

Addition: Add two 2-digit numbers without regrouping.

Use Dienes equipment to SHOW the addition

Start with a “teens” numbers addition sum such as $11 + 14$ or $12 + 15$ and so on. Be sure the 2 units numbers equal a number less than 10. Ask the child to show the two numbers using the Dienes Rods and Units. So 11 would be 1 Rod and 1 Unit, 14 would be one Rod and 4 Units. Once both numbers are made, ask the child to put the Rods together in one group and the Units together in another group. They should then count the total and write the corresponding number sentence on their whiteboard. This activity can be repeated with a range of different numbers, always making sure the units together equal a number less than 10. This activity can be extended when introducing the column method for addition, ensuring they understand they are adding 2 tens and not 2 ones.

Use Numicon equipment to SHOW the addition

As above, encourage the child to show the numbers with the Numicon and write the corresponding number sentences. If the child is able to see the value of the numbers in a variety of ways, it will help them to consolidate their place value understanding. This will, in turn, support them in their understanding of the 4 operations.

Using a 100 square

This is helpful to do if a child has been using the 100 square and has learnt about the patterns, for example, the number BELOW is 10 + the number above it. Model an addition sum in the following way. $12 + 13$: place a counter on 12, tell the child we are going to add 13 in parts, so $12 + 10$ and then that answer plus 3. The child can use their finger to move down (thereby adding 10) and then count on 3 more to reach the correct answer. Using the 100 square in this way will help the child see the magnitude of the numbers as well as working on their place value understanding. Repeat with various other numbers.

As the child moves onto larger numbers that require regrouping, such as $15 + 17$, this is good place to start by “counting on”.

Extending the activity

Use “story sums” or word problems to encourage the child to apply their understanding and use the equipment to solve a problem. For example “[child’s name] has 12 smarties, her friend gives her 13 more smarties. How many smarties does she now have?” Ask the child to write the number sentence on their whiteboard, in this case, $12 + 13$, and then use Dienes or Numicon to solve the problem.

Challenge – recognising when you need regrouping

Use playing cards, with 1 to 9s in black suits for 10s and in red suits for ones. Child picks 2 cards from each pile to make his/her sums. (Eg pick black 4 and 6 and red 3 and 9 to make $43 + 69$.) Discuss whether you will need regrouping, and if you do need it then pick different cards. (You need to regroup if the units or the tens add to 10 or over.) Demonstrate using equipment of choice. When you get a sum you can do – eg $34 + 25 = 59$ - do the sum and record the number sentences.