

Knowing and using Number Facts for Calculating

Coppice Farm Primary School

Y1 Knowing and using number facts	
Operations and relationships between them	Mental methods
<ul style="list-style-type: none"> • Recall the doubles of all numbers to at least 10 <p>I can recall or work out doubles of numbers to at least 10 E3</p> <p>I can use doubles I know to help me work out other doubles E3</p> <p>I can recall doubles of numbers up to $10 + 10$ B3</p> <p>I can recall or work out doubles of all numbers to 10 E2</p> <p>I can recall or work out the doubles of numbers up to $5 + 5$ or more B2</p> <p>I can recall or work out doubles of numbers to $5 + 5$ E1</p>	<ul style="list-style-type: none"> • Count on or back in ones, twos, fives and tens and use this knowledge to derive the multiples of 2,5 and 10 to the tenth multiple <p>I can count on from or back to zero in ones, twos, fives or tens E3</p> <p>I can count on and back in ones, fives and tens E2</p> <p>I am beginning to count in fives E1</p> <p>I can count on and back in ones and tens E1</p> <ul style="list-style-type: none"> • Derive and recall all pairs of numbers with a total of 10 and addition facts for totals to at least 5; • work out the corresponding subtraction facts <p>I know the pairs of numbers that total 10 B3 B2</p> <p>I can remember or work out simple add and take away calculations with answers to 5 B3</p> <p>I know how to add numbers to make different totals up to 5 and I am beginning to work out take away answers as well B2</p> <p>I know some pairs of numbers that total 10 B1</p> <p>I can use counters or blocks to add numbers with answers up to 5 B1</p>

Y2 Knowing and using Number facts	
Operations and relationships between them	Mental methods
<ul style="list-style-type: none"> • calculate the value of an unknown in a number sentence <p>I can work out the missing numbers in number sentences E3 I can work out the missing number in a number sentence such as $14 + \square = 35$ A3</p> <ul style="list-style-type: none"> • Use knowledge of number facts and operations to estimate and check answers to calculations <p>When I think I have the answer, I can put it in the number sentence and check whether it is correct E3 I can check answers to calculations involving doubling by halving the answer B3 I can check the answer to an addition by doing a related subtraction B1</p> <ul style="list-style-type: none"> • Understand that halving is the inverse of doubling and derive and recall doubles of all numbers to 20, and the corresponding halves. <p>I can double all numbers up to 20 and can find matching halves E3 I know the doubles of all the numbers up to 20 B3 I can work out doubles up to 20 and some others too E2 I know some of my doubles up to 20 E2 I understand the connection between doubling and halving E1 I know doubles of numbers up to 10 and I can use what I know to work out halves E1 I know that if I double a number then halve the answer I get back to the number I started with B1</p> <ul style="list-style-type: none"> • Understand that subtraction is the inverse of addition and vice versa; use this to derive and record related addition and subtraction number sentences <p>I know when it is easier to use addition to work out a subtraction A3 I can write three other related number sentences for $6 + 3 = 9$ A1 I know that addition and subtraction 'undo' each other A</p>	<ul style="list-style-type: none"> • Add or subtract mentally a one-digit number or a multiple of 10 to or from any two-digit number <p>I can add and subtract some numbers in my head A1 A2 D1 D2</p> <ul style="list-style-type: none"> • Derive and recall multiplication facts for the 2,5 and 10 times-tables and the related division facts; recognise multiples of 2,5 and 10 <p>I can work out divisions that go with the 2, 5 and 10 times-tables B3 E3 I know my 2, 5 and 10 times tables B3 E3 I can tell if a number is a multiple of 2, 5 or 10 B3 I know that multiples of 5 end in 5 or 0 E2 I can use counting or other strategies for tables I don't know E2</p> <p>I know some of my times-tables for 2, 5 and 10 E2 I know some of the number facts in the 2, 5 and 10 times-tables B2 I know that multiples of 2 are even numbers B2 I can use my knowledge of 2,5 and 10 patterns to see if other numbers belong to the sequence E1 I can recognise some of the 2, 5 and 10 times-tables and can explain the patterns I see E1 I can count in steps of 2, 5 or 10 B1</p> <ul style="list-style-type: none"> • Derive and recall all addition and subtraction facts for each number to at least 10, • all pairs with totals to 20 and all pairs of multiples of 10 with totals up to 100 <p>I know all the pairs of multiples of 10 that make 100 B3 I know which pairs of numbers make 20 B2 B3 I can recall number facts for each number up to 10 B1 B2</p>

Y3 Knowing and using Number Facts

Operations and relationships between them	Mental methods
<p>○ Use knowledge of number facts operations and corresponding inverses, including doubling and halving, to estimate and check calculations</p> <p>I can check whether the answer to a calculation is correct D3 I can estimate and check my calculations B3 B1</p> <ul style="list-style-type: none"> • Understand that division is the inverse of multiplication and vice versa; use this to derive and record related multiplication and division number sentences <p>I can say what multiplication fact I would use for a division calculation D3 I can give the multiplication fact that is linked to a division fact E2</p>	<ul style="list-style-type: none"> • Add or subtract mentally combinations of one-digit and two-digit numbers <p>I can add several one-digit numbers in my head A3 I can find the sum of or difference between one-digit and two-digit numbers in my head A3 I know how to find the difference between two 2-digit numbers D2 I can add or subtract two 2-digit numbers D2 I can add or subtract one-digit and two-digit numbers in my head A2 A1 I can add or subtract a one-digit number to or from a two-digit number D1 I can add or subtract a multiple of 10 to or from a two-digit number D1</p> <ul style="list-style-type: none"> • Derive and recall multiplication facts for the 2,3,4,5,6 and 10 times-tables and the corresponding division facts; recognise multiples of 2,5 or 10 up to 1000 <p>I can use my knowledge of multiplication tables to find division facts E3 I know the 2, 3, 4, 5, 6 and 10 times tables and use them for division B3 I can use my tables for 2, 3, 4, 5, 6 and 10 to work out division facts A3 I know the 2, 3, 4, 5, 6 and 10 times-tables and use them for division facts B2 B1 I know the 2, 3, 4, 5, 6 and 10 times-tables E2 A2 I can use multiplication facts to answer division questions E1 I know the 2, 5 and 10 times-tables E1 I recognise multiples of 2, 5 and 10 B3 B2 B1</p> <ul style="list-style-type: none"> • Derive and recall all addition and subtraction facts for each number to 20, • sums and differences of multiples of 10 and number pairs that total 100 <p>I can find what to add to a number to make 100 B3 I know and use all addition and subtraction facts to 20 B3 I can add and subtract multiples of 10 in my head B2 I can add and subtract multiples of 10 or 100 in my head A2 A1 I know number pairs that sum to 100 A2 I know addition and subtraction facts for numbers to 20 E1 I can add and subtract multiples of 10 E1 I know and use addition and subtraction facts for all numbers to 20 B2 B1 I know the sum and difference of any pair of numbers to 20 A2 A1</p>

Y4 Knowing and Using number facts

Operations and relationships between them

- Use knowledge of addition and subtraction facts and place value to derive sums and differences of pairs of multiples of 10, 100 or 1000

Because I know number facts such as $8 - 3 = 5$, I know that $80 - 30 = 50$. I can use this to work out calculations such as $86 - 36 = 50$ **B3**

I can find differences between numbers such as 2993 and 3000 because I know facts such as $3 + 7 = 10$ **B3**

Because I know sums like $3 + 7 = 10$, I also know $30 + 70 = 100$
 $300 + 700 = 1000$ $3000 + 7000 = 10\ 000$ **B1**

Because I know differences like $6 - 4 = 2$, I also know $60 - 40 = 20$

$$600 - 400 = 200$$

$$6000 - 4000 = 2000$$
 B1

I can work out sums and differences of multiples of 100 or 1000 **A1**

- Use knowledge of rounding, number operations and inverses to estimate and check calculations

I can use inverse operations to help me check calculations **B3**

If you give me a number fact, I can tell you some related facts **B3**

If I add two numbers I can use subtraction to check whether my answer is correct **B2**

If I divide one number by another I can use multiplication to check whether my answer is correct **B2**

I can estimate and check the result of a calculation **A3 A2 A1**

I can round numbers in a calculation to help me estimate the answer to the calculation **B1**

Mental methods

- Identify the doubles of two-digit numbers; use these to calculate the doubles of multiples of 10 and 100
- and derive the corresponding halves

I can work out doubles of two-digit numbers **B3**

Because I know that double 9 is 18, I know that double 900 is 1800 **B3**

Because I know that double 80 is 160, I know that half of 160 is 80 **B3**

I know that doubling and halving are inverse operations **B3**

Because I know that double 7 is 14, I know that double 70 is 140 **B2**

I can work out doubles of numbers with two digits **B2**

I can double two-digit numbers **A1**

- Derive and recall multiplication facts up to 10×10 , the corresponding division facts and multiples of numbers to 10 up to the tenth multiple

I know all multiplication facts up to 10×10 , even when they are not in the right order **E3**

If you give me a multiplication fact I can give you one or two division facts that go with it **B3 E2 E1**

I can tell you answers to the 9 times-table, even when the questions are not in order **B3**

I know what a factor of a number means. I can find all the factors of 36 **B3**

I can tell you answers to the 7 times-tables, even when they are not in the right order **E2**

I can tell you answers to the 8 times-table, even when the questions are not in order **B2**

I can use the multiplication facts I know to work out division facts **A2**

I know my tables to 10×10 **D2 A2**

I can tell you answers to the 2, 3, 4, 5, 6 and 10 times-tables, even when they are not in the right order **E1**

I can work out division facts for the 1, 2, 3, 4, 5 and 6 times-tables **B1**

I can count in 6s from zero to 60 **B1**

I know my 8 times-table and my 9 times-table **A1**

Y5 Knowing and Using Number facts

Operations and relationships between them	Mental methods
<p>○ Use knowledge of place value and addition and subtraction of two-digit numbers to derive sums and differences and doubles and halves of decimals</p> <p>I can add/subtract decimals in my head by using a related two-digit addition or subtraction B3 B2</p> <p>I can find the double or half of a decimal by doubling or halving the related whole number B3 B2</p> <p>I can work out sums, differences, halves and doubles of decimals with two digits A3</p> <p>I can double and halve two-digit numbers and explain how to use this to double and halve related decimals E2</p> <p>I can work out sums and differences of decimals A2</p> <p>I can work out sums and differences of decimals with two digits A1</p> <ul style="list-style-type: none"> • Use knowledge of rounding, place value, number facts and inverse operations to estimate and check calculations <p>I can use rounding of whole numbers and decimals to estimate and check calculations D3</p> <p>I can round numbers to the nearest whole unit D3</p> <p>Before I solve a word problem, I work out an estimate for the answer B3</p> <p>I can estimate and check the result of a calculation A3 A2 A1</p> <p>I can use rounding to estimate and check calculations D2</p> <p>I can check whether a calculation is correct and explain how I did this B2 B1</p>	<ul style="list-style-type: none"> • Recall quickly multiplication facts up to 10×10 and use them to multiply pairs of multiples of 10 and 100; • derive quickly corresponding division facts <p>I can use tables facts to multiply multiples of 10 and 100 and to find linked division facts B3 B2 B1</p> <p>I know my tables to 10 for multiplication facts and division facts;</p> <p>I can use these facts to multiply multiples of 10 and 100 A3 A2</p> <p>I can use multiplication and division facts to multiply and divide multiples of 10 and 100 E1</p> <p>I know my tables to 10. I can use these facts to multiply multiples of 10 and 100 A1</p> <ul style="list-style-type: none"> • Identify pairs of factors of two-digit whole numbers and find common multiples <p>I can find a common multiple of two numbers E1</p> <p>I can find pairs of factors that multiply to make a given number E1 B1</p> <p>I can find a number that is a multiple of two different numbers B1</p> <p>I can find all the factor pairs for a two-digit number A2</p> <p>I can find a pair of factors for a two-digit number A1</p>

Y6 Knowing and using number Facts

Operations and relationships between them

- Use knowledge of place value and multiplication facts to 10×10 to derive related multiplication and division facts involving decimals

I can use place value and my tables to work out multiplication and division facts **E3**

I can use my tables to work out decimal facts like 0.4×8 and $5.6 \div 7$ **B3**

I can use tables facts to work out related facts with decimals **B2**

I can use place value and my tables to work out multiplication and division facts for decimals **E1**

I can use tables facts to work out other facts with decimals **A2 B1 A1**

- Use approximations, inverse operations and tests of divisibility to estimate and check results

I can estimate and check the result of a calculation **B3 A3 B2 A2**

I can estimate the result of a calculation **D3 D2 D1**

I know several ways of checking answers **D3 D2 D1**

I can estimate and check the calculations that I do **B1 A1**

Mental methods

- Use knowledge of multiplication facts to derive quickly squares of numbers to 12×12 and the corresponding squares of multiples of 10

I can say the squares of numbers to 12×12 and work out the squares of multiples of 10 **B3 B2 B1**

- Recognise that prime numbers have only two factors and identify prime numbers less than 100; find the prime factors of two-digit numbers

I can tell you all the prime numbers up to 100 and find the prime factors of other numbers **B3**

I can work out which numbers less than 100 are prime **B2 B1**

- Calculate mentally with integers and decimals:

$$U.t \pm U.t, TU \times U, TU \div U,$$

$$U.t \times U, U.t \div U$$

I can add, subtract, multiply and divide whole numbers and decimals in my head **D3 A3 D2 A2 D1 A1**