Year R

Stage 1 – Dividing by sharing practically

Children are introduced to the concept of **sharing** through practical games and activities.

Stage 2 – Dividing by grouping practically

Children are introduced to the concept of **grouping** through practical games and activities.

Stage 3 – Halving

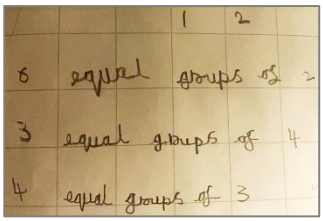
Children begin to explore key **halving facts** within 10. **Concrete resources** are used to enable children to practical share between 2.

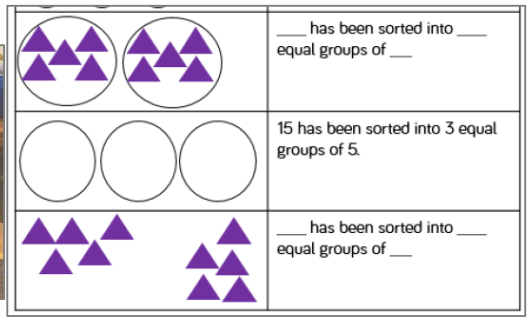
Year 1

Stage 1 – Dividing by making equal groups

Children start with a given total and practically make groups of an equal amount. **Stem sentences** are used to underpin key concepts and vocabulary.

Take 20 cubes. Complete the sentences.
I can make ____ equal groups of 2
I can make ____ equal groups of 5
I can make ____ equal groups of 10

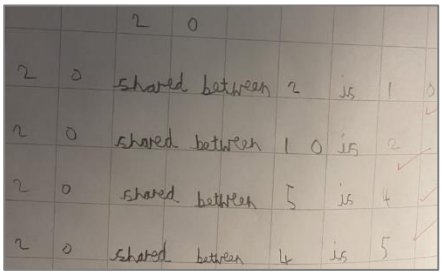




Stage 2 – Dividing by sharing equally

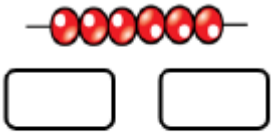
Children explore sharing practically by using **1:1 correspondence**. Children explore real life **sharing** concepts and use **stem sentences** to reinforce their understanding.

Tim has 16 bananas.
He shares them equally between two boxes.

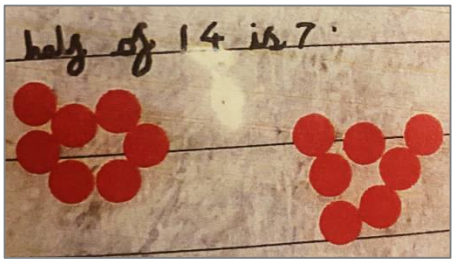


Stage 3 – Halving

Children begin to explore key **halving facts** within 20. Children use practical resources to represent how amounts can be shared equally between 2.



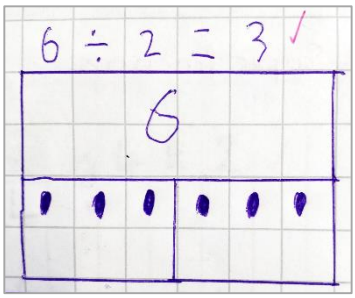
There are ___ beads.
Half of ___ is ___

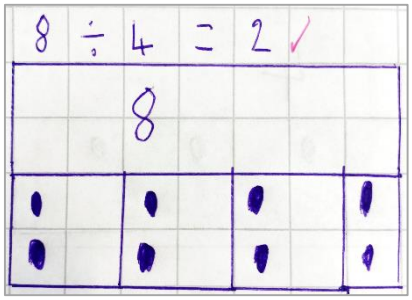


Year 2

Stage 1 – Division using sharing jottings

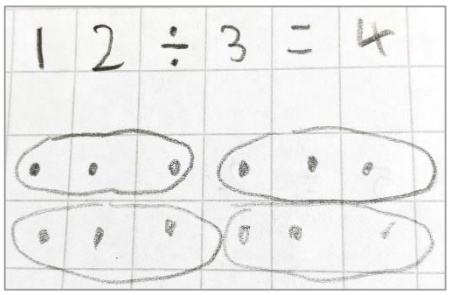
Children build on their previous experience of **sharing** practically using **1:1 correspondence**. Children represent sharing plates pictorially and share the quantity by drawing ones jottings into a **bar model**. The jottings mimic the **concrete resources** which are explored before this stage is introduced.

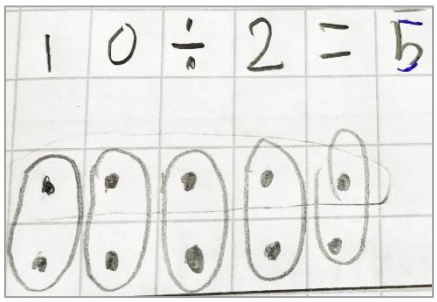




Stage 2 – Division using grouping jottings

Children build on their previous experience of making equal groups and **arrays**. Children represent their whole quantity pictorially as an **array** and circle the amount in each equal group. The jottings mimic the **concrete resources** which are explored before this stage is introduced.

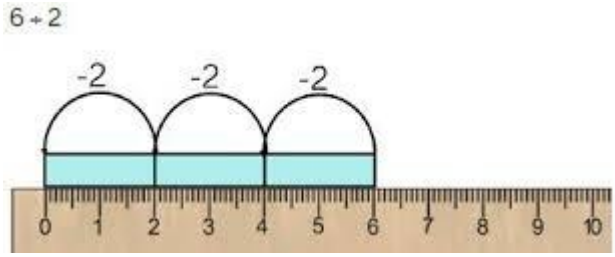




Year 3

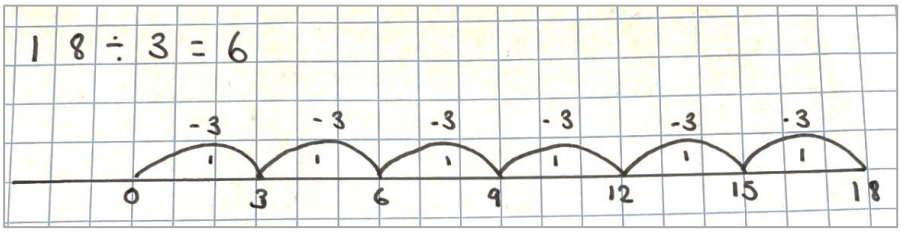
Stage 1 – Division using repeated subtraction and Cuisenaire

Children are introduced to division as repeated subtraction. Within this stage, children explore unstructured **number lines** and use **Cuisenaire** to represent known multiplication and division facts.



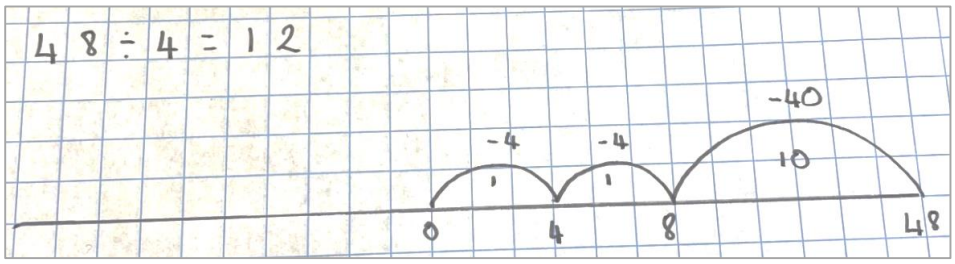
Stage 2 – Division using repeated subtraction on an unstructured number line

Within this stage, children use their multiplication and division knowledge to represent repeated subtraction steps on an unstructured **number line**. The jottings mimic the **concrete resources** which are explored before this stage is introduced.



Stage 3 – Division using efficient steps of repeated subtraction on an unstructured number line

Within this stage, children explore using more efficient steps to subtract larger 'chunks' relying on their multiplication and division knowledge. These larger chunks are represented on an unstructured **number line**.

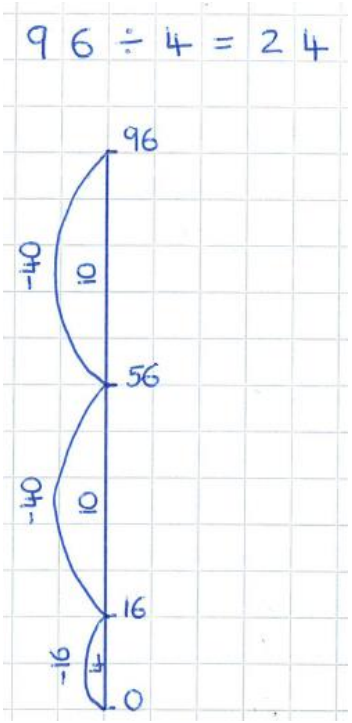


Year 4

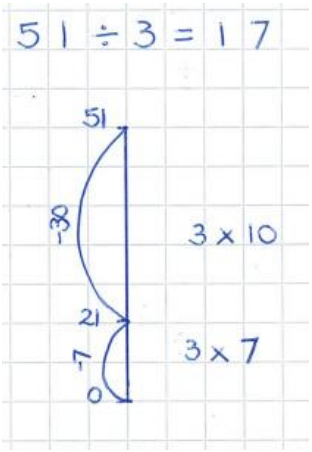
Stage 1 - Division using efficient steps of repeated subtraction on an unstructured **vertical** number line

Children build on their knowledge from Year 3 where they completed division calculations on an unstructured **number line**. However, this time, they rotate the number line so that it is **vertical** – this prepares them for more formal methods of division.

In Year 4, children divide 2-digits by 1-digit. They continue to take efficient steps to subtract larger 'chunks' relying on their multiplication and division knowledge.



To begin with, while they gain confidence with the **vertical number line**, they write the 'chunk' (how many of the divisor) they are taking away inside the 'jumps' on the number line. Later, they transfer this to alongside the jump – again in preparation for future methods.



Stage 2 - Division using the 'chunking' method (2-digits divided by 1-digit)

At this stage, the **number line** is removed. However, the children still complete repeated subtraction of the **divisor** (and its **multiples**) to complete division calculations.

First, children look to subtract **multiples** of 10 'chunks' of the **divisor** from the **dividend**.

When no more multiples of 10 can be subtracted, they then use their multiplication tables knowledge to subtract the next 'chunk'.

They then add up how many 'chunks' they have taken away in total.

9 6 ÷ 4 = 2 4

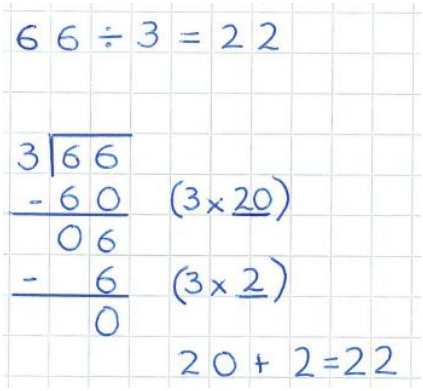
```
4 | 9 6
  - 4 0   (4 x 10)
  -------
    5 6
  - 4 0   (4 x 10)
  -------
    1 6
  - 1 6   (4 x 4)
  -------
    0 0
```

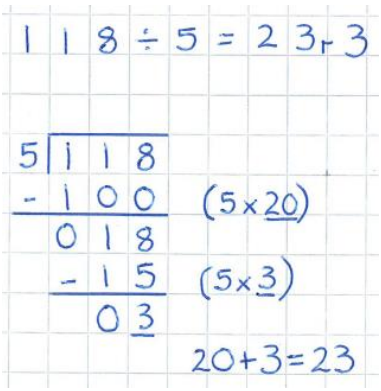
10 + 10 + 4 = 24

Stage 3 - Division using the 'chunking' method (3-digits divided by 1-digit)

When children are confident with the 'chunking' method, they will be encouraged to subtract the **multiples** of 10 'chunks' as one large 'chunk'. They will also begin dividing 3-digits by 1-digit.

They may also come across calculations where the **dividend** can't be divided exactly by the **divisor**. The number left over is written as a remainder.

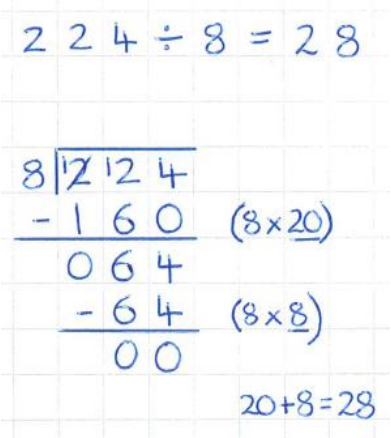


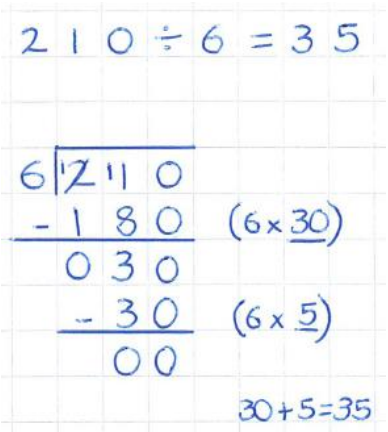


Year 5

Stage 1 – Division using the 'chunking' method (up to and including 4-digits divided by 1-digit)

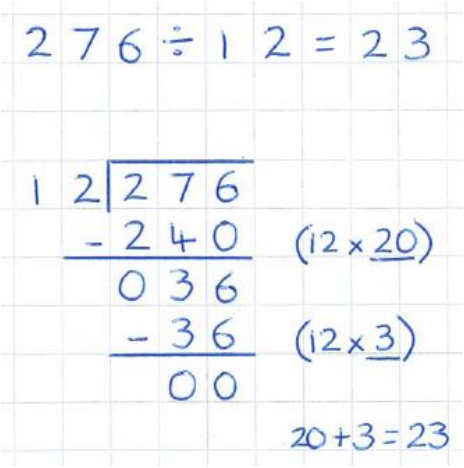
Children consolidate their understanding of the 'chunking' method. They continue to ensure that they are being efficient when choosing which 'chunks' to take away.

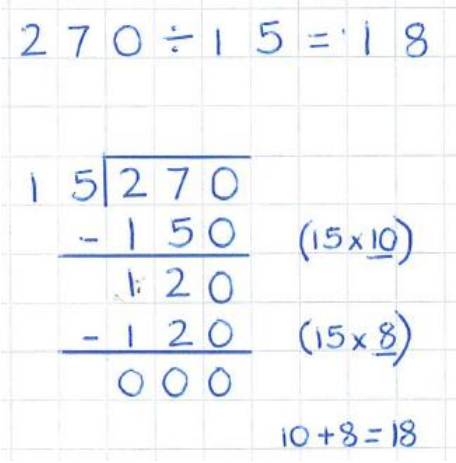




Stage 2 – Division using the 'chunking' method (dividing up to and including 4-digits by 2-digits)

Children use the same method as in the previous stage to divide by 2-digit numbers. They continue to ensure that they are being efficient when choosing which 'chunks' to take away.

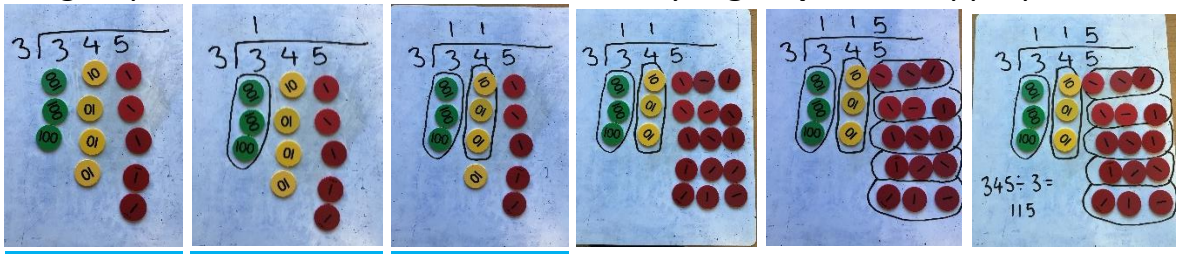




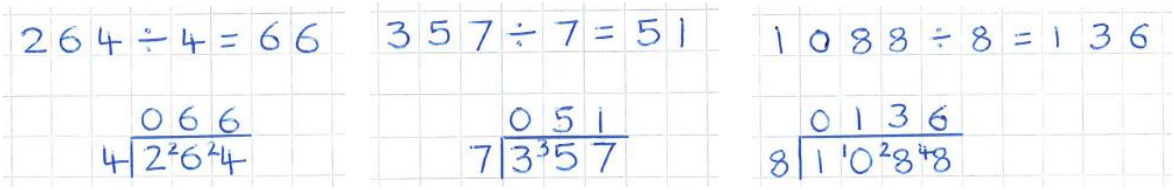
Year 6

Stage 1 – Division using the 'Short Division' method

Children are shown how to use the Short division method to solve calculations where 4-digits are divided by a single digit.
Children work with **place value counters** to begin with to ensure they understand the process. They use place value language and 'how many groups of the **divisor** can be made'. They **regroup** where appropriate.



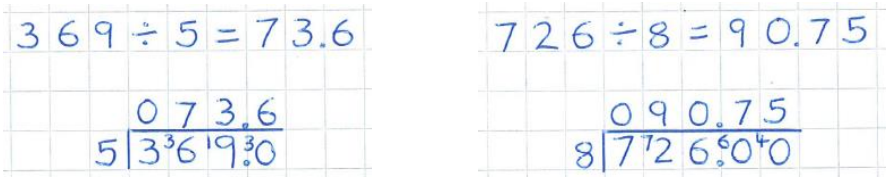
The **place value counters** are taken away as the children become more confident.



Stage 2 – Division using the 'Short Division' method (Dealing with remainders)

Children will continue to solve division calculations using short division. However, they will come across calculations where the **divisor** does not fit exactly into the **dividend** and so there are numbers left over. This is called a remainder. Children can either write what is left over as a remainder, turn it into a fraction or **decimal** or round it up or down depending on the context.

Teachers may use their discretion as to whether they show children how to use the method to turn remainders into **decimals** without the need for mental calculation.



Stage 3 – Division using the 'Long Division' method

In Year 6, children are introduced to 'Long division' in order to solve division calculations. This method builds on both short division and the 'chunking' method that children should now be familiar with. Mental addition and times table knowledge is key to ensuring that this method is completed accurately. If this knowledge isn't secure, some children may start with using this method to divide numbers by single digits rather than 2-digit numbers.

Children are encouraged to write out the first few **multiples** of the **divisor** to help them with this method.

The next few steps are heavily modelled, but in short, children are following the process of divide, multiply, subtract, bring the next digit down and repeat.

Divide: How many times does the **divisor** fit into the number? Teachers often ask, how many groups of the **divisor** can we make and take away? The children are looking for the largest possible 'chunk' of the **multiple** to take away and use the list of **multiples** to help them. Their answer is written above the line.

Multiply: Multiply the answer to your previous division by the **divisor** to reach the **multiple** needed to calculate the remainder. Children again use the list of multiples to help them.

Subtract: Subtract the **multiple** from the original number to calculate the remainder.

Bring the next digit down: the digit is brought down so the steps can be repeated.

Repeat: These steps are repeated until there are no digits to bring down and there is either 0 or a number less than the **divisor** remaining.

3 6 4 0 ÷ 1 5 = 243

```
        0 2 4 3
    1 5 | 3 6 4 5
        - 3 0 ↓
          0 6 4
        - 6 0 ↓
            0 4 5
          - 4 5
              0 0
```

1. 15
2. 30
3. 45
4. 60
5. 75
6. 90

If there is a number left over, children can either write what is left over as a remainder, turn it into a fraction or **decimal** or round it up or down depending on the context. Alternatively, teachers may use their discretion as to whether they show children how to use the method to turn remainders into decimals without the need for mental calculation.

```
        2 8 · 8
    1 5 | 4 3 2 · 0
        3 0 ↓
        1 3 2
        1 2 0 ↓
          1 2 0
          1 2 0
              0
```

Year R Year 1 Year 2 Year 3 Year 4 Year 5 Year 6