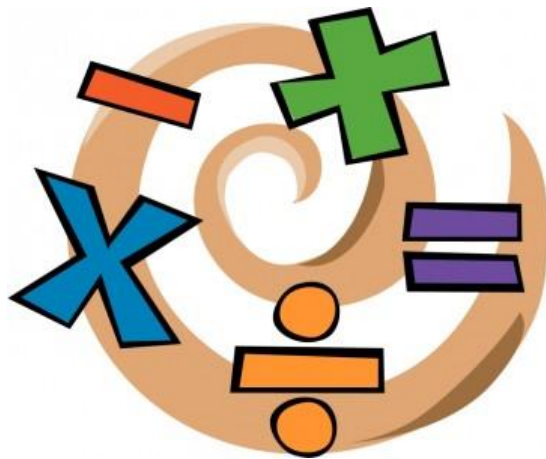


Building Dreams and
Inspiring Futures Federation



WOODVALE
PRIMARY ACADEMY

Primary Phase Approach to Addition



Teacher's Guide

Addition Numicon

Before children are ready to add they need to have had previous experience using Numicon and an awareness of the value of each Numicon piece.

Step 1 Counting on U + U

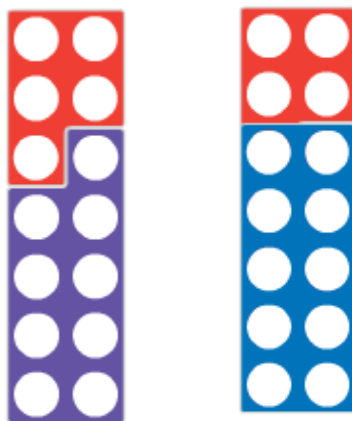
$$4 + 2 = 6$$

Children find the Numicon pieces and combine to find the answer 6. They will then need to check they are correct by placing the 6 piece over the top.



When bridging ten children need to combine as normal, then place a ten piece over the top to clearly see how many tens and how many units. Children need to be aware of place value to 20 to aid them.

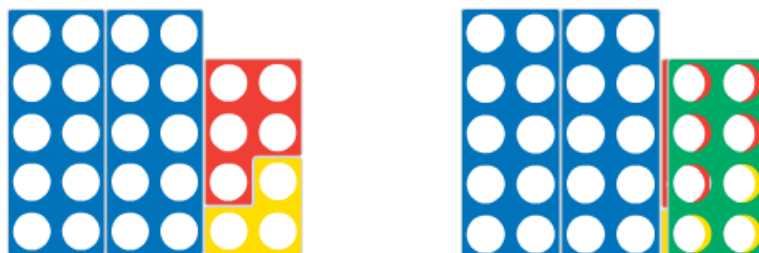
$$9 + 5 = 14$$



Step 2 Counting on TU + U

$$23 + 5 = 28$$

If children do not recognise the units making 8 they may still need to place the 8 piece over the top to check.



The idea of Numicon is for children to be able to recognise the shapes as a number. For the picture above children will see two tens and eight units which combined makes 28. Ensure the children count on from the starting number. For example, we made 23 at the beginning so keep that number in your head and count on 5.

$$17 + 8 = 25$$

The idea of Numicon is for children to be able to recognise the shapes as a number. For the picture above children will see two tens and eight units which combined makes 28. Ensure the children count on from the starting number. For example, we made 23 at the beginning so keep that number in your head and count on 5.

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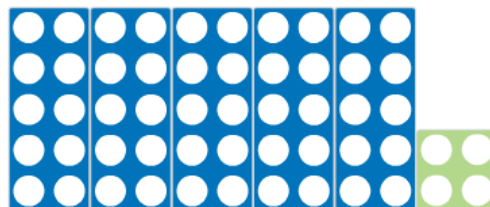


Addition Practically

Step 3 Counting on TU + T

$$\bar{34} + 20 = 54$$

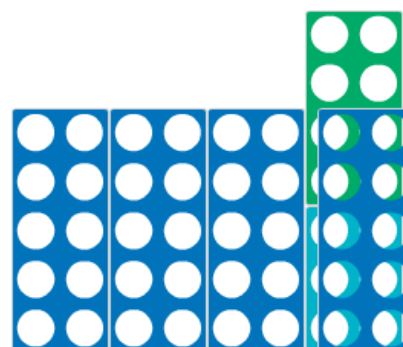
Make 34 first then add on the 20.



Step 4 Counting on TU + TU

$$26 + 18 =$$

Make 26 then add 18, children may still need to place a 10 piece over to clearly see how many tens and units.

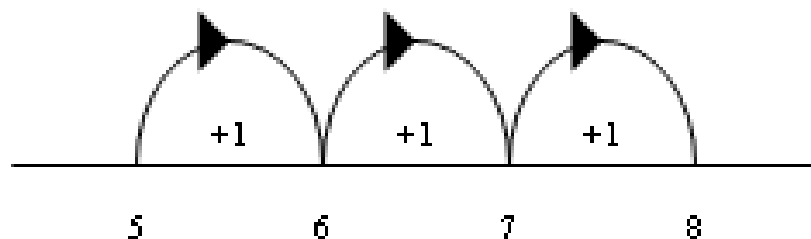


When moving on to HTU children should move on to using Diennes equipment for solving addition practically. The process would be HTU + TU then HTU + H and finally HTU + HTU.

Children can be taught to use a number track alongside using Numicon throughout Year 1 and 2.

Step 1 Counting on U + U

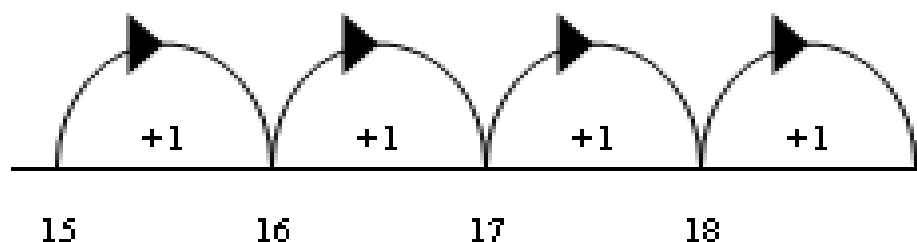
$5 + 3 =$



Children are able to count on from 5 and explain that adding 3 takes them to 8 because it is 3 jumps on from 5.

Step 2 Counting on TU + U

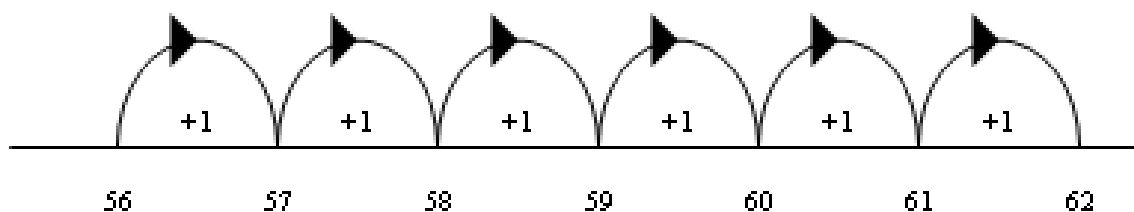
$15 + 4 =$



Step 3 Extend to higher numbers TU + U (numbers up to 100)

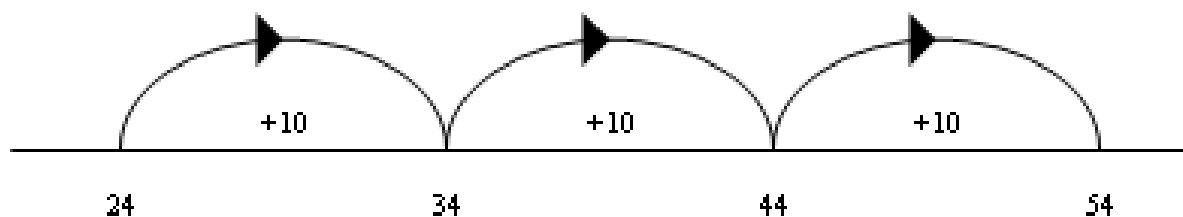
Children will progress from using published number tracks to draw their own to show understanding.

$56 + 6 =$



Step 4 Adding TU + multiple of Ten

$$24 + 30 =$$



Step 5 Adding TU + TU by partitioning

Partitioning is used to add larger numbers using knowledge and understanding of place value. Children need to be able to partition a number into tens and units. This method is often used to add numbers mentally, if children need to use a number line they will need to draw their own.

$$32 + 24 =$$

$$30 + 20 = 50$$

$$2 + 4 = 6$$

$$50 + 6 = 56$$

$$35 + 27 = \text{(bridging 10)}$$

$$30 + 20 = 50$$

$$5 + 7 = 12$$

$$50 + 12 = 62$$

Step 6 Partitioning keeping the first number whole

$$45 + 28 =$$

$$45 + 20 = 65$$

$$65 + 8 = 73$$

Extended to adding HTU + TU and HTU + HTU

Vertical addition should not be used prior to Year 4 unless for your top ability.

Step 7 Vertical addition (no carrying) Purpose is to teach the method.

$$23 + 42 =$$

$$\begin{array}{r} \text{TU} \\ 23 \\ +42 \\ \hline 65 \end{array}$$



Always add from the right hand side (units) as this will aid the children when introduced to carrying. Use Diennes to support this method.

Extend to adding HTU + TU and HTU + HTU.

Step 8 Compact vertical addition with carrying

$$45 + 27 =$$

$$\begin{array}{r} \text{TU} \\ 45 \\ +27 \\ \hline 72 \\ 1 \end{array}$$

Extend to HTU + HTU, ThHTU + HTU and ThHTU + ThHTU.

Once children are secure in any of these methods they will need to be provided with opportunities to apply their learning in context (e.g. money, measure and time).