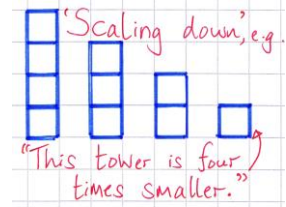
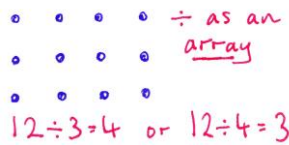


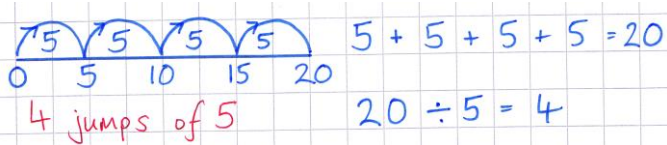
÷ Division at Firbeck Academy

Step 1: sharing and grouping practically e.g. Can you share these six cars between two children? Can you make 2 groups of 3 cars?

Step 2: pictorial representation (e.g. sharing objects out onto plates) with teacher possibly scribing using conventional labels and symbols. At this stage we will also show division as **arrays** and **scaling** (see examples.)



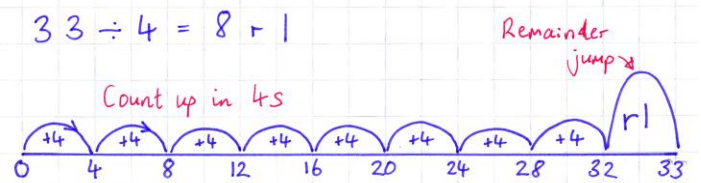
Step 3: repeated addition/ subtraction on a number line supported by counting aloud, e.g.



At this point, the times tables you are learning can be used to solve division problems mentally as well. It is important to understand that multiplication is the **inverse** (opposite) of division; so if you know that $5 \times 2 = 10$, you should also know that $10 \div 2 = 5$.
"How many twos are there in ten?"

Step 4: using a **Number Line** for division. This method works well for $TU \div U$ problems and especially problems with a remainder. Because you can count up as you are working, it is also useful if you don't know all your times tables yet.

- Draw a number line.
- Always put 0 at the bottom (left) of the number line.
- Put the number being divided (the dividend) at the end (right) of the number line.
- Look at the number you are dividing by (the divisor). Start at 0 and count up in jumps of this number (e.g. if your problem is $33 \div 4$, jump up in fours.)
- Stop jumping when you get to your target number.
- If you can't get exactly to your target number, you will have a remainder (left over.) Draw a remainder jump and label it *r* so that you remember it's the remainder!
- Count up all the jumps to find the answer (not including the remainder - this has to be written separately.)



If you know all your times tables up to 12×12 , you'll find that you can solve most $TU \div U$ problems mentally, even with a remainder. Now it's time to move on to 'Bus Stop' division.

Step 5: 'Bus Stop' or 'Bus Shelter' short division.

This method works well for solving $TU \div U$ and $HTU \div U$ problems.

- Draw the 'Bus Shelter.' Put the number being divided (the dividend) inside the 'Bus Shelter', with the dividing number (the divisor) outside to the left.
- Now work from left to right to find the 'goes intos', e.g. "How many 4s go into 4?" Put the answer above the 'Bus Shelter'. Any remainders are carried onto the next number to make it into a two-digit number.
- If you have a remainder with no more numbers to carry it on to, this number is kept as the final remainder, e.g. $15r2$.

$$464 \div 4 = 116$$

$$\begin{array}{r} 116 \\ 4 \overline{)464} \\ \underline{4} \\ 6 \\ \underline{4} \\ 2 \\ 0 \end{array}$$

Remainder carried onto next number

$$47 \div 3 = 15r2$$

$$\begin{array}{r} 15r2 \\ 3 \overline{)47} \\ \underline{3} \\ 17 \\ \underline{15} \\ 2 \end{array}$$

Work from left → right
Final remainder