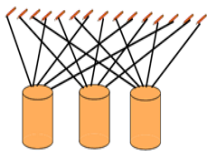
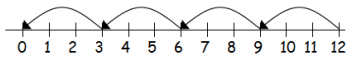
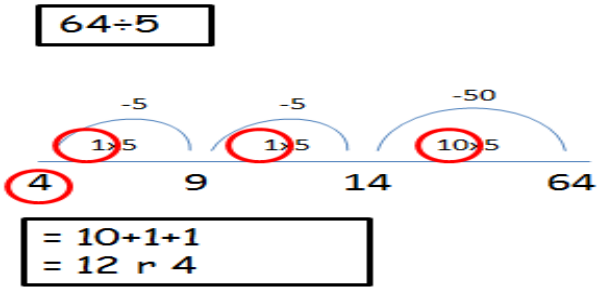
Calculation Progression for Division

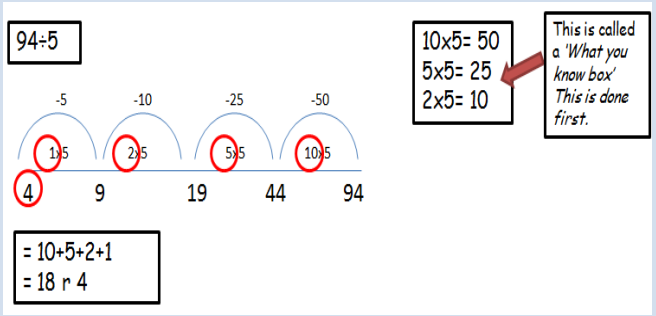
	Principle	Example
Yr 1	Solving one-step problems using concrete objects	In real contexts, solve one-step problems, we have 20 pieces of fruit, how can we share them? How many each? If we have 30 eggs, how many boxes do we need?
Yr 2	Use equipment, arrays, pictorial diagrams, to solve division problems by sharing and grouping, moving to use of number line when ready	• **Sharing equally**  Use **sharing** to answer division questions; Suppose 15 pencils were to be shared out between three children. How many pencils would each child get? Explain to me how you could work it out. Experience divisions that give rise to remainders, such as: *Three friends share 16 marbles equally. How many marbles does each friend get? How many marbles are left over?* • **Grouping or repeated subtraction** Use practical equipment or objects to answer questions such as: *How many 2s make 12?* Relate this to the division 12 ÷2. Use objects or a number line to support, record or explain this. For example, starting from 12, jump back in steps of 2, or starting with 12 counters, keep on taking away 2 counters. Record this as **repeated subtraction** and as **division**: 12 - 2 - 2 - 2 - 2 - 2 - 2 =0 12 ÷2 =6 12 divided by 2 equals 6 Children explain how they use equipment, objects or a number line to carry out division.
	Use division facts for x2, x5, x10	Introduce ÷, = signs and their meanings. Discuss = as balancing, one side is the same value as the other. Use scales to demonstrate when appropriate
Yr 2	Repeated Subtraction on a structured number line Counting hops on a number line.	• **Repeated subtraction using a number line or bead bar** Show me on a number line how you could do: 12 ÷ 3 = 4   The bead bar will help children with interpreting division calculations such as 12 ÷ 3 as 'how many 3s make 12?'
Yr 3	Unstructured number line division When the numbers get bigger, it is inefficient to do lots of small jumps. This starts when you do TU÷U,	Example shows with remainder, but complete division without remainders first 

Yr 3	Division expectation	2 digit numbers divided by a single digit

Yr 3 - 6

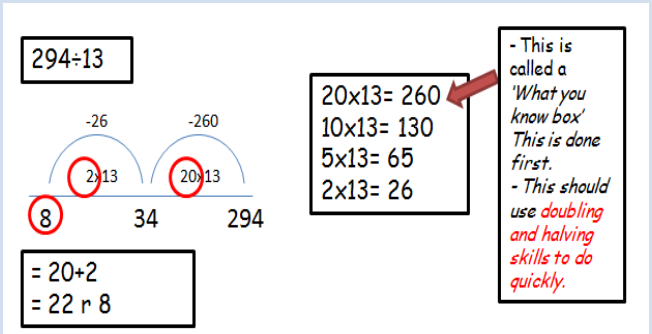
TU÷U, HTU÷U or , HTU÷TU

This method extends the numberline for handling larger numbers. Children will develop their use of repeated subtraction to be able to subtract multiples of the divisor. Initially, these should be multiples of 10s, 5s, 2s and 1s – numbers with which the children are more familiar.



94 ÷ 5 = ?
We know...
10 x 5 = 50
5 x 5 = 25
2 x 5 = 10
1 x 5 = 5
+----------
18 90 remainder 4

Again, complete problems without remainders first

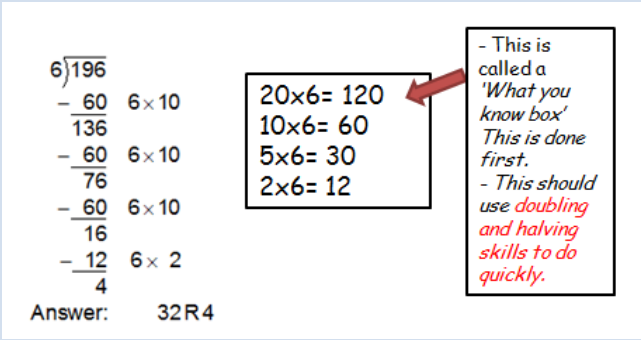


Yr 5	Division expectation	Divide numbers up to 4 digits by a single digit

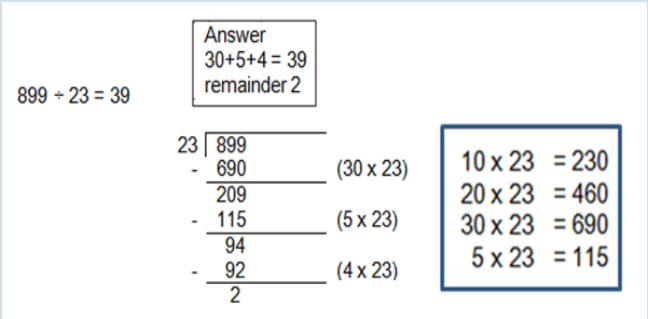
Bus shelter division

Use this when the numberline is totally secure.

Subtract multiples of the divisor. Initially, these should be multiples of 10s, 5s, 2s and 1s – numbers with which the children are more familiar, but will extend by doubling and halving eg. 20x, 30x, 40x etc.



The 'What you know box' should be completed first.



This method uses column subtraction which needs to be secure before this method is introduced.

Yr 6	Division expectation	To divide up to four digits by a 2 digit number

Short Division

Continues the use of 'bus shelter' but progresses on from chunking.

Only to be used for numbers divided by a single digit by most, as it requires excellent mental recall of times tables.

Only very able children totally secure with mental times tables will be able to do numbers divided by TU on this method.

The short division method is recorded like this:

$$3\overline{)821}$$ (27)

$$3\overline{)2^{2}9^{2}1}$$ (097)

$$3\overline{)398.^{2}0^{2}0^{2}0}$$ (132.66 6 6)

- Two decimal place cut off.
-6 is rounded to 7.

Answer is = 132.67

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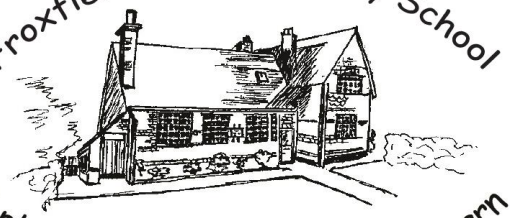

A place where children love to learn

Calculation Progression in Division