multiples of the same denominator and solve them.</p>
<p>N44 Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</p>	<p>Pupil can work out $5 \times 1/4 = 5/4$ with supporting diagrams.</p>	<p>Pupil can work out $5 \times 3/8 = 15/8$ or $1 \frac{7}{8}$ and hence deduce that $5 \times 2 \frac{3}{8} = 10 + 15/8 = 11 \frac{7}{8}$, using appropriate diagrams.</p>	<p>Pupil can work out $5 \times 3/8 = 15/8$ or $1 \frac{7}{8}$ and hence deduce that $5 \times 2 \frac{3}{8} = 10 + 15/8 = 11 \frac{7}{8}$.</p>
<p>N45 Round decimals with two decimal places to the nearest whole number and to one decimal place</p>	<p>Pupil can round 3.14 to the nearest whole number (3) and to one decimal place with the support of a decimal scale.</p>	<p>Pupil can round 4.76 to the nearest whole number (5) and to one decimal place (4.8)</p>	<p>Pupil can identify a number that rounds to 6.6 to one decimal place and is the smallest number for which this is true.</p>

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<p>N46 KPI Read, write, order and compare numbers with up to three decimal places</p>	<p>Pupil can choose the larger out of 8.6 and 8.68 and write down a number between them with the support of a decimal scale</p>	<p>Pupil can choose the larger out of 2.608 and 2.86 and write down a number between them.</p>	<p>Pupil can choose the larger out of 2.608 and 2.86 and write down the number that is halfway between them.</p>
<p>N47 Add and subtract decimals including those with a different number of decimal places</p>	<p>Pupil can calculate $3.7 + 4.8 = 8.5$.</p>	<p>Pupil can calculate $2.87 - 0.9 = 1.97$ and $3.4 - 1.76 = 1.64$.</p>	<p>Pupil can calculate $2.87 - 0.9 = 1.97$ and $3.4 - 1.76 = 1.64$ and devise more problems putting these calculations in a context such as measures.</p>
<p>N48 Solve a variety of problems involving fractions</p>	<p>Pupil can solve problems such as 'What fraction of £1 is 20p?'</p>	<p>Pupil can solve problems such as 'What fraction of £3 is 20p?'</p>	<p>Pupil can solve problems such as 'I spent $\frac{3}{5}$ of my money and had £1.40 left to buy lunch. How much did I have originally?'</p>

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<p>N49 Solve problems involving addition and subtraction involving numbers up to three decimal places</p>	<p>Pupil can solve problems such as 'I have 2 m of wood and cut off 0.6 m and then another 0.75 m. How much do I have left?', with supporting diagrams and prompts</p>	<p>Pupil can solve problems such as 'I have 2 m of ribbon and use lengths of 12.7 cm, 87.5 cm, 23 cm and 47 cm. How much do I have left?'</p>	<p>pupil can solve problems such as 'I have 12 m of wood split into 1.5 m lengths. I need ten 80 cm lengths, fifteen 15 cm lengths and seven 16 cm lengths. Can I cut this from my wood?'</p>
<p>N50 Solve problems which require knowing key percentage and decimal equivalents</p>	<p>Pupil can solve problems such as 'Which is better: 25% commission or 0.15 of the sales?'</p>	<p>Pupil can solve problems such as 'Which is more: 20% off or 0.75 of the full amount?'</p>	<p>Pupil can decide which decimal and percentage equivalents are key ones and which can easily be deduced.</p>

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