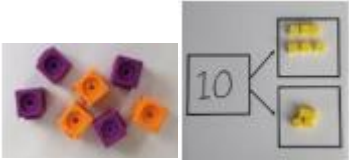
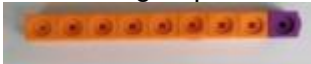
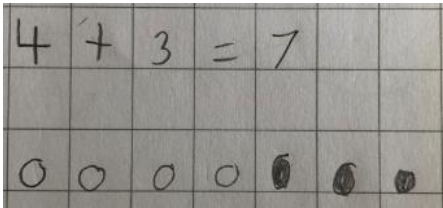
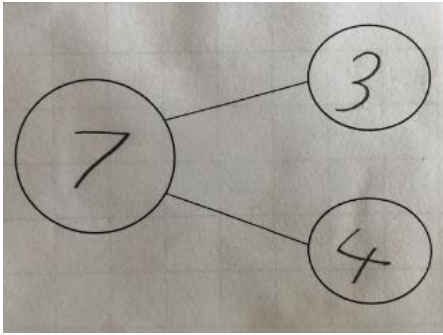
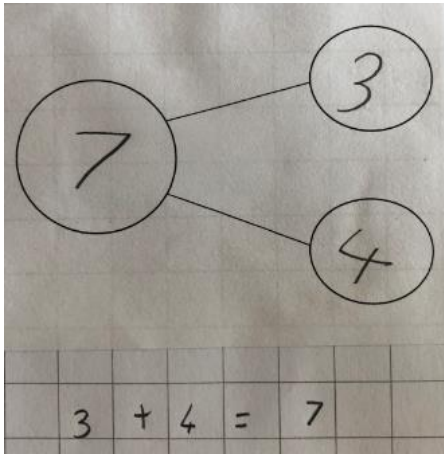
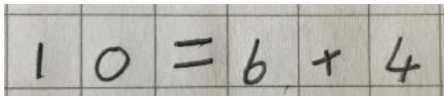
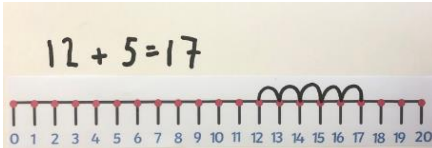


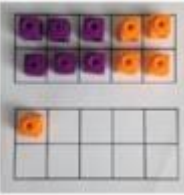
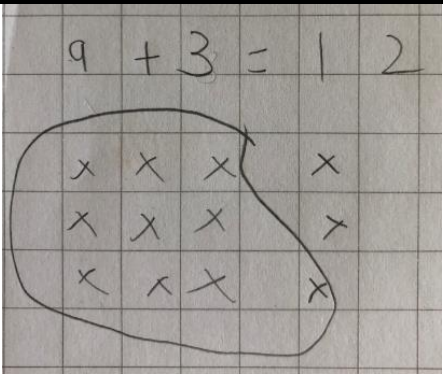
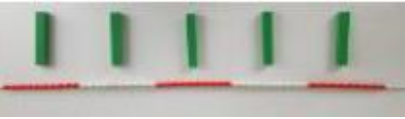
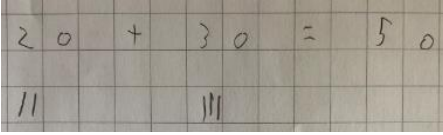
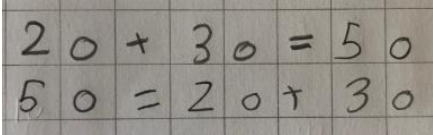
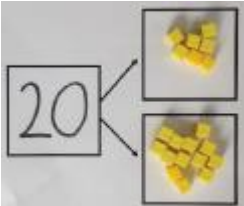
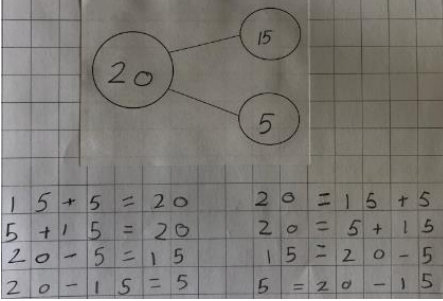
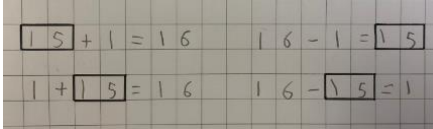


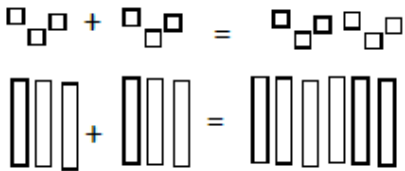
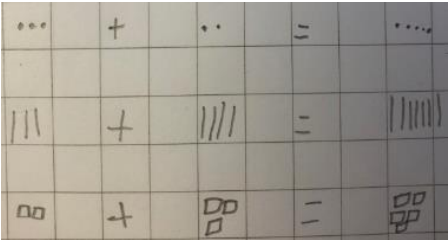
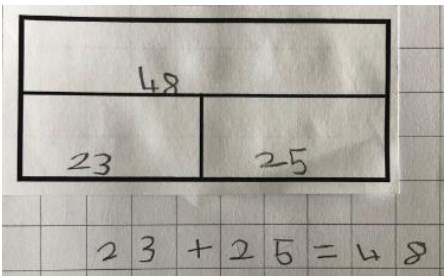
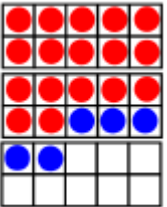
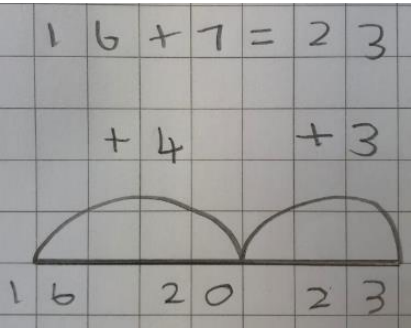
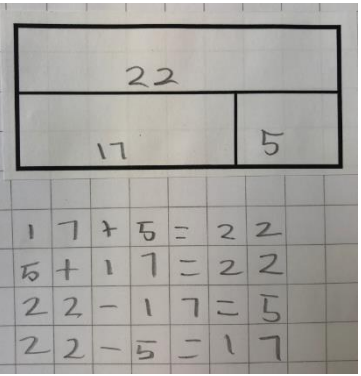
# Ryton Federation Calculation Policy

Sarah Williams CWL  
[Date]

# Year 1 Addition

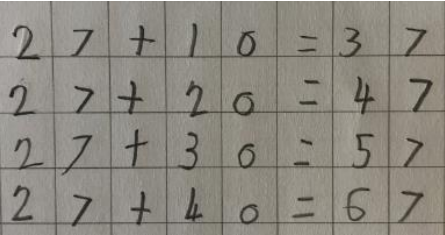
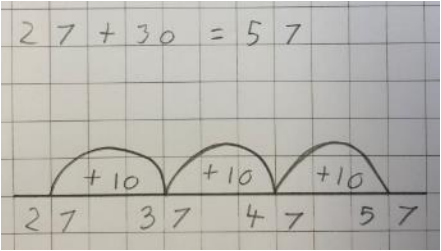
| Objective and strategy                                | Concrete                                                                                                                                                                                                                                                                                                                                                | Pictorial                                                                                                                                                                                                                                     | Abstract                                                                                                                                                                                                                                   | Vocabulary                                                                                                                                                                                                                                                              |
|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Combining two parts to make a whole: part-whole model | <p>Use part whole model.</p>   <p>Use cubes to add two numbers together as a group or in a bar.</p>  | <p>Use pictures to add two numbers together as a group or in a bar.</p>   | <p>Use the part-part whole diagram to move into the abstract.</p>   | <p><b>Addition</b></p> <p>Add<br/>More<br/>And<br/>Make<br/>Sum<br/>Total<br/>Altogether<br/>Double<br/>Near double<br/>Half<br/>Halve<br/>One more, two more...ten more<br/>How many more to make...?<br/>How many more is ... than ...?<br/>How much more is ...?</p> |
| Starting at the bigger number and counting on         | <p>Start with the larger number on the bead string and then count on the smaller number one by one to find the answer.</p>                                                                                                                                           | <p>Start with the larger number on the number line and count on in ones or in one jump to find the answer.</p>                                            | <p>Place the larger number in your head and count on the smaller number to find the answer</p>                                                                                                                                             |                                                                                                                                                                                                                                                                         |
| Regrouping to make 10                                 | <p>Start with the bigger number and use the smaller number to make 10.</p>                                                                                                                                                                                                                                                                              | <p>Use pictures or a number line. Regroup or partition the smaller number using the part part whole model to make 10</p>                                                                                                                      | <p><math>7 + 4 = 11</math></p>                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                         |

| <p>(This is an essential skill for column addition further up the school).</p> |  <p>Use tens frames</p>  |     | <p>If I am at seven, how many more do I need to make 10? How many more do I add on now?</p>                                                           |                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Represent and use number bonds and related subtraction facts within 20</p>  | <p>2 more than 5</p>                                                                                      |    | <p>Emphasis should be on the language</p> <p>"1 more than 5 is equal to 6."<br/>         "2 more than 5 is 7."<br/>         "8 is 3 more than 5."</p> |                                                                                                                                                                                                                                        |
| <p>Year 2 Addition</p>                                                         |                                                                                                                                                                                            |                                                                                      |                                                                                                                                                       |                                                                                                                                                                                                                                        |
| Objective and strategy                                                         | Concrete                                                                                                                                                                                   | Pictorial                                                                            | Abstract                                                                                                                                              | Vocabulary                                                                                                                                                                                                                             |
| <p>Adding multiples of ten</p>                                                 | <p>50 = 30 + 20</p>                                                                                      |   |                                                                   | <p>Addition<br/>         Add<br/>         More<br/>         And<br/>         Make<br/>         Sum</p>                                                                                                                                 |
| <p>Use known number facts</p> <p>Part-part whole model</p>                     | <p>Children explore ways of making numbers to and within 20.</p>                                        |  |                                                                  | <p>Total<br/>         Altogether<br/>         Double<br/>         Near double<br/>         Half<br/>         Halve<br/>         One more, two more...ten more,<br/> <b>one hundred more</b><br/>         How many more to make...?</p> |

|                                    |                                                                                                                                                                                  |                                                                                                                                       |                                                                                                                                          |                                                                       |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
|                                    |                                                                                                                                                                                  | Also with equals sign at the beginning.                                                                                               |                                                                                                                                          | How many more is ... than ...?<br>How much more is ...?               |
| Using known facts                  |                                                                                                 | Children draw own representations of H, T and O<br> | $3 + 4 = 7$<br><br><i>leads to</i><br>$30 + 40 = 70$<br><br><i>leads to</i><br>$300 + 400 = 700$                                         | Equals<br>Is the same as<br>Number bonds/pairs/facts<br>Tens boundary |
| Bar model                          | <br>$3 + 4 = 7$                                                                                 | <br>$7 + 3 = 10$                                    |                                                       |                                                                       |
| Adding a two digit number and ones | Use tens frame to make 10 and then explore the pattern.<br><br>$17 + 5 = 22$<br>$27 + 5 = 32$ | Use number line to model<br>                      | Children use knowledge of composition of number<br> |                                                                       |

Add a 2 digit number and tens

Explore that the ones digit won't change.

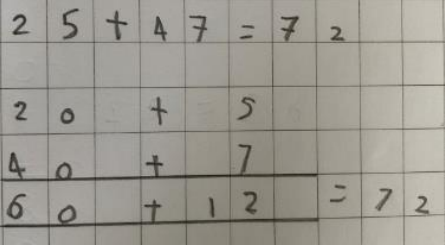
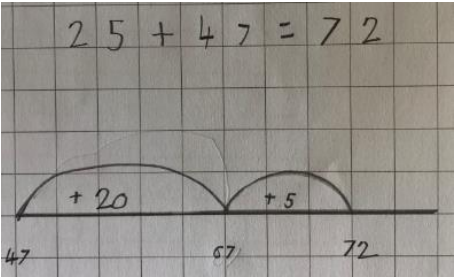


Add two 2-digit numbers

Model using dienes



Use number line and bridging ten methods if necessary.

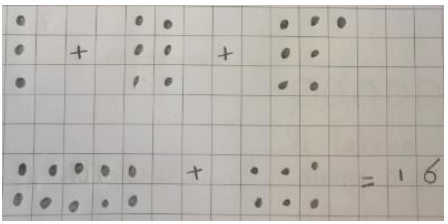


Add three 1 digit numbers

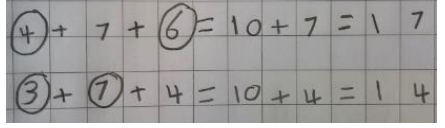
Combine to make 10 first if possible.



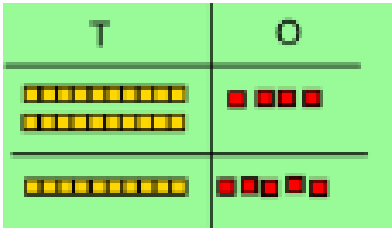
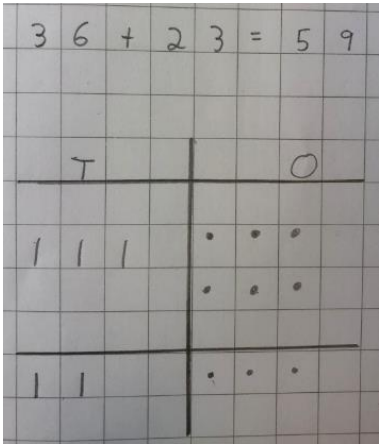
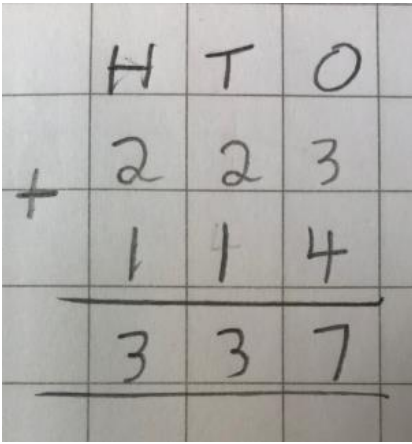
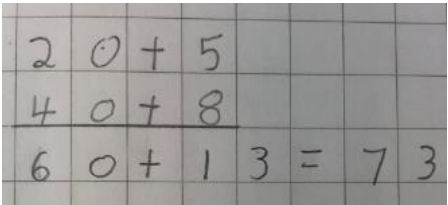
Regroup and draw representations.

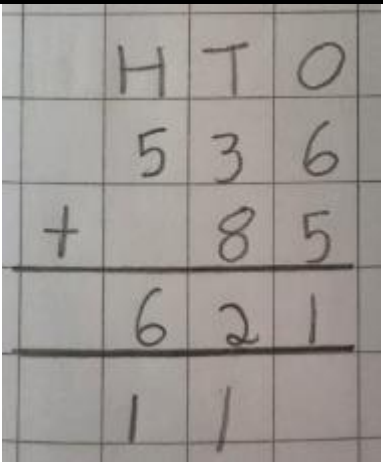


Combine the two numbers that make/bridge the ten then add on the remaining number.

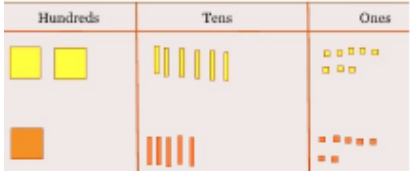
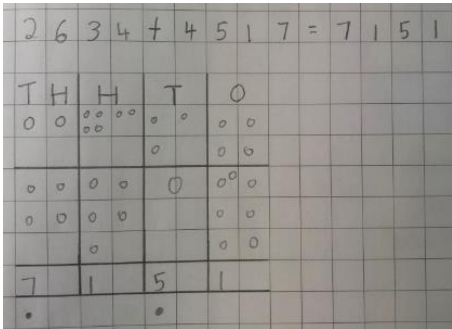
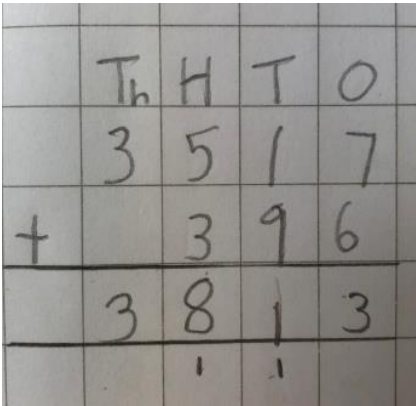


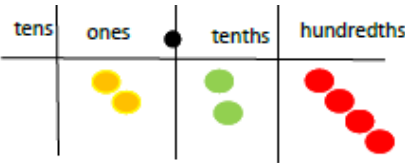
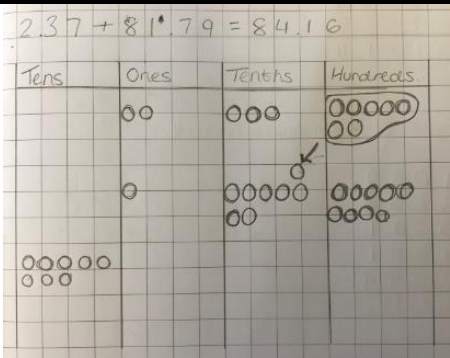
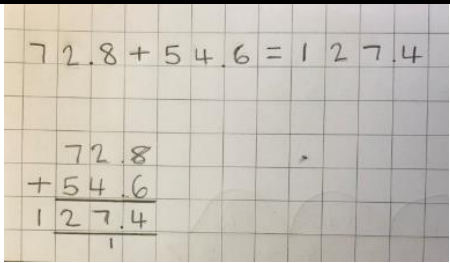
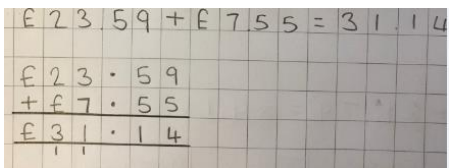
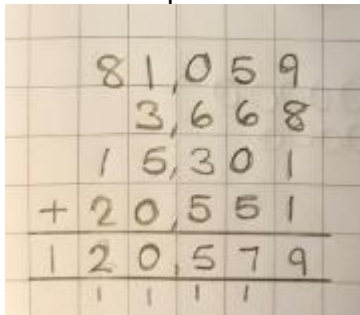
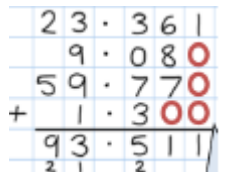
# Year 3 Addition

| Objective and strategy          | Concrete                                                                                                     | Pictorial                                                                                                                                         | Abstract                                                                                                                                                                | Vocabulary                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Column addition – no regrouping | <p>Model using dienes.</p>  | <p>Children move to drawing the dienes using a tens frame.</p>  | <p>Add the ones first, then the tens and then the hundreds.</p>                      | <p>Addition</p> <p>Add</p> <p>More</p> <p>And</p> <p>Make</p> <p>Sum</p> <p>Total</p> <p>Altogether</p> <p>Double</p> <p>Near double</p> <p>Half</p> <p>Halve</p> <p>One more, two more...ten more, one hundred more</p> <p>How many more to make...?</p> <p>How many more is ... than ...?</p> <p>How much more is ...?</p> <p>Equals</p> <p>Is the same as</p> <p>Number bonds/pairs/facts</p> <p>Tens boundary/hundreds boundary</p> |
| Column addition with regrouping | <p>Model exchanging 10 ones</p>                                                                              | <p>Children can draw a representation of the grid to further support their understanding, carrying the regrouped ten underneath the line</p>      | <p>Start by partitioning the numbers before formal column to show the exchange</p>  |                                                                                                                                                                                                                                                                                                                                                                                                                                         |

|  |  |  |                                                                                    |  |
|--|--|--|------------------------------------------------------------------------------------|--|
|  |  |  |  |  |
|  |  |  |                                                                                    |  |

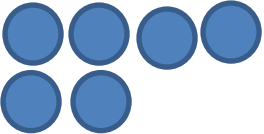
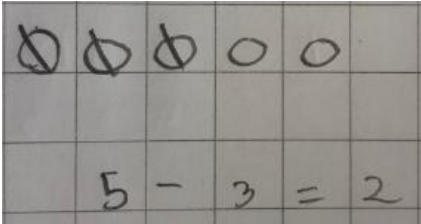
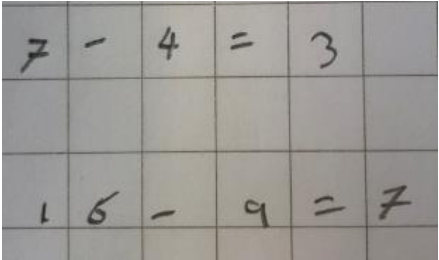
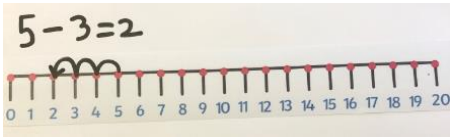
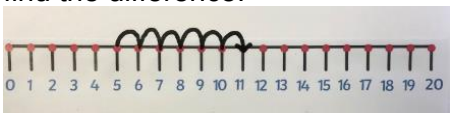
### Year 4-6 Addition

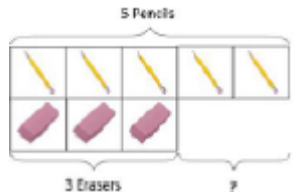
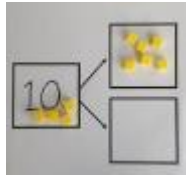
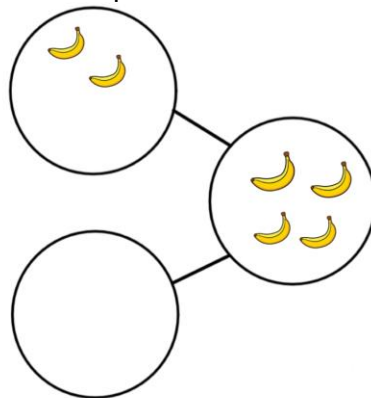
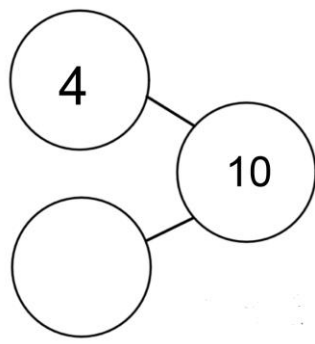
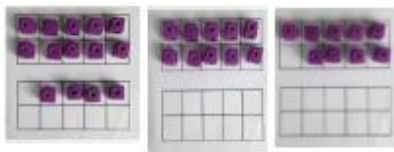
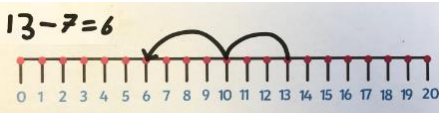
| Objective and strategy               | Concrete                                                                                                                                                            | Pictorial                                                                                                                                | Abstract                                                                                                                                                                                           | Vocabulary                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Y4 – Add numbers with up to 4 digits | <p>Children continue to use dienes or move onto place value counters to add.</p>  | <p>Draw representations using a place value grid</p>  | <p>Continue from previous work to exchange to hundreds as well as tens.<br/>Relate to money and measures.</p>  | <p>Addition<br/>Add<br/>More<br/>And<br/>Make<br/>Sum<br/>Total<br/>Altogether<br/>Double<br/>Near double<br/>Half<br/>Halve<br/>One more, two more...ten more, one hundred more<br/>How many more to make...?<br/>How many more is ... than ...?<br/>How much more is ...?<br/>Equals<br/>Is the same as<br/>Number bonds/pairs/facts</p> |
| Y5 – Add numbers with                | As Year 4 – introduce decimal place value counters and model exchange for addition.                                                                                 |                                                                                                                                          |                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                            |

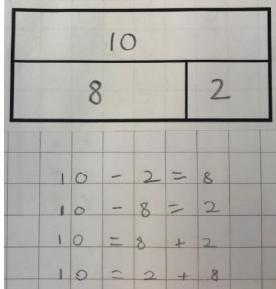
|                                                                                                                                                 |                                                                                   |                                                                                   |                                                                                                                                                                                                                    |                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| <p>more than 4 digits.</p> <p>Add decimals with 2 decimal places, including money</p>                                                           |  |  | <br>                                          | <p>Tens boundary/hundreds boundary/<b>ones boundary</b>/tenths boundary<br/>Inverse</p> |
| <p>Y6 – Add several numbers of increasing complexity.</p> <p>Include adding money, measures and decimals with different numbers of decimals</p> | <p>As Y5</p>                                                                      | <p>As Y5</p>                                                                      | <p>Insert zeros for place holders</p> <br> |                                                                                         |



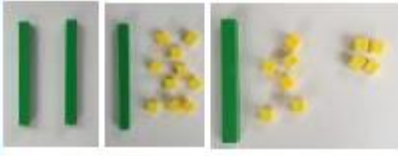
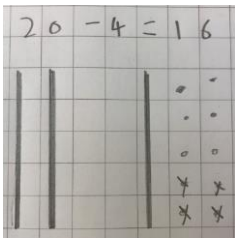
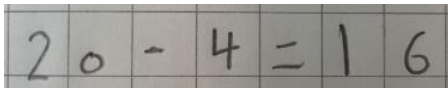
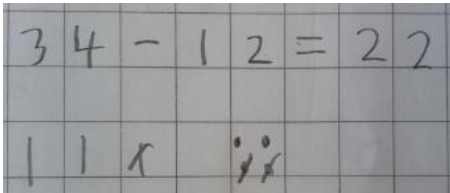
# Year 1 Subtraction

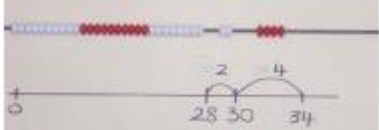
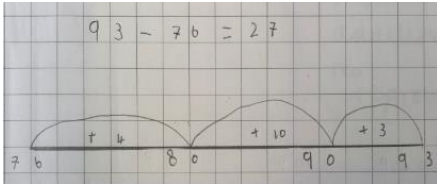
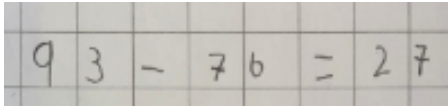
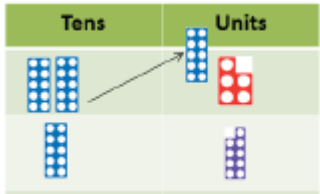
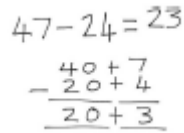
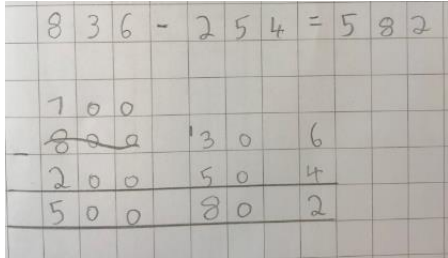
| Objective and strategy | Concrete                                                                                                                                                                                                                                                                                             | Pictorial                                                                                                                                        | Abstract                                                                                               | Vocabulary                                                                                                                                                                                                       |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Taking away ones       | <p>Use physical objects (counters, cubes etc) to show how objects can be taken away.</p>  $6 - 4 = 2$                                                                                                               | <p>Cross out objects to show what has been taken away.</p>     |                     | <p>Subtract<br/>Take away<br/>How many are left/left over?<br/>How many have gone?<br/>Ones less, two less, ten less...<br/>How many fewer is ... than ...?<br/>How much less is ...?<br/>Difference between</p> |
| Counting back          | <p>Move objects away from the group counting backwards.</p>   <p>Move the beads along the bead string as you count backwards,</p> | <p>Count back in ones using a number line.</p>                 | <p>Put 13 in your head. Count back 4. What number are you at?</p>                                      |                                                                                                                                                                                                                  |
| Find the difference    | <p>Compare objects and amounts.</p>  <p>7 'Seven is 3 more than four'</p> <p>4 'I am 2 years older than my sister'</p> <p>Use objects to create bar models</p>                                                    | <p>Count on using a number line to find the difference.</p>  | <p>Sophie has 12 football cards. Her sister has 5. How many more does Sophie have than her sister?</p> |                                                                                                                                                                                                                  |

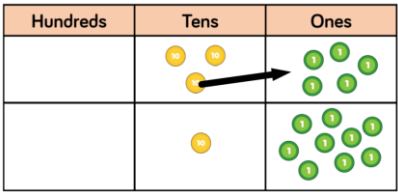
|                                                                                                |                                                                                                                                                                                      |                                                                                                                                                                                   |                                                                                                                                                    |  |
|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|--|
|                                                                                                |                                                                                                     |                                                                                                                                                                                   |                                                                                                                                                    |  |
| Represent and use number bonds and related subtraction facts within 20 (part-part whole model) | <p>Link to addition. Use the PPW model to model the inverse.</p>                                    | <p>Use pictorial representation to show the part.</p>                                           | <p>Move to using numbers within the part-part whole model.</p>  |  |
| Make 10                                                                                        | <p>14-9</p>  <p>Make 14 on the tens frame. Take 4 away to make 10, then take 5 away to make 9.</p> | <p>13-7</p>  <p><math>13 - 7 = 6</math></p> <p>Jump back 3 to 10, then jump back another 4.</p> | <p>16 - 8</p> <p>How many do we need to take away to make 10? How many do we need to take away after?</p>                                          |  |
| Bar model                                                                                      | <p><math>5 - 2 = 3</math></p> <p>Using actual objects</p>                                         | <p><math>5 - 2 = 3</math></p> <p>Using images</p>                                             |                                                                                                                                                    |  |

|  |  |  |                                                                                     |  |
|--|--|--|-------------------------------------------------------------------------------------|--|
|  |  |  |  |  |
|  |  |  |                                                                                     |  |

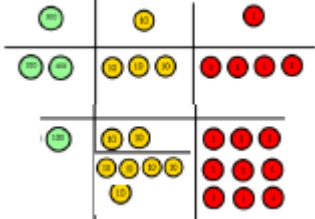
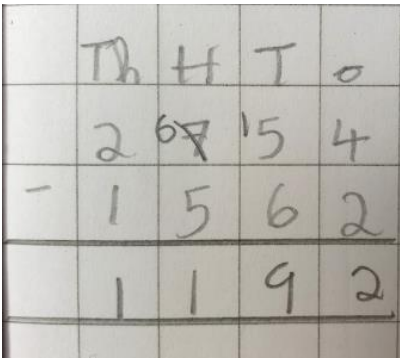
Year 2 **Subtraction**

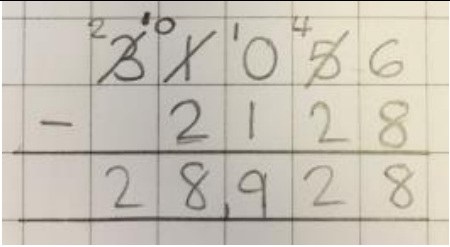
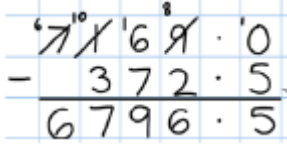
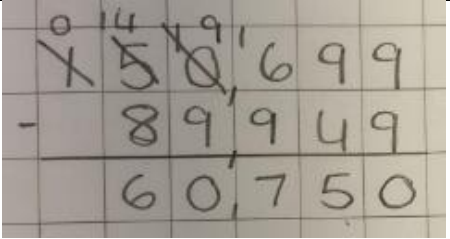
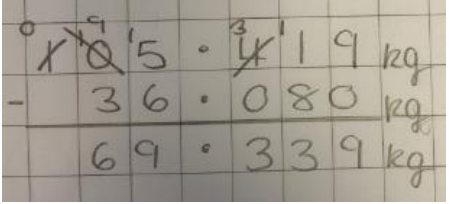
| Objective and strategy                      | Concrete                                                                                                                                                                                           | Pictorial                                                                                                                                                              | Abstract                                                                                               | Vocabulary                                                                                                                                                                                                                           |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Regroup a ten into ten ones                 | <p>Use a place value chart to show how to change a ten into ten ones</p>                                          | <p>20-4</p>                                                                          | <p>20 - 4 = 16</p>  | <p>Subtract</p> <p>Take away</p> <p>How many are left/left over?</p> <p>How many have gone?</p> <p>Ones less, two less, ten less, <b>one hundred less...</b></p> <p>How many fewer is ... than ...?</p> <p>How much less is ...?</p> |
| Partitioning to regroup without subtracting | <p>34-13 = 21</p>  <p>Use the dienes to show how to partition the number when subtracting without regrouping</p> | <p>Children draw representations of dienes and cross off.</p> <p>43 - 21 = 22</p>  | <p>43 - 21 = 22</p>                                                                                    | <p>Difference between</p> <p>Equals</p> <p>Is the same as</p> <p>Number bonds/pairs/facts</p> <p><b>Tens boundary</b></p>                                                                                                            |

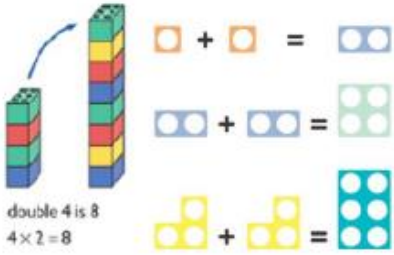
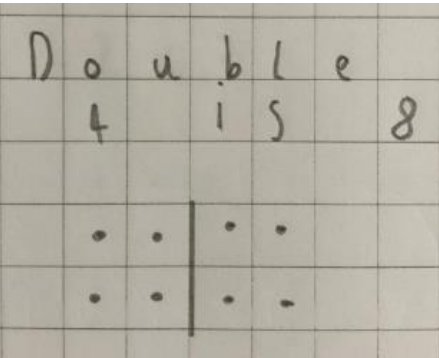
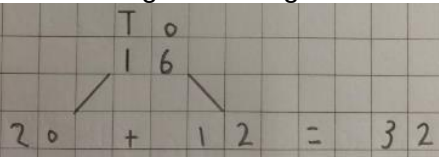
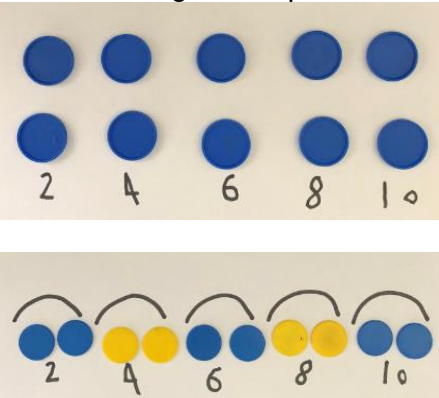
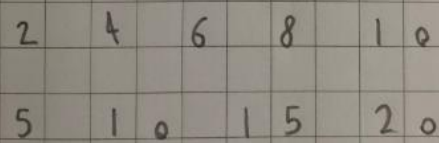
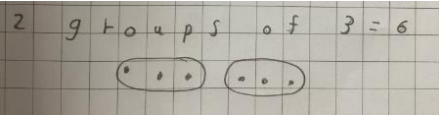
| <p>Make 10 strategy</p> <p><i>(Progression should be crossing one ten, crossing more than one ten, crossing the hundreds)</i></p> | <p>34 – 28</p>  <p>Use the bead string to model counting to the next 10 and the rest.</p> | <p>Use the number line to count onto the next 10 and the rest.</p>  |                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Year 3 <b>Subtraction</b>                                                                                                         |                                                                                                                                                                            |                                                                                                                                                       |                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                  |
| Objective and strategy                                                                                                            | Concrete                                                                                                                                                                   | Pictorial                                                                                                                                             | Abstract                                                                                                                                                                        | Vocabulary                                                                                                                                                                                                                                                                                                                                                                       |
| <p>Column subtraction without regrouping</p>                                                                                      | <p>Use Base 10 or Numicon to model.</p> <p>47 – 32</p>                                   | <p>Draw representations to support understanding</p>               |                                                                                              | <p>Subtract</p> <p>Take away</p> <p>How many are left/left over?</p> <p>How many have gone?</p> <p>Ones less, two less, ten less, one hundred less...</p> <p>How many fewer is ... than ...?</p> <p>How much less is ...?</p> <p>Difference between</p> <p>Equals</p> <p>Is the same as</p> <p>Number bonds/pairs/facts</p> <p>Tens boundary</p> <p><b>Hundreds boundary</b></p> |
| <p>Column subtraction with regrouping</p>                                                                                         | <p>Begin with Base 10 or Numicon then move to place value counters modelling the exchange of a ten into ten ones.</p> <p>35 – 19</p>                                       | <p>Children may draw Base 10 or place counters and cross them off.</p>                                                                                | <p>Begin by partitioning into place value columns.</p>  <p>Then move to formal method.</p> |                                                                                                                                                                                                                                                                                                                                                                                  |

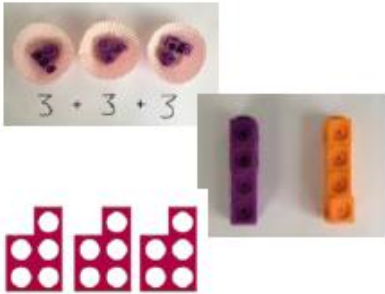
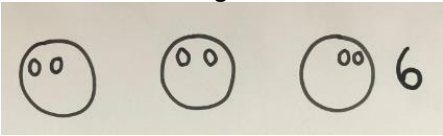
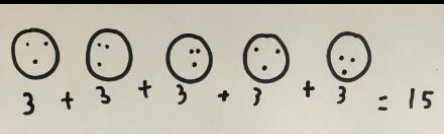
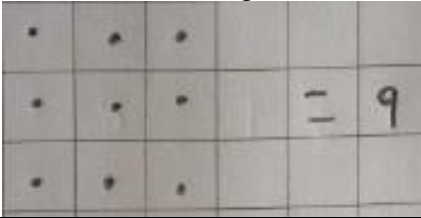
|  |                                                                                   |                                                                                    |                                                                                     |  |
|--|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--|
|  |  |  |  |  |
|  |                                                                                   |                                                                                    |                                                                                     |  |

Year 4-6 **Subtraction**

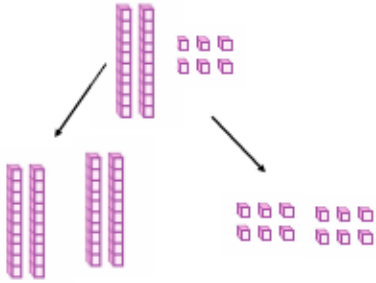
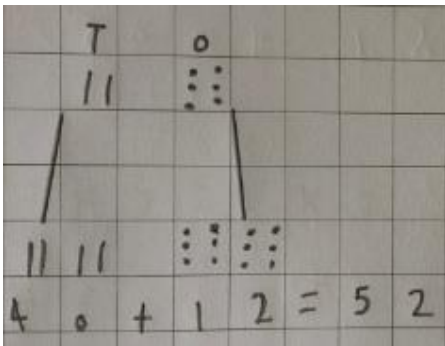
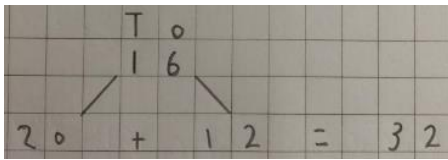
| Objective and strategy                                                                                                                            | Concrete                                                                                                                                                                                             | Pictorial                                                                                                                                                   | Abstract                                                                             | Vocabulary                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Subtracting tens and ones.</p> <p>Year 4 subtract with up to 4 digits</p> <p><i>Introduce decimal subtraction through context of money</i></p> | <p>234 – 179</p> <p>Model process of exchange using Base 10 or Numicon and then move to place value counters.</p>  | <p>Children to draw the place value counters and show the exchange.</p>  |  | <p>Subtract</p> <p>Take away</p> <p>How many are left/left over?</p> <p>How many have gone?</p> <p>Ones less, two less, ten less, one hundred less...</p> <p>How many fewer is ... than ...?</p> <p>How much less is ...?</p> <p>Difference between</p> <p>Equals</p> <p>Is the same as</p> <p>Number bonds/pairs/facts</p> <p>Missing number</p> <p>Tens boundary, hundreds boundary, <b>ones boundary, tenths boundary</b></p> <p>Inverse</p> |
| Year 5 subtract with at least 4 digits, including measures and money.                                                                             | As Year 4                                                                                                                                                                                            | As Year 4                                                                                                                                                   |                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

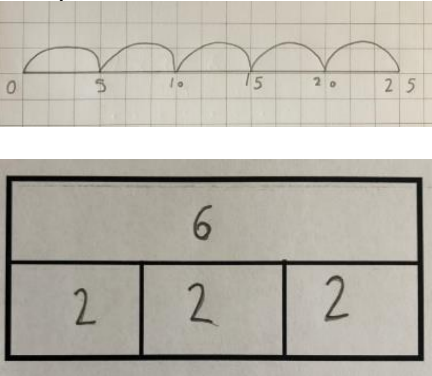
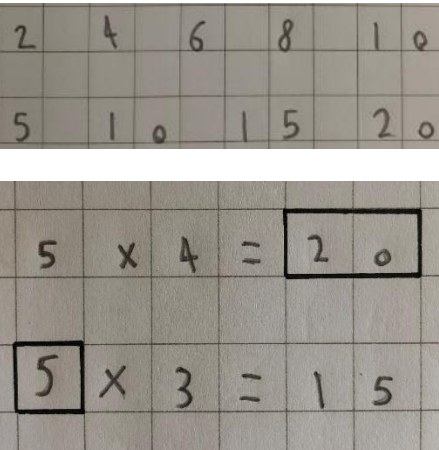
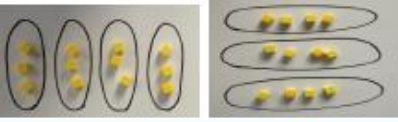
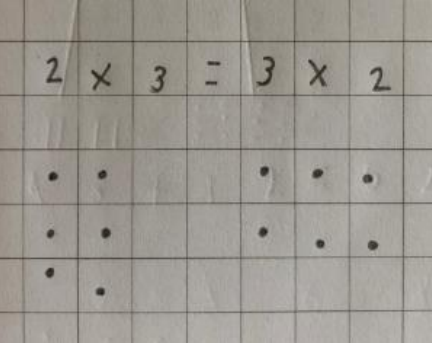
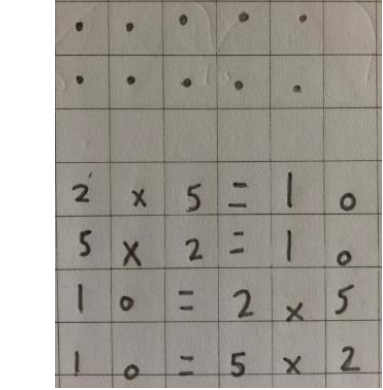
|                                                                                                                                  |                 |                  |                                                                                                                                                                                                                                              |                   |
|----------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| <p>Subtract with decimal values, including mixtures of integers and decimals. Include where the decimal needs to be aligned.</p> |                 |                  |  <p>Recognise the use of zero as a place holder.<br/>£7169 - £372</p>  |                   |
| <p>Year 6<br/>Subtract with increasingly large and more complex numbers and decimal values</p>                                   |                 |                  |                                                                       |                   |
| <p>Year 1 <b>Multiplication</b></p>                                                                                              |                 |                  |                                                                                                                                                                                                                                              |                   |
| <p>Objective and strategy</p>                                                                                                    | <p>Concrete</p> | <p>Pictorial</p> | <p>Abstract</p>                                                                                                                                                                                                                              | <p>Vocabulary</p> |

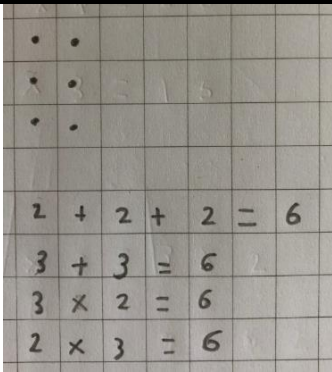
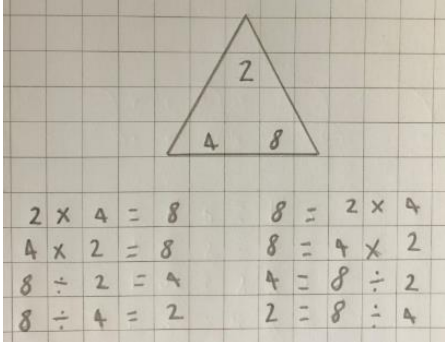
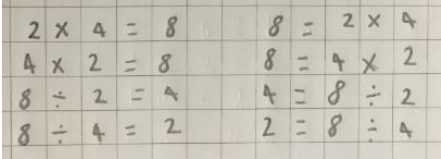
|                                                    |                                                                                                                                                                                                    |                                                                                                                                                         |                                                                                                                                                                              |                                                                                                                      |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| <p>Doubling</p>                                    | <p>Use practical activities using manipulatives including cubes and Numicon to demonstrate doubling.</p>          | <p>Draw pictures to show how to double numbers.</p>                   | <p>Partition a number and then double each part before recombining it back together.</p>  | <p> multiplication<br/> multiply<br/> multiplied by<br/> multiple<br/> doubling<br/> array<br/> number patterns </p> |
| <p>Counting in multiples</p>                       | <p>Count the groups as children are skip counting. Children may use their fingers as they are skip counting.</p>  | <p>Children make representations to show counting in multiples.</p>  | <p>Count in multiples of a number aloud. Write sequences with multiples of numbers.</p>   |                                                                                                                      |
| <p>Making equal groups and counting the totals</p> | <p>Use manipulatives to create equal groups.</p>                                                                | <p>Draw and make representations. 2 groups of 3 = 6</p>             | <p><math>2 \times 4 = 8</math></p>                                                                                                                                           |                                                                                                                      |
| <p>Repeated addition</p>                           | <p>Use different objects to add equal groups.</p>                                                                                                                                                  | <p>Use pictorial representations, including number lines, to solve problems.</p>                                                                        | <p>Write addition sentences to describe objects and pictures.</p>                                                                                                            |                                                                                                                      |

|                      |                                                                                                                                          |                                                                                                                                                               |                                                                                    |  |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--|
|                      |                                                         | <p>e.g. There are 2 sweets in each bag. How many sweets are in 3 bags?</p>  |  |  |
| Understanding arrays | <p>Use objects laid out in arrays to find answers.</p>  | <p>Draw representations of arrays to show understanding.</p>                | $2 \times 3 = 6$<br>$2 \times 5 = 10$                                              |  |
|                      |                                                                                                                                          |                                                                                                                                                               |                                                                                    |  |

### Year 2 Multiplication

| Objective and strategy   | Concrete                                                                                                                                                        | Pictorial                                                                                                                                                    | Abstract                                                                                                                                                                                                        | Vocabulary |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Doubling                 | <p>Model doubling using dienes and place value counters.</p>  $40 + 12 = 52$ | <p>Draw pictures to represent how to double numbers.</p>  $40 + 12 = 52$ | <p>Partition a number then double each part before recombining it.</p>  $20 + 20 = 40$<br>$20 + 20 = 40$<br>$40 + 40 = 80$ |            |
| Counting in multiples of | Count the groups as children are skip counting.                                                                                                                 | Number lines and bar models should be used to show                                                                                                           | Count in multiples of a number aloud.                                                                                                                                                                           |            |

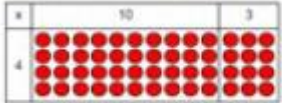
|                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                              |                                                                                                                                                                   |                                                                                                                                                                                                                                                       |
|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>2,5 and 10 from zero (repeated addition)</p> | <p>Use counting sticks in class</p>                                                                                                                                                                                                                                                                                               | <p>representation of counting in multiples.</p>                                                            | <p>Write sequences with multiples of numbers.</p>                              | <p>multiplication<br/>multiply<br/>multiplied by<br/>multiple<br/>groups of<br/>times<br/>once, twice, three times ... ten times<br/>repeated addition<br/>equal groups of<br/>doubling<br/>halving<br/>array<br/>row, column<br/>number patterns</p> |
| <p>Multiplication is commutative</p>            | <p>Create arrays using counters, cubes or Numicon.</p>  <p>Pupils should understand that arrays can represent different equations and that, as multiplication is commutative, the order of the multiplication does not affect the answer.</p>  | <p>Use pictorial representations of arrays to show different calculations and explore commutativity.</p>  |  <p>Use an array to write multiplication and reinforce repeated addition.</p> | <p>multiplication table<br/>multiplication fact, division fact</p>                                                                                                                                                                                    |

|                                                                                                                                      |                                                                                   |                                                                                                                                                           |                                                                                                                                      |            |
|--------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|------------|
|                                                                                                                                      |                                                                                   |                                                                                                                                                           |                                                    |            |
| <p>Using the inverse</p> <p><i>This should be taught alongside division, so pupils learn how they work alongside each other.</i></p> |  |  <p>Ensure number sentences with = at the start and end are taught.</p> | <p>Show all 8 related fact family sentences.</p>  |            |
|                                                                                                                                      |                                                                                   |                                                                                                                                                           |                                                                                                                                      |            |
| Year 3 Multiplication                                                                                                                |                                                                                   |                                                                                                                                                           |                                                                                                                                      |            |
| Objective and strategy                                                                                                               | Concrete                                                                          | Pictorial                                                                                                                                                 | Abstract                                                                                                                             | Vocabulary |

Grid method

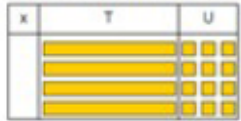
*Make sure that other methods for multiplication are reinforced e.g multiplying by 4 = doubling and doubling again or multiplying by 9 by multiplying by 10 and subtracting.*

Show the links with arrays to first introduce the grid method.



4 rows of 10  
4 rows of 3

Move onto Base ten to move towards a more compact method.



4 rows of 13

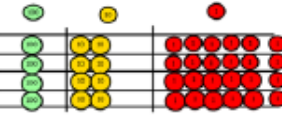
Move onto Place Value counters to show how we are finding groups of a number. We are multiplying by 4 so we need 4 rows.

Move on to place value counters to show how we are finding groups of a number. We are multiplying by 4 so we need 4 rows



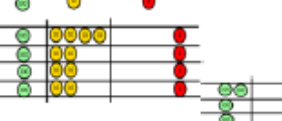
Calculations  
4 x 126

Fill each row with 126.



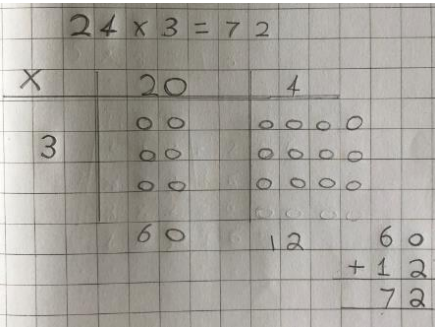
Calculations  
4 x 126

Add up each column, starting with the ones, making exchanges where required.



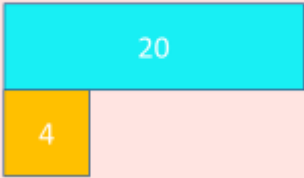
Calculations  
4 x 126

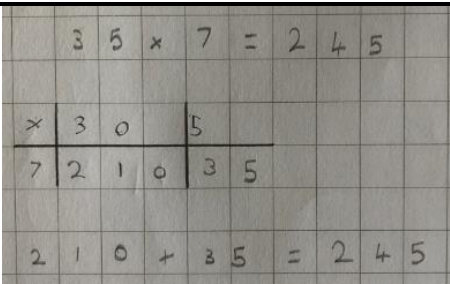
Children can represent their work with concrete resources in a pictorial way that they understand.



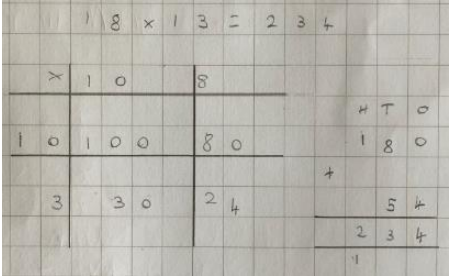
Bar models can be used to explore missing numbers.

4 x  = 20





Then once secure moving onto



multiplication

multiply

multiplied by

multiple, factor

groups of

times

product

once, twice, three times ... ten times

repeated addition

equal groups of

doubling

halving

array

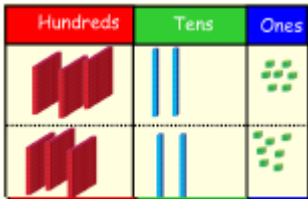
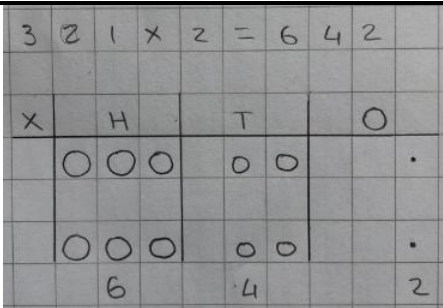
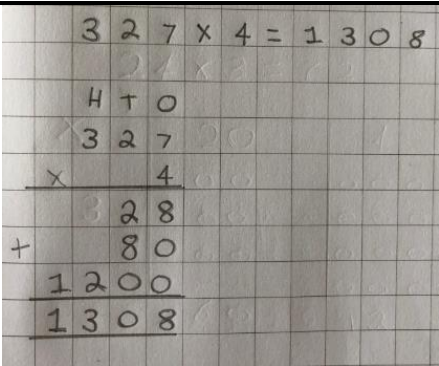
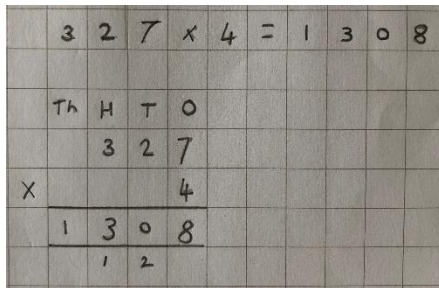
row, column

number patterns

multiplication table

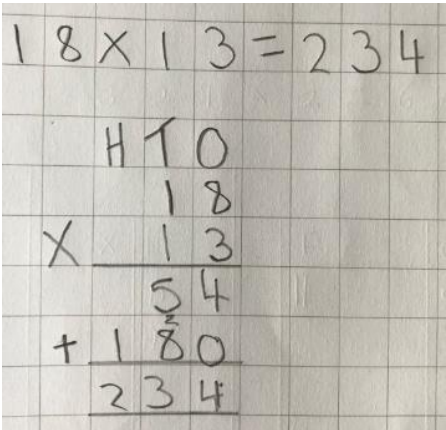
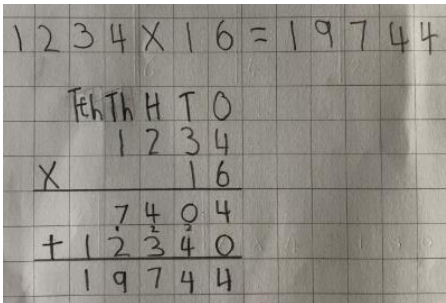
multiplication fact, division fact

## Year 4 Multiplication

| Objective and strategy                                                        | Concrete                                                                                                                                                                                                                                                                                                                                                                                                  | Pictorial                                                                          | Abstract                                                                                                                                                                                                          | Vocabulary                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Grid method<br>recap 2 digit<br>by 1 digit<br><br>Then 3 digits<br>by 1 digit | Use Place Value counters as in Y3                                                                                                                                                                                                                                                                                                                                                                         | As Y3                                                                              | As Y3                                                                                                                                                                                                             | multiplication<br>multiply<br>multiplied by<br>multiple, factor<br>groups of<br>times<br>product<br>once, twice, three times ... ten times<br>repeated addition<br>doubling<br>array<br>row, column<br>number patterns<br>multiplication table<br>multiplication fact, division fact |
| Column multiplication                                                         | Children can continue to be supported by Place Value counters at the multiplication stage. It is important at this stage that the multiply the ones first.<br><br><div style="text-align: center;"> <math>321 \times 2</math><br/>  </div><br>It is important to model the corresponding long multiplication next to it. |  | <br>This may lead to a compact method.<br> |                                                                                                                                                                                                                                                                                      |

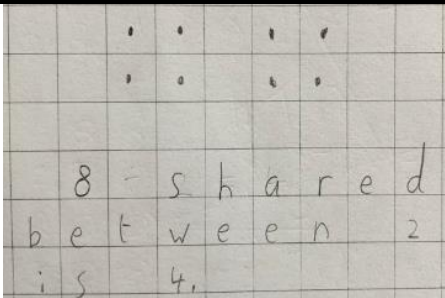
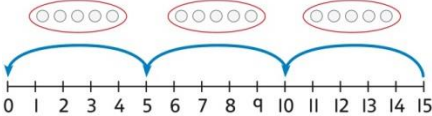
## Year 5/6 Multiplication

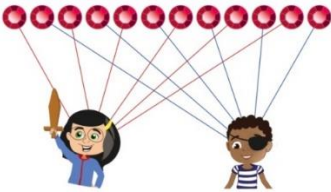
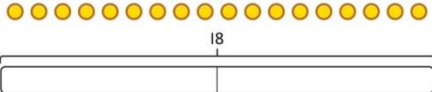
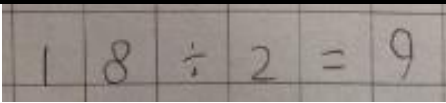
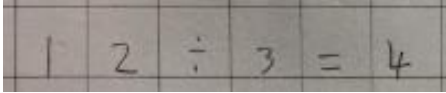
| Objective and strategy | Concrete | Pictorial | Abstract | Vocabulary |
|------------------------|----------|-----------|----------|------------|
| Column multiplication  | As Y4    | As Y4     | As Y4    |            |

|                              |                                                                               |  |                                                                                                                                                                         |                                                                                                                                                                                                                                                                                      |
|------------------------------|-------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| for 3 and 4 digit by 1 digit |                                                                               |  |                                                                                                                                                                         | multiplication<br>multiply<br>multiplied by<br>multiple, factor<br>groups of<br>times<br>product<br>once, twice, three times ... ten times<br>repeated addition<br>doubling<br>array<br>row, column<br>number patterns<br>multiplication table<br>multiplication fact, division fact |
| Column multiplication        | Manipulatives may still be used with the corresponding calculation alongside. |  |   |                                                                                                                                                                                                                                                                                      |
|                              |                                                                               |  |                                                                                                                                                                         |                                                                                                                                                                                                                                                                                      |

Year 1 Division

| Objective and strategy | Concrete                                                       | Pictorial                                            | Abstract                                                                                                                                                        | Vocabulary                                  |
|------------------------|----------------------------------------------------------------|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| Division as Sharing    | I have 10 cubes can you share them equally between two groups? | Children draw pictures or shapes to share quantities | 12 shared between 3 is 4.<br><br>There is no requirement to use the symbol for division in Y1.<br><br>This could be verbalised or written using stem sentences. | division<br>dividing<br>grouping<br>sharing |

|                        |                                                                                                                               |                                                                                                                                                                                                                                               |                                                                                                                                                                |            |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
|                        |                                              |                                                                                                                                                              |                                                                                                                                                                |            |
| Division as grouping   |  <p>Divide quantities into equal groups</p> | <p>Represent a whole and work out how many equal groups.</p>  <p><i>There are 10 in total.<br/>There are 5 in each group.<br/>There are 2 groups.</i></p> | <p>Children may relate this to counting back in steps of 2, 5 or 10.</p>  |            |
| Year 2 Division        |                                                                                                                               |                                                                                                                                                                                                                                               |                                                                                                                                                                |            |
| Objective and strategy | Concrete                                                                                                                      | Pictorial                                                                                                                                                                                                                                     | Abstract                                                                                                                                                       | Vocabulary |

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                       |                                                                                                                                                                                                                                                                                                              |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Division as sharing</p>  | <p>Start with a whole and share into equal parts, one at a time.</p>  <p><i>12 shared equally between 2. They get 6 each.</i></p> <p>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</p>   <p>They get 5  each.</p> <p><i>15 shared equally between 3. They get 5 each.</i></p> | <p>Represent the objects shared into equal parts using a bar model.</p>  <p><i>20 shared into 5 equal parts. There are 4 in each part.</i></p> <p>Use a bar model to support understanding of the division.</p>  <p><math>18 \div 2 = 9</math></p> |     | <p>division<br/>dividing, divide, divided by, divided into<br/>grouping<br/>sharing, share, share equally<br/>left, left over<br/>one each, two each, three each ... ten each<br/>group in pairs, threes ... tens<br/>equal groups of</p> <p>multiplication table<br/>multiplication fact, division fact</p> |
| <p>Division as grouping</p> | <p>Children understand how to make equal groups from a whole.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <p>Children understand the relationship between grouping and the division statements.</p>                                                                                                                                                                                                                                                                                                                              |  |                                                                                                                                                                                                                                                                                                              |



8 divided into 4 equal groups.  
There are 2 in each group.

$$12 \div 3 = 4$$



$$12 \div 4 = 3$$



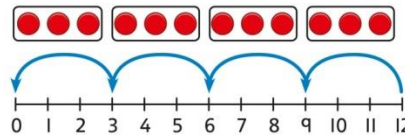
$$12 \div 6 = 2$$



$$12 \div 2 = 6$$



Children understand how to relate  
division by grouping to repeated  
subtraction.



There are 4 groups now.

12 divided into groups of 3.

$$12 \div 3 = 4$$

There are 4 groups.

Division with  
arrays

Link multiplication to division  
by creating an array and  
thinking about the number  
sentences that can be created.

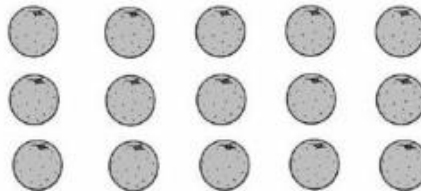


$$15 \div 3 = 5$$

$$15 \div 5 = 3$$

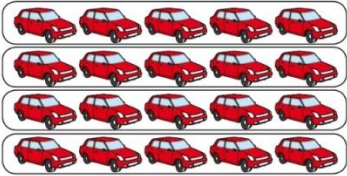
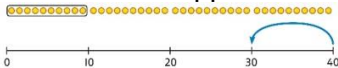
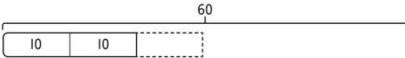
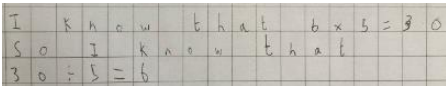
$$3 = 15 \div 5$$

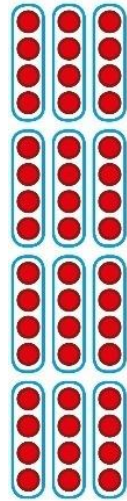
Draw an array and use lines to  
split it into groups to make  
multiplication and division  
sentences.



Find the inverse of multiplication  
and division sentences by  
creating eight linking number  
sentences.

|    |   |   |   |    |   |    |   |    |   |   |
|----|---|---|---|----|---|----|---|----|---|---|
| 5  | x | 3 | = | 15 | - | 15 | = | 5  | x | 3 |
| 3  | x | 5 | = | 15 | - | 15 | = | 3  | x | 5 |
| 15 | ÷ | 3 | = | 5  | - | 5  | = | 15 | ÷ | 3 |
| 15 | ÷ | 5 | = | 3  | - | 3  | = | 15 | ÷ | 5 |

|                                          |                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                      |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                          | $5 = 15 \div 3$<br><br>$3 \times 5 = 15$<br>$5 \times 3 = 15$<br>$15 = 3 \times 5$<br>$15 = 5 \times 3$                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                      |
| Use known times-tables to solve division | <p>Understand the relationship between multiplication facts and division.</p>  <p>4 groups of 5 cars is 20 cars in total.<br/>20 divided by 4 is 5.</p> | <p>Link equal grouping with repeated subtraction and known times-table facts to support division</p>  <p>40 divided by 4 is 10.</p> <p>Use a bar model to support understanding of the link between times-table knowledge and division.</p>  | <p>Relate times-table knowledge directly to division.</p> $1 \times 10 = 10$<br>$2 \times 10 = 20$<br>$3 \times 10 = 30$<br>$4 \times 10 = 40$<br>$5 \times 10 = 50$<br>$6 \times 10 = 60$<br>$7 \times 10 = 70$<br>$8 \times 10 = 80$ | <p>I used the 10 times-table to help me.<br/><math>3 \times 10 = 30</math>.</p> <p>I know that 3 groups of 10 makes 30, so I know that 30 divided by 10 is 3.</p> <p><math>3 \times 10 = 30</math> so <math>30 \div 10 = 3</math></p>                |
| Year 3 Division                          |                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                      |
| Objective and strategy                   | Concrete                                                                                                                                                                                                                                 | Pictorial                                                                                                                                                                                                                                                                                                                                                                                                        | Abstract                                                                                                                                                                                                                               | Vocabulary                                                                                                                                                                                                                                           |
| Use known times-tables to solve division | <p>Use knowledge of known times-tables to calculate divisions.</p>  <p>24 divided into groups of 8.<br/>There are 3 groups of 8.</p>                  | <p>Use knowledge of known times-tables to calculate divisions.</p>                                                                                                                                                                                                                                                                                                                                               | <p>Use knowledge of known times-tables to calculate divisions.</p>                                                                                | <p>division<br/>dividing, divide, divided by, divided into<br/>left, left over, remainder<br/>grouping<br/>sharing, share, share equally<br/>one each, two each, three each ... ten each<br/>group in pairs, threes ... tens<br/>equal groups of</p> |

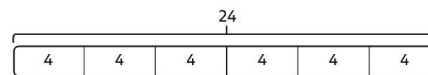


$$48 \div 4 = 12$$

*48 divided into groups of 4.  
There are 12 groups.*

|    |   |    |   |    |
|----|---|----|---|----|
| 4  | x | 12 | = | 48 |
| 48 | ÷ | 4  | = | 12 |

A bar model may represent the relationship between sharing and grouping.

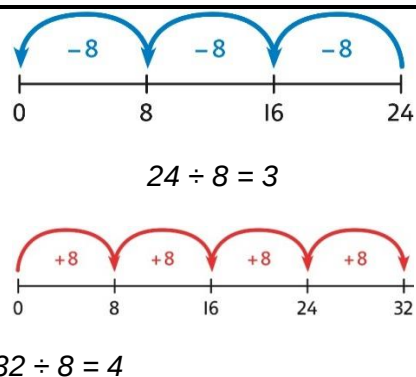


$$24 \div 4 = 6$$

$$24 \div 6 = 4$$

Children understand how division is related to both repeated subtraction and repeated addition.

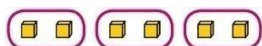
multiplication table  
multiplication fact, division fact



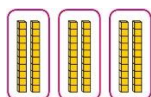
Use known facts to divide multiples of 10

Use place value equipment to understand how to divide by unitising.

Make 6 ones divided by 3.

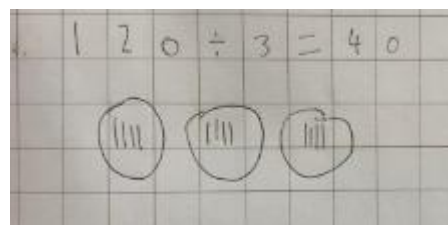


Now make 6 tens divided by 3.



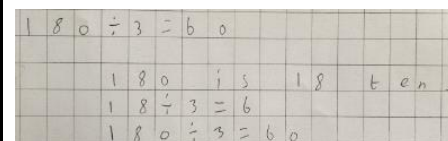
What is the same? What is different?

Divide multiples of 10 by unitising.



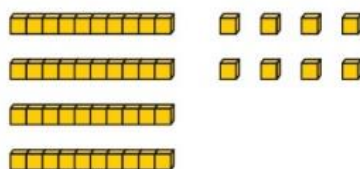
12 tens shared into 3 equal groups.  
4 tens in each group.

Divide multiples of 10 by a single digit using known times-tables.



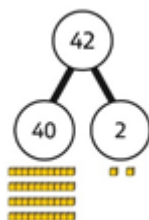
Divide a 2 digit number by a 1 digit number using partitioning

Children explore dividing 2-digit numbers by using place value equipment.



$$48 \div 2 = ?$$

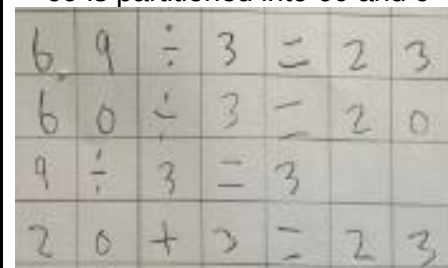
Children explore which partitions support particular divisions.  
 $42 \div 2 =$

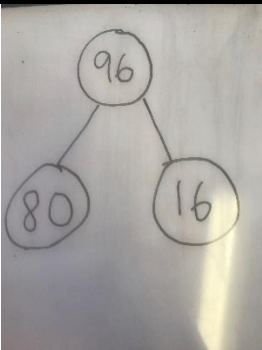
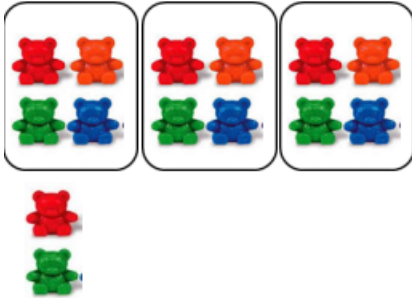
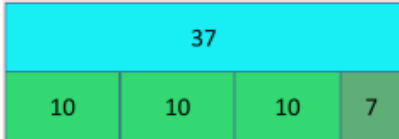
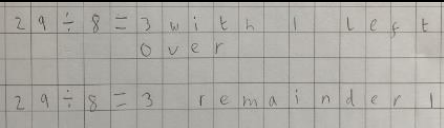


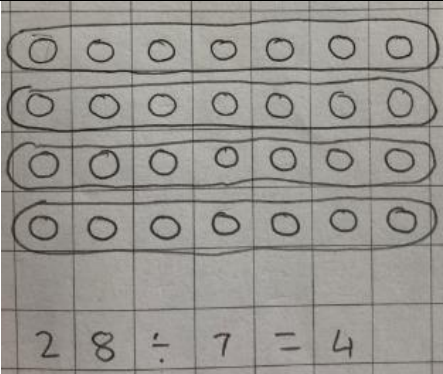
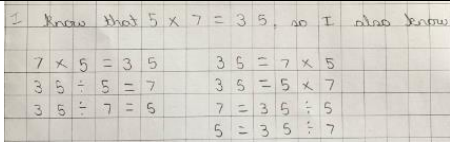
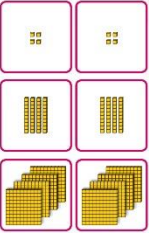
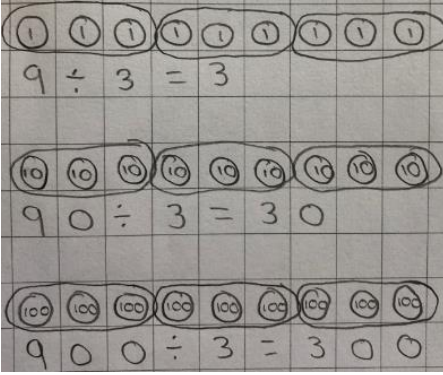
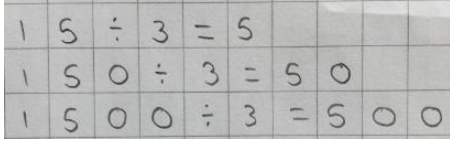
$$96 \div 8$$

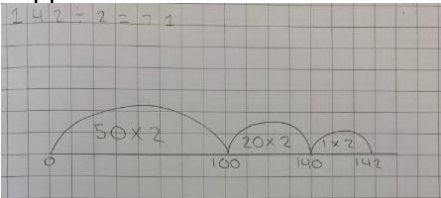
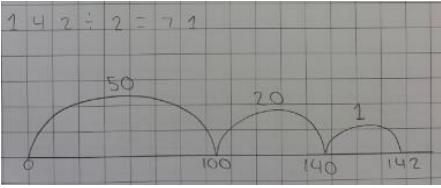
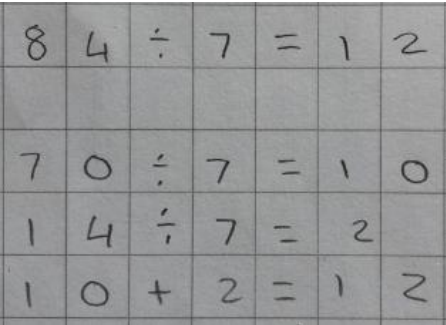
$$69 \div 3 =$$

69 is partitioned into 60 and 9

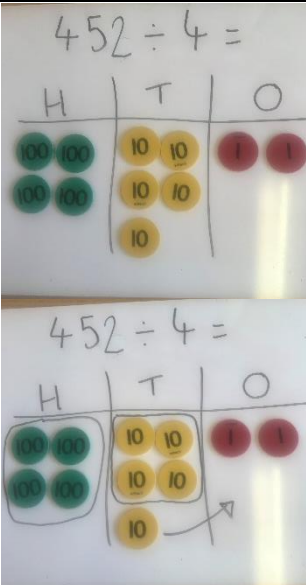
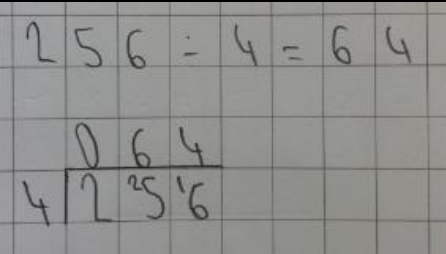


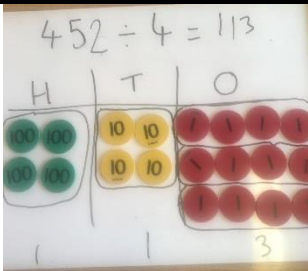
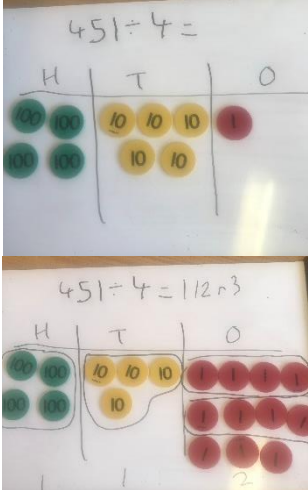
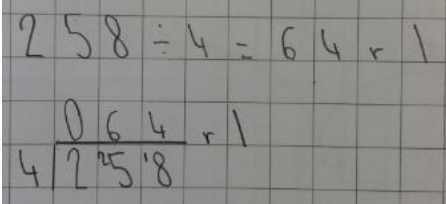
|                                                                                                  |                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                     |            |
|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------|
|                                                                                                  |                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |            |
| <p>Children have an awareness of remainders</p> <p>Using the word remainder not the letter r</p> | <p><math>14 \div 3 =</math></p> <p>Divide objects between groups and see how much is left over</p>  | <p>Jump forward in equal jumps on a number line then see how many more you need to jump to find a remainder.</p>  <p>Draw dots and group them to divide an amount and clearly show a remainder.</p>  <p>Use bar models to show division with remainders.</p>  |  |            |
| Year 4 Division                                                                                  |                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                     |            |
| Objective and strategy                                                                           | Concrete                                                                                                                                                                             | Pictorial                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Abstract                                                                            | Vocabulary |
| Understand the relationship                                                                      | Use objects to explore families of multiplication and division facts.                                                                                                                | Represent divisions using an array.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Understand families of related multiplication and division facts.                   |            |

|                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>between multiplication and division, including times-tables</p> |  <p><math>4 \times 6 = 24</math><br/> <i>24 is 6 groups of 4.</i><br/> <i>24 is 4 groups of 6.</i></p> <p><i>24 divided by 6 is 4.</i><br/> <i>24 divided by 4 is 6.</i></p>                                                                                                                                                                  |  <p><math>28 \div 7 = 4</math></p>                                                                                                                                                                                                                                                                           |  <p> <math>7 \times 5 = 35</math>    <math>35 = 7 \times 5</math><br/> <math>35 \div 5 = 7</math>    <math>35 = 5 \times 7</math><br/> <math>35 \div 7 = 5</math>    <math>7 = 35 \div 5</math><br/> <math>5 = 35 \div 7</math> </p> | <p>division</p> <p>dividing, divide, divided by, divided into</p> <p>left, left over, remainder</p> <p>grouping</p> <p>sharing, share, share equally</p> <p>one each, two each, three each ... ten each</p> <p>group in pairs, threes ... tens</p> <p>equal groups of</p> <p><b>multiplication table</b></p> <p><b>multiplication fact, division fact</b></p> |
| <p>Dividing multiples of 10 and 100 by a single digit</p>          | <p>Use place value equipment to understand how to use unitising to divide.</p>  <p><i>8 ones divided into 2 equal groups</i><br/> <i>4 ones in each group</i></p> <p><i>8 tens divided into 2 equal groups</i><br/> <i>4 tens in each group</i></p> <p><i>8 hundreds divided into 2 equal groups</i><br/> <i>4 hundreds in each group</i></p> | <p>Draw the place value counters to support with calculation.</p>  <p><math>9 \div 3 = 3</math></p> <p><math>90 \div 3 = 30</math></p> <p><math>900 \div 3 = 300</math></p> <p><math>9 \div 3 = 3</math></p> <p><i>9 tens divided by 3 is 3 tens.</i><br/> <i>9 hundreds divided by 3 is 3 hundreds.</i></p> | <p>Use known facts to divide 10s and 100s by a single digit.</p>  <p> <math>15 \div 3 = 5</math><br/> <math>150 \div 3 = 50</math><br/> <math>1500 \div 3 = 500</math> </p>                                                          |                                                                                                                                                                                                                                                                                                                                                               |

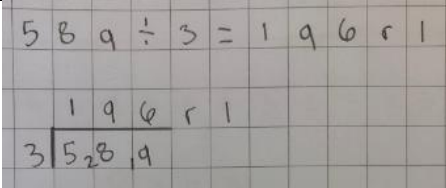
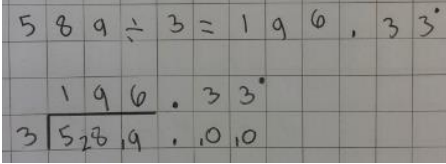
|                                                                                   |                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                         |                                                                                                                                                                                                                         |  |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <p>Informal methods of dividing 2-digit and 3-digit numbers by a single digit</p> | <p>Use place value equipment to explore why different partitions are needed.</p> <p><math>42 \div 3 = ?</math></p> <p><i>I will split it into 30 and 12, so that I can divide by 3 more easily.</i></p>  | <p>Children use a number line to support</p>  <p>Then move to,</p>  | <p>Represent how to partition flexibly where needed.</p>  <p>84 is partitioned into 70 and 14, as these are both divisible by 7.</p> |  |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

Year 5 **division**

| Objective and strategy                  | Concrete                                                                           | Pictorial                                          | Abstract                                                                             | Vocabulary                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Short Division (Bus stop) method</p> |  | <p>Children can draw the place value counters.</p> |  | <p>division</p> <p>dividing, divide, divided by, divided into</p> <p>left, left over, remainder</p> <p>grouping</p> <p>sharing, share, share equally</p> <p>one each, two each, three each ... ten each</p> <p>group in pairs, threes ... tens</p> <p>equal groups of</p> <p><b>multiplication table</b></p> <p><b>multiplication fact, division fact</b></p> |

|                                                  |                                                                                   |                                             |                                                                                     |  |
|--------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------|-------------------------------------------------------------------------------------|--|
|                                                  |   |                                             |                                                                                     |  |
| Short Division (Bus stop) method with remainders |  | Children can draw the place value counters. |  |  |

Year 6 division

| Objective and strategy                                   | Concrete                                                                      | Pictorial | Abstract                                                                              | Vocabulary                                                                                                                                                                       |
|----------------------------------------------------------|-------------------------------------------------------------------------------|-----------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Short Division (Bus stop) method with remainders         | Manipulatives may still be used with the corresponding calculation alongside. |           |  | division<br>dividing, divide, divided by, divided into<br>left, left over, remainder<br>grouping<br>sharing, share, share equally<br>one each, two each, three each ... ten each |
| Short Division (Bus stop) method with decimal remainders | Manipulatives may still be used with the corresponding calculation alongside. |           |  | group in pairs, threes ... tens<br>equal groups of                                                                                                                               |

|                                          |  |  |                                                                                                                                                                                                                                                                                              |                                                                               |
|------------------------------------------|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| 2 digit Short Division (Bus stop) method |  |  | <div><div>4485 ÷ 13 = 345</div><div><div>0345</div><div>13 4485</div></div></div> <div><div>13</div><div>26</div><div>39</div><div>52</div><div>65</div><div>78</div><div>91</div></div>                                                                                                     | <div>multiplication table</div> <div>multiplication fact, division fact</div> |
| Long division                            |  |  | <div><div>4485 ÷ 13 = 345</div><div><div>0345</div><div>13 4485</div><div>- 39</div><div>058</div><div>- 52</div><div>065</div></div></div> <div><div>13</div><div>26</div><div>39</div><div>52</div><div>65</div><div>78</div><div>91</div><div>104</div><div>117</div><div>130</div></div> |                                                                               |