**Calculation Policy**

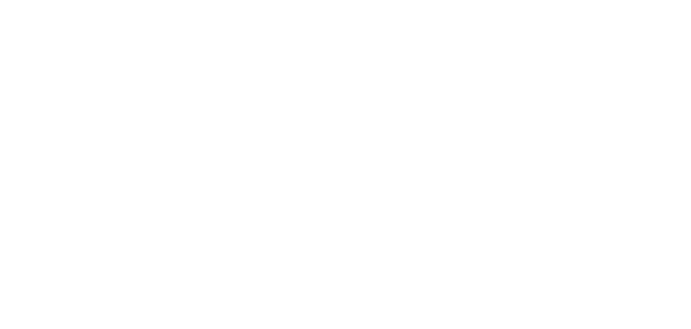
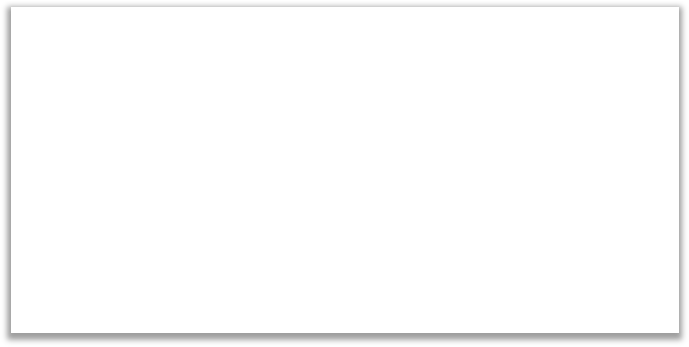
**EYFS and KS1**



“Do your best. Be your best.”

October 2023

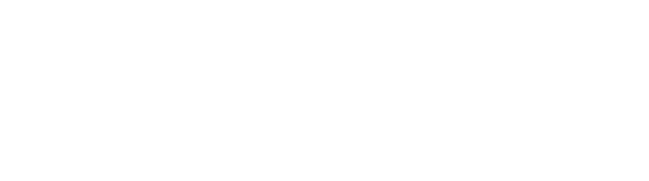
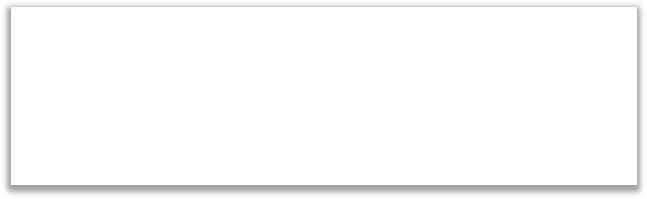
# Maths in the Early Years Foundation Stage:



Children are encouraged to use mathematical language through the water and sand trays.

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Learning and development in Math starts from the moment children join us at Penketh South. Children in the Early Years are playing and exploring, actively learning, creating and thinking critically across all areas in this phase. Essential Math skills and knowledge are taught through a range of discreet tasks across different areas.



High quality, open ended resources to support learning and exploration.



Mathematical learning is evident in all areas of the classroom. Bringing learning to life for the children.

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The new Framework became statutory from September 2021 and is detailed below.

**Educational Programme**

Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, ‘have a go’, talk to adults and peers about what they notice and not be afraid to make mistakes.

## 

## Early Learning Goals

**Number**

* + Have a deep understanding of number to 10, including the composition of each number.
  + Subitise (recognise quantities without counting) up to 5.

Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

## Numerical Patterns

* + Verbally count beyond 20, recognising the pattern of the counting system.
  + Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other Quantity`.

Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally

**Calculation Policy Guidance Overview**

**Nursery – Year 2 guidance. For KS2 guidance please see Power LK2 and UKS2 calculation policy on Website.**

|  |  |  |
| --- | --- | --- |
|  | EYFS/Year 1 | Year 2 |
| Addition | Combining two groups to make a whole  Starting at the bigger number and counting on – using cubes  Regrouping to make 10 | Adding 3 single digits |
| Subtraction | Take away ones  Counting back  Find the difference | Counting back  Find the difference |
| Multiplication | Recognising and making equal groups  Doubling  Counting in multiples using classroom equipment | Arrays showing commutative multiplication |
| Division | Sharing objects into groups | Division as grouping  Division with arrays – linked to multiplication  Repeated subtraction |

**Progression in Calculations**

It is important that the children understand the calculation in a concrete way at first (using apparatus), then using pictures to represent their thinking before finally completing calculations in a more abstract way (formal methods). This applies to all year groups. It is paramount for them to explain their reasoning about how they are calculating at every stage.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| KEY STAGE 1 | | | | | |
| Children develop the core ideas that underpin all calculation. They begin by connecting calculation with counting on and counting back, but they should learn that understanding wholes and parts will enable them to calculate efficiently and accurately, and with greater flexibility. They learn how to use an understanding of 10s and 1s to develop their calculation strategies, especially in addition and subtraction. | | | | | |
| Key language: whole, part, ones, ten, tens, number bond, add, addition, plus, total, altogether, subtract, subtraction, find the difference, take away, minus, less, more, group, share, equal, equals, is equal to, groups, equal groups, times, multiply, multiplied by, divide, share, shared equally, times-table | | | | | |
| Addition and subtraction: Children first learn to connect addition and subtraction with counting, but they soon develop two very important skills: an understanding of parts and wholes, and an understanding of unitising 10s, to develop efficient and effective calculation strategies based on known number bonds and an increasing awareness of place value. Addition and subtraction are taught in a way that is interlinked to highlight the link between the two operations.  A key idea is that children will select methods and approaches based on their number sense. For example, in Year 1, when faced with 15 − 3 and 15 − 13, they will adapt their ways of approaching the calculation appropriately. The teaching should always emphasise the importance of mathematical thinking to ensure accuracy and flexibility of approach, and the importance of using known number facts to harness their recall of bonds within 20 to support both addition and subtraction methods.  In Year 2, they will start to see calculations presented in a column format, although this is not expected to be formalised until KS2. We show the column method in Year 2 as an option; teachers may not wish to include it until Year 3. | | Multiplication and division: Children develop an awareness of equal groups and link this with counting in equal steps, starting with 2s, 5s and 10s. In Year 2, they learn to connect the language of equal groups with the mathematical symbols for multiplication and division.  They learn how multiplication and division can be related to repeated addition and repeated subtraction to find the answer to the calculation.  In this key stage, it is vital that children explore and experience a variety of strong images and manipulative representations of equal groups, including concrete experiences as well as abstract calculations.  Children begin to recall some key multiplication facts, including doubles, and an understanding of the 2, 5 and 10 times-tables and how they are related to counting. | | Fractions: In Year 1, children encounter halves and quarters, and link this with their understanding of sharing. They experience key spatial representations of these fractions, and learn to recognise examples and non-examples, based on their awareness of equal parts of a whole.  In Year 2, they develop an awareness of unit fractions and experience non-unit fractions, and they learn to write them and read them in the common format of numerator and denominator. | |
| Year 1 | | | | | |
|  | **Concrete** | | **Pictorial** | | **Abstract** |
| **Year 1**  **Addition** | **Counting and adding more**  Children add one more person or object to a group to find one more. | | **Counting and adding more**  Children add one more cube or counter to a group to represent one more.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_001.jpg  *One more than 4 is 5.* | | **Counting and adding more**  Use a number line to understand how to link counting on with finding one more.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_002.jpg  *One more than 6 is 7.*  *7 is one more than 6.*  Learn to link counting on with adding more than one.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_003.jpg  *5 + 3 = 8* |
| Understanding part-part-whole relationship  Sort people and objects into parts and understand the relationship with the whole.  A group of kids in blue uniforms  Description automatically generated  *The parts are 2 and 4. The whole is 6.* | | **Understanding part-part-whole relationship**  Children draw to represent the parts and understand the relationship with the whole.  A close-up of a red blue and yellow circle  Description automatically generated  *The parts are 1 and 5. The whole is 6.* | | **Understanding part-part-whole relationship**  Use a part-whole model to represent the numbers.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_006.jpg  6 + 4 = 10 |
|  | **Knowing and finding number bonds within 10**  Break apart a group and put back together to find and form number bonds.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_007.jpg  *3 + 4 = 7*    *6 = 2 + 4* | | **Knowing and finding number bonds within 10**  Use five and ten frames to represent key number bonds.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_009.jpg  *5 = 4 + 1*  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_010.jpg  *10 = 7 + 3* | | **Knowing and finding number bonds within 10**  Use a part-whole model alongside other representations to find number bonds. Make sure to include examples where one of the parts is zero.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_011.jpg  *4 + 0 = 4*  *3 + 1 = 4* |
| **Understanding teen numbers as a complete 10 and some more**  Complete a group of 10 objects and count more.  A close-up of a test tube  Description automatically generated  *13 is 10 and 3 more.* | | **Understanding teen numbers as a complete 10 and some more**  Use a ten frame to support understanding of a complete 10 for teen numbers.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_013.jpg  *13 is 10 and 3 more.* | | **Understanding teen numbers as a complete 10 and some more**.  *1 ten and 3 ones equal 13.*  *10 + 3 = 13* |
|  | **Adding by counting on**  Children use knowledge of counting to 20 to find a total by counting on using people or objects.  A school bus with kids on it  Description automatically generated | | **Adding by counting on**  Children use counters to support and represent their counting on strategy.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_015.jpg | | **Adding by counting on**  Children use number lines or number tracks to support their counting on strategy.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_016.jpg |
| **Adding the 1s**  Children use bead strings to recognise how to add the 1s to find the total efficiently.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_017.jpg  *2 + 3 = 5*  *12 + 3 = 15* | | **Adding the 1s**  Children represent calculations using ten frames to add a teen and 1s.  A close up of a domino  Description automatically generated  *2 + 3 = 5*  *12 + 3 = 15* | | **Adding the 1s**  Children recognise that a teen is made from a 10 and some 1s and use their knowledge of addition within 10 to work efficiently.  *3 + 5 = 8*  *So, 13 + 5 = 18* |
| **Bridging the 10 using number bonds**  Children use a bead string to complete a 10 and understand how this relates to the addition.    *7 add 3 makes 10.*  *So, 7 add 5 is 10 and 2 more.* | | **Bridging the 10 using number bonds**  Children use counters to complete a ten frame and understand how they can add using knowledge of number bonds to 10.  A group of red and yellow circles  Description automatically generated  . | | **Bridging the 10 using number bonds**  Use a part-whole model and a number line to support the calculation.  A diagram of a diagram with numbers and arrows  Description automatically generated  *9 + 4 = 13* |
| **Year 1**  **Subtraction** | **Counting back and taking away**  Children arrange objects and remove to find how many are left.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_022.jpg  *1 less than 6 is 5.*  *6 subtract 1 is 5*. | | **Counting back and taking away**  Children draw and cross out or use counters to represent objects from a problem.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_023.jpg | | **Counting back and taking away**  Children count back to take away and use a number line or number track to support the method.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_024.jpg  *9 − 3 = 6* |
| **Finding a missing part, given a whole and a part**  Children separate a whole into parts and understand how one part can be found by subtraction.  A group of cars in different colors  Description automatically generated  *8 − 5 = ?* | | **Finding a missing part, given a whole and a part**  Children represent a whole and a part and understand how to find the missing part by subtraction.  A screenshot of a game  Description automatically generated | | **Finding a missing part, given a whole and a part**  Children use a part-whole model to support the subtraction to find a missing part.  A black and white diagram  Description automatically generated  *7 − 3 = ?*  Children develop an understanding of the relationship between addition and subtraction facts in a part-whole model.  A group of circles and squares  Description automatically generated |
| **Finding the difference**  Arrange two groups so that the difference between the groups can be worked out.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_029.jpg  *8 is 2 more than 6.*  *6 is 2 less than 8.*  *The difference between 8 and 6 is 2.* | | **Finding the difference**  Represent objects using sketches or counters to support finding the difference.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_030.jpg  *5 − 4 = 1*  *The difference between 5 and 4 is 1.* | | **Finding the difference**  Children understand ‘find the difference’ as subtraction.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_031.jpg  *10 − 4 = 6*  *The difference between 10 and 6 is* *4.* |
| **Subtraction within 20**  Understand when and how to subtract 1s efficiently.  Use a bead string to subtract 1s efficiently.    *5 − 3 = 2*  *15 − 3 = 12* | | **Subtraction within 20**  Understand when and how to subtract 1s efficiently.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_033.jpg  *5 − 3 = 2*  *15 − 3 = 12* | | **Subtraction within 20**  Understand how to use knowledge of bonds within 10 to subtract efficiently.  *5 − 3 = 2*  *15 − 3 = 12* |
| **Subtracting 10s and 1s**  For example: 18 − 12  Subtract 12 by first subtracting the 10, then the remaining 2.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_034.jpg  *First subtract the 10, then take away 2.* | | **Subtracting 10s and 1s**  For example: 18 − 12  Use ten frames to represent the efficient method of subtracting 12.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_035.jpg  *First subtract the 10, then subtract 2.* | | **Subtracting 10s and 1s**  Use a part-whole model to support the calculation.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_036.jpg  *19 − 14*  *19 − 10 = 9*  *9 − 4 = 5*  *So, 19 − 14 = 5* |
|  | **Subtraction bridging 10 using number bonds**  For example: 12 − 7  Arrange objects into a 10 and some 1s, then decide on how to split the 7 into parts.  A pair of black rectangular signs with a cross and a pipe  Description automatically generated with medium confidence  *7 is 2 and 5, so I take away the 2 and  then the 5.* | | **Subtraction bridging 10 using number bonds**  Represent the use of bonds using ten frames.  A blue circles and a black line  Description automatically generated  *For 13 – 5, I take away 3 to make 10, then take away 2 to make 8.* | | **Subtraction bridging 10 using number bonds**  Use a number line and a part-whole model to support the method.  13 − 5  A diagram of a number line  Description automatically generated |
| **Year 1**  **Multiplication** | **Recognising and making equal groups**  Children arrange objects in equal and unequal groups and understand how to recognise whether they are equal.  A couple of blue plates with cupcakes on them  Description automatically generated | | **Recognising and making equal groups**  Children draw and represent equal and unequal groups.  A group of blue and orange circles  Description automatically generated | | **Describe equal groups using words**  *Three equal groups of 4*.  *Four equal groups of 3*. |
| **Finding the total of equal groups by counting in 2s, 5s and 10s**  A yellow and red book with a red pen on it  Description automatically generated  There are 5 pens in each pack …  5…10…15…20…25…30…35…40… | | **Finding the total of equal groups by counting in 2s, 5s and 10s**  100 squares and ten frames support counting in 2s, 5s and 10s.  A table of numbers with red circles  Description automatically generated | | **Finding the total of equal groups by counting in 2s, 5s and 10s**  Use a number line to support repeated addition through counting in 2s, 5s and 10s.  A diagram of a graph  Description automatically generated |
| **Year 1**  **Division** | **Grouping**  Learn to make equal groups from a whole and find how many equal groups of a certain size can be made.  Sort a whole set people and objects into equal groups.  A group of cartoon children  Description automatically generated  *There are 10 children altogether.*  *There are 2 in each group.*  *There are 5 groups.* | | **Grouping**  Represent a whole and work out how many equal groups.  A red and grey circle with white circles  Description automatically generated with medium confidence  *There are 10 in total.*  *There are 5 in each group.*  *There are 2 groups.* | | **Grouping**  Children may relate this to counting back in steps of 2, 5 or 10.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_046.jpg |
| **Sharing**  Share a set of objects into equal parts and work out how many are in each part**.**  A diagram of a diagram of a diagram of a diagram of a diagram of a diagram of a diagram of a diagram of a diagram of a diagram of a diagram of a diagram of a diagram of  Description automatically generated | | **Sharing**  Sketch or draw to represent sharing into equal parts. This may be related to fractions.  A drawing of a child and child  Description automatically generated | | **Sharing**  *10 shared into 2 equal groups gives 5 in each group.* |

|  |  |  |  |
| --- | --- | --- | --- |
| Year 2 | | | |
|  | **Concrete** | **Pictorial** | **Abstract** |
| **Year 2**  **Addition** |  |  |  |
| **Understanding 10s and 1s** | Group objects into 10s and 1s.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_050.jpg  Bundle straws to understand unitising of 10s.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_051.jpg | Understand 10s and 1s equipment, and link with visual representations on ten frames.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_052.jpg | Represent numbers on a place value grid, using equipment or numerals.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_053.jpg  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_054.jpg |
| **Adding 10s** | Use known bonds and unitising to add 10s.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_055.jpg  *I know that 4 + 3 = 7.  So, I know that 4 tens add 3 tens is 7 tens.* | Use known bonds and unitising to add 10s.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_056.jpg  *I know that 4 + 3 = 7.  So, I know that 4 tens add 3 tens is 7 tens.* | Use known bonds and unitising to add 10s.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_057.jpg  *4 + 3 = 7*  *4 tens + 3 tens = 7 tens*  *40 + 30 = 70* |
| **Adding a  1-digit number to a 2-digit number not bridging a 10** | Add the 1s to find the total. Use known bonds within 10.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_058.jpg  *41 is 4 tens and 1 one.*  *41 add 6 ones is 4 tens and 7 ones.*  This can also be done in a place value grid.  A close-up of a rectangular box  Description automatically generated | Add the 1s.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_059.jpg  *34 is 3 tens and 4 ones.*  *4 ones and 5 ones are 9 ones.*  *The total is 3 tens and 9 ones.*  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_061.jpg | Add the 1s.  Understand the link between counting on and using known number facts. Children should be encouraged to use known number bonds to improve efficiency and accuracy.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_062.jpg  This can be represented horizontally or vertically.  *34 + 5 = 39*  *or*  *C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_063.jpg* |
| **Adding a  1-digit number to a 2-digit number bridging 10** | Complete a 10 using number bonds.  A red flag with white stripes  Description automatically generated  *There are 4 tens and 5 ones.*  *I need to add 7. I will use 5 to complete a 10, then add 2 more.* | Complete a 10 using number bonds.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_065.jpg | Complete a 10 using number bonds.  A diagram of a graph with Ice hockey rink in the background  Description automatically generated  *7 = 5 + 2*  *45 + 5 + 2 = 52* |
| **Adding a  1-digit number to a 2-digit number using exchange** | Exchange 10 ones for 1 ten.  A close-up of a chart  Description automatically generated | Exchange 10 ones for 1 ten.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_068.jpg | Exchange 10 ones for 1 ten.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_069.jpg |
| **Adding a multiple of 10 to a 2-digit number** | Add the 10s and then recombine.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_070.jpg  *27 is 2 tens and 7 ones.*  *50 is 5 tens.*  *There are 7 tens in total and 7 ones.*  *So, 27 + 50 is 7 tens and 7 ones.* | Add the 10s and then recombine.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_071.jpg  *66 is 6 tens and 6 ones.*  *66 + 10 = 76*  A 100 square can support this understanding.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_072.jpg | Add the 10s and then recombine.  *37 + 20 = ?*  *30 + 20 = 50*  *50 + 7 = 57*  *37 + 20 = 57* |
| **Adding a multiple of 10 to a 2-digit number using columns** | Add the 10s using a place value grid to support.  A close-up of a chart  Description automatically generated  *16 is 1 ten and 6 ones.*  *30 is 3 tens.*  *There are 4 tens and 6 ones in total.* | Add the 10s using a place value grid to support.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_074.jpg  *16 is 1 ten and 6 ones.*  *30 is 3 tens.*  *There are 4 tens and 6 ones in total.* | Add the 10s represented vertically. Children must understand how the method relates to unitising of 10s and place value.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_075.jpg  *1 + 3 = 4*  *1 ten + 3 tens = 4 tens*  *16 + 30 = 46* |
| **Adding two  2-digit numbers** | Add the 10s and 1s separately.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_076.jpg  *5 + 3 = 8*  *There are 8 ones in total.*  *3 + 2 = 5*  *There are 5 tens in total.*  *35 + 23 = 58* | Add the 10s and 1s separately. Use a  part-whole model to support.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_077.jpg  *11 = 10 + 1*  *32 + 10 = 42*  *42 + 1 = 43*  *32 + 11 = 43* | Add the 10s and the 1s separately, bridging 10s where required. A number line can support the calculations.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_078.jpg  *17 + 25* |
| **Adding two  2-digit numbers using a place value grid** | Add the 1s. Then add the 10s.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_079.jpg |  | Add the 1s. Then add the 10s.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_080.jpg |
| **Adding two  2-digit numbers with exchange** | Add the 1s. Exchange 10 ones for a ten. Then add the 10s.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_081.jpg |  | Add the 1s. Exchange 10 ones for a ten. Then add the 10s.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_082.jpg |
| **Year 2**  **Subtraction** |  |  |  |
| **Subtracting multiples of 10** | Use known number bonds and unitising to subtract multiples of 10.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_083.jpg  *8 subtract 6 is 2.*  *So, 8 tens subtract 6 tens is 2 tens.* | Use known number bonds and unitising to subtract multiples of 10.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_084.jpg  *10 − 3 = 7*  *So, 10 tens subtract 3 tens is 7 tens.* | Use known number bonds and unitising to subtract multiples of 10.  A couple of circles with numbers  Description automatically generated  *7 tens subtract 5 tens is 2 tens.*  *70 − 50 = 20* |
| **Subtracting a single-digit number** | Subtract the 1s. This may be done in or out of a place value grid.  A group of brown round objects  Description automatically generated  A close-up of a number  Description automatically generated | Subtract the 1s. This may be done in or out of a place value grid.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_088.jpg  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_089.jpg | Subtract the 1s. Understand the link between counting back and subtracting the 1s using known bonds.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_090.jpg  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_091.jpg *9 − 3 = 6*  *39 − 3 = 36* |
| **Subtracting a single-digit number bridging 10** | Bridge 10 by using known bonds.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_092.jpg  *35 − 6*  *I took away 5 counters, then 1 more.* | Bridge 10 by using known bonds.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_093.jpg  *35 − 6*  *First, I will subtract 5, then 1.* | Bridge 10 by using known bonds.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_094.jpg  *24 − 6 = ?*  *24 − 4 − 2 = ?* |
| **Subtracting a single-digit number using exchange** | Exchange 1 ten for 10 ones. This may be done in or out of a place value grid.  A close-up of a chart  Description automatically generated | Exchange 1 ten for 10 ones.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_096.jpg | Exchange 1 ten for 10 ones.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_097.jpg  *25 − 7 = 18* |
| **Subtracting a  2-digit number** | Subtract by taking away.  A row of black circles with red lines  Description automatically generated  *61 − 18*  *I took away 1 ten and 8 ones.* | Subtract the 10s and the 1s.  This can be represented on a 100 square.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_099.jpg | Subtract the 10s and the 1s.  This can be represented on a number line.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_100.jpg  *64 − 41 = ?*  *64 − 1 = 63*  *63 − 40 = 23*  *64 − 41 = 23*  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_101.jpg  *46 − 20 = 26*  *26 − 5 = 21*  *46 − 25 = 21* |
| **Subtracting a  2-digit number using place value and columns** | Subtract the 1s. Then subtract the 10s. This may be done in or out of a place value grid.  A diagram of eggs in rows  Description automatically generated with medium confidence  *38 − 16 = 22* | Subtract the 1s. Then subtract the 10s.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_103.jpg | Using column subtraction, subtract the 1s. Then subtract the 10s.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_104.jpg |
| **Subtracting a  2-digit number with exchange** |  | Exchange 1 ten for 10 ones. Then subtract the 1s. Then subtract the 10s.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_105.jpg | Using column subtraction, exchange 1 ten for 10 ones. Then subtract the 1s. Then subtract the 10s.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_106.jpg |
| **Year 2**  **Multiplication** |  |  |  |
| **Equal groups and repeated addition** | Recognise equal groups and write as repeated addition and as multiplication.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_107.jpg  *3 groups of 5 chairs*  *15 chairs altogether* | Recognise equal groups using standard objects such as counters and write as repeated addition and multiplication.  A group of yellow circles  Description automatically generated  *3 groups of 5*  *15 in total* | Use a number line and write as repeated addition and as multiplication.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_109.jpg  *5 + 5 + 5 = 15*  *3 × 5 = 15* |
| **Using arrays to represent multiplication and support understanding** | Understand the relationship between arrays, multiplication and repeated addition.  A group of different colored shirts  Description automatically generated  *4 groups of 5* | Understand the relationship between arrays, multiplication and repeated addition.  A row of red and yellow circles  Description automatically generated  *4 groups of 5 … 5 groups of 5* | Understand the relationship between arrays, multiplication and repeated addition.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_112.jpg  *5 × 5 = 25* |
| **Understanding commutativity** | Use arrays to visualise commutativity.  A chocolate bar with squares  Description automatically generated  *I can see 6 groups of 3.*  *I can see 3 groups of 6.* | Form arrays using counters to visualise commutativity. Rotate the array to show that orientation does not change the multiplication.  A blue circles in a row  Description automatically generated with medium confidence  *This is 2 groups of 6 and also 6 groups of 2.* | Use arrays to visualise commutativity.  A white background with black and green objects  Description automatically generated with medium confidence  *4 + 4 + 4 + 4 + 4 = 20*  *5 + 5 + 5 + 5 = 20*  *4 × 5 = 20 and 5 × 4 = 20* |
| **Learning ×2, ×5 and ×10 table facts** | Develop an understanding of how to unitise groups of 2, 5 and 10 and learn corresponding times-table facts.  A group of yellow smiley faces  Description automatically generated  *3 groups of 10 … 10, 20, 30*  *3 × 10 = 30* | Understand how to relate counting in unitised groups and repeated addition with knowing key times-table facts.  A diagram of a number line  Description automatically generated  *10 + 10 + 10 = 30*  *3 × 10 = 30* | Understand how the times-tables increase and contain patterns.  A math worksheet with numbers  Description automatically generated  *5 × 10 = 50*  *6 × 10 = 60* |
| **Year 2**  **Division** |  |  |  |
| **Sharing equally** | Start with a whole and share into equal parts, one at a time.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_119.jpg  *12 shared equally between 2.  They get 6 each.*  Start to understand how this also relates to grouping. To share equally between 3 people, take a group of 3 and give 1 to each person. Keep going until all the objects have been shared  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_122.jpg  *15 shared equally between 3.  They get 5 each.* | Represent the objects shared into equal parts using a bar model.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_120.jpg  *20 shared into 5 equal parts.*  *There are 4 in each part.* | Use a bar model to support understanding of the division.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_121.jpg  *18 ÷ 2 = 9* |
| **Grouping equally** | Understand how to make equal groups from a whole.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_123.jpg  *8 divided into 4 equal groups.*  *There are 2 in each group.* | Understand the relationship between grouping and the division statements.  A row of blue dots  Description automatically generated | Understand how to relate division by grouping to repeated subtraction.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_125.jpg  *12 divided into groups of 3.*  *12 ÷ 3 = 4*  *There are 4 groups.* |
| **Using known times-tables to solve divisions** | Understand the relationship between multiplication facts and division.  A red car with black wheels  Description automatically generated with medium confidence  *4 groups of 5 cars is 20 cars in total.*  *20 divided by 4 is 5.* | Link equal grouping with repeated subtraction and known times-table facts to support division.  A line of yellow dots  Description automatically generated  *40 divided by 4 is 10.*  Use a bar model to support understanding of the link between times-table knowledge and division.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_128.jpg | Relate times-table knowledge directly to division.  C:\Users\Julie\Documents\0_JUST CONTENT\Power maths\Calculator policy\TO DO\artworks\aw_129.jpg  *I know that 3 groups of 10 makes 30, so I know that 30 divided by 10 is 3.*  *3 × 10 = 30 so 30 ÷ 10 = 3* |