




Drawing Out Numbers

For addition and subtraction, draw numbers out to help students visualise the number. These shapes are similar to base-10s:

Thousands	Hundreds	Tens	Ones
Th			

Addition with re-grouping



Example 1)

$$\begin{array}{r} \text{T U} \\ 15 \\ + \underline{27} \\ \hline \end{array}$$

Step 1- READ the equation out loud by saying, “15 plus 27 equals ‘how many’. 15 is made up of 1 ten and 5 ones, 27 is made up of 2 tens and 7 ones” writing “T” above tens column and “U” above ones column. I pay close attention to the sign (+) and I say “The plus sign tells me to **draw more lines.**”

Step 2- CIRCLE- Circle what you already KNOW. In this case, you would circle the numbers 15 and 27 as they will give you your answer.



Step 3- DRAW the tens and ones to the right of the equation, or next to the numbers. They are drawn to the right in the example below.

	T	U	
	1	5	
+	2	7	

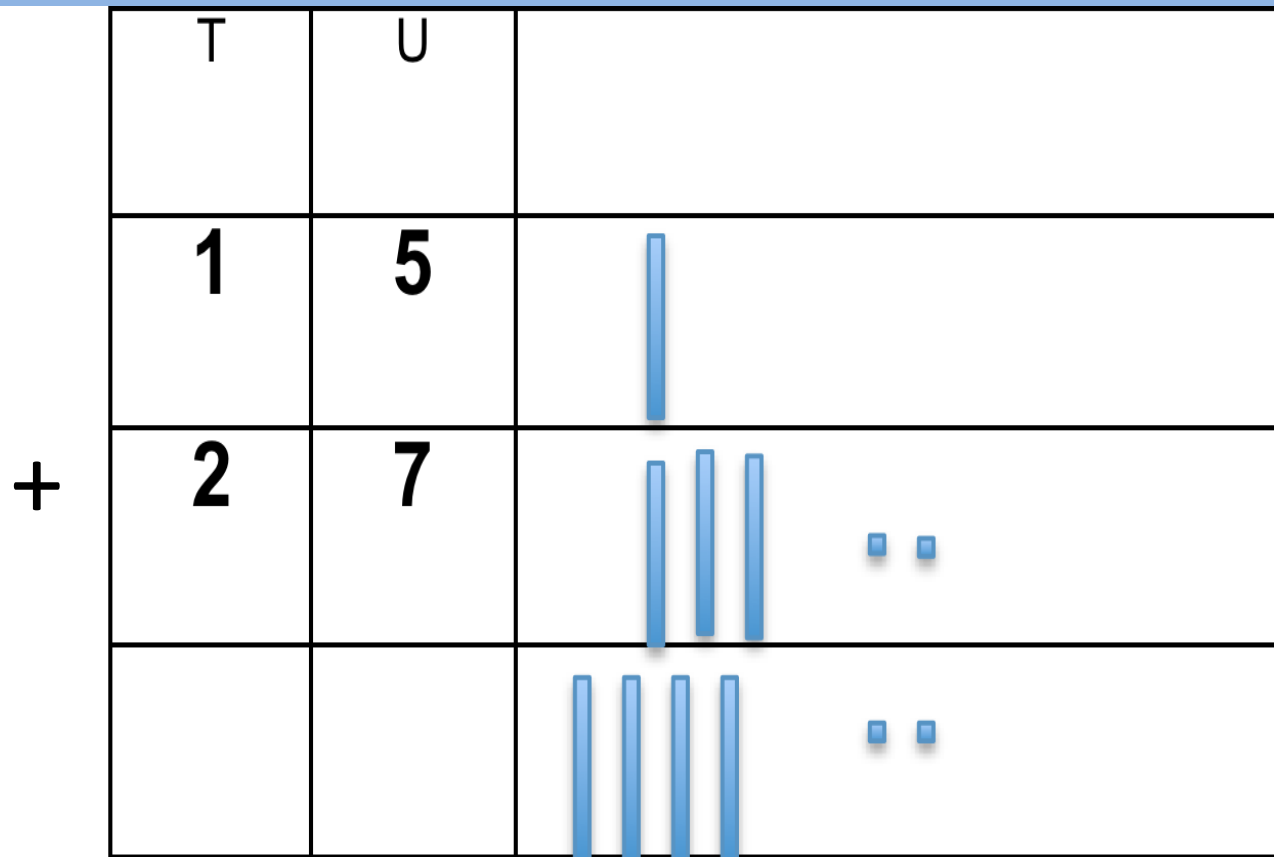
Step 4- BALANCE- I say, *“I need the same amount above the equal line as you have below the equal line.”*

Find the total, beginning with the ones. After counting the ones, ask the question, *“Can I write 12 in the ones box below?”* (The answer is “No”, as you can only write 1 digit in the ones’ box).

This equation has 12 ones. Therefore, I need to “REGROUP”. I must circle 10 of them and draw a line over to the other tens, saying *“These ten ones are the same as 1 ten. So they become a ten.”*

	T	U	
	1	5	
+	2	7	




After I have regrouped and 10 ones became a ten, I will have 2 ones remaining, so I can draw 2 ones below in my drawing answer box. I then count my tens and count “4 tens” and I can draw four tens in my drawing answer box.



Step 5- CHECK

I write the answer, “42” down in the correct spaces below the equation.

I count the amount in my drawing, first above the equal line, then second count the amount below the equal line to ensure they are the same as my written number. Once I see they are the same, I can confidently say *“The equation is balanced!”*

T	U	
1	5	
2	7	
4	2	

Subtraction with decomposition

Example 2)


$$\begin{array}{r} \text{T U} \\ 25 \\ - \underline{17} \\ \hline \end{array}$$

Step 1- READ the equation out loud by saying, “*25 take away 17 equals ‘how many?’ 25 is made up of 2 tens and 5 ones. 17 is made up of 1 ten and seven ones.*”

I pay close attention to the sign (-) and I say “*The minus sign tells me to **cross out lines.***”

Step 2- CIRCLE- Circle what you already KNOW. In this case, you would circle the numbers 25 and 17 as they will give you your answer.

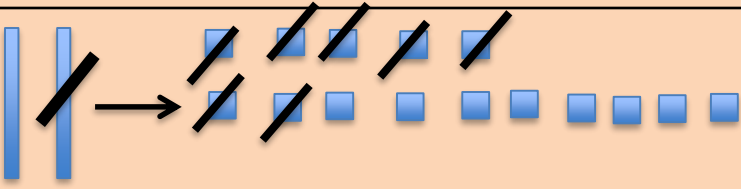
Step 3- DRAW the tens and ones to the right of the equation, or next to the numbers. Draw out 25 only, as you will cross out 17 from 25. They are drawn to the right in the example below.

	T	U	
	2	5	
-	1	7	

Step 4- BALANCE-

I then say I need to cross out 17, starting with the UNITS. I will begin by crossing out ones from ones and tens from tens, however, I am unable to cross out 7 ones because I only have 5.

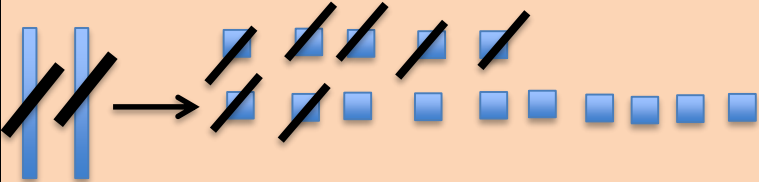

What I now need to do is to “decompose” a ten by crossing it out and exchange it for 10 ones, giving me 15 ones. This will allow me to cross out 7 ones.

	T	U	
	2	5	
-	1	7	
			Adam Meyersieck (2014)

Step 4 CONTINUED- BALANCE-

After I have crossed out 7 ones, I now need to cross out tens, as 17 is made up of 1 ten (and seven ones). I cross out 1 ten, which gives me 0 tens and 8 ones left over.

I draw the 8 left over ones below the equal line and write an "8" in the ones column

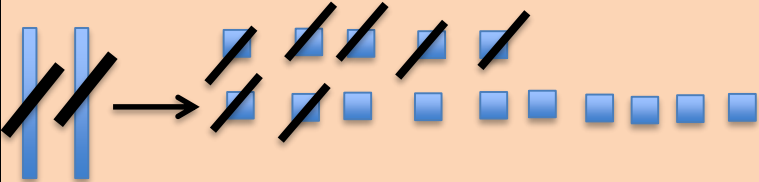

	T	U	
	2	5	
-	1	7	
		8	

Adam Meyersieck (2014)

Step 5- CHECK

I have written the answer, “8” down in the correct spaces below the equation.

I count the amount remaining my drawing, first above the equal line, then second count the amount below the equal line to ensure they are the same as my written number. Once I see they are the same, I can confidently say *“The equation is balanced!”*

	T	U	
	2	5	
-	1	7	
		8	 Adam Meyersieck (2014)