What is Partitioning?

Partitioning is breaking up a number into parts. In the early years, it commonly refers to the ability to think about numbers as made up of two parts. For example, 10 is 8 and 2, or 7 and 3. 16 is 10 and 6 or 8 and 8. This enables students to be able to break up numbers to make it easier to add or subtract. For example: 6 is made up of (2+4).Therefore 8+6 becomes easier to add if they think of it as (8+2+4).

In the early years of schooling, it is extremely important your child can explain how they have arrived at an answer. The components of partitioning helps your child understand numbers, their patterns and relationships. Your child needs to know how to partition addition and subtraction problems before they are taught algorithms.

For example: 18
                                        + 18

Algorithms are taught in the older years of schooling and are one strategy to use once your child understands and has mastered partitioning and other mental maths strategies.

To ensure your child is getting a consistent message, it is vital teachers and parents are teaching using similar strategies. Please use this brochure as a guide at home to help your child with their partitioning, thus ensuring they are being taught the same way.

HUNDRED AND TWENTY DAYS

Each morning students learn to reinforce number concepts by counting up to 120 days. Every day we add a pop stick to our ones container and watch as they increase! Once there are ten popsticks (ones), we bundle them up and put them into our tens container.

We discuss ideas such as:

- How many more pop sticks do we need to make a ten?
- What would happen if we double the number of popsticks? or
- How many tens and ones do we have today?

120 days of school helps us to practise our mental maths, partitioning and helps reinforce our place value knowledge!

HOMEWORK

Your child will be able to complete double digit addition and subtraction problems by using their knowledge of place value and strategies, such as, *friendly numbers, friends of ten, make a ten, doubles, near doubles and doubles plus 2*. They provide an excellent bank of strategies to mentally work out larger sums. Please encourage your child to use these strategies when completing homework at home.

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Partitioning
Helping My Child At Home
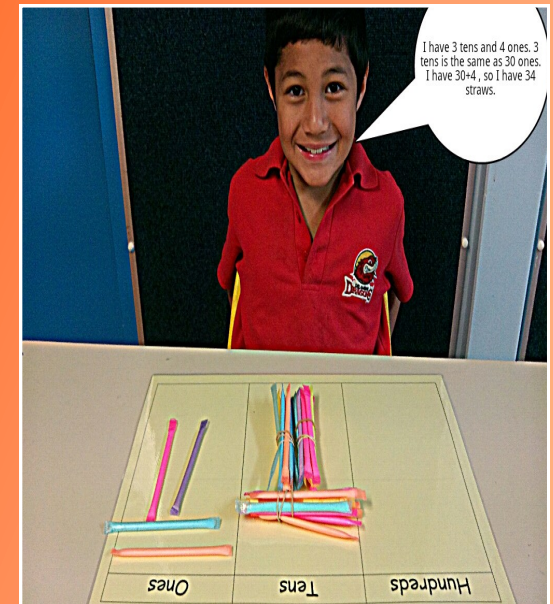
I have 3 tens and 4 ones. 3 tens is the same as 30 ones. I have 30+4 , so I have 34 straws.

Place Value

Place value is an extremely important component of partitioning. It is imperative your child can break numbers apart to be able to individually work with the ones, tens and/or hundreds of that number. For example, the number 15 can be broken into 5 ones and 1 ten. 1 ten is the same as 10 ones. Therefore, 10+5=15.

Your child is able to use this knowledge of breaking numbers apart to easily add large numbers mentally. For example, if your child was given the sum 23+23= they would be able to break the two numbers into tens and ones to add it together easier. 3+3=6 and 20+20=40. Therefore, the sum becomes 40+6=46.

Friendly Numbers (Place Value Knowledge)

Place value helps your child master the mental strategy *friendly numbers*. Friendly numbers are sums where your child needs to be able to mentally add numbers to ten. For example, 10+5=, 10+8=, 10+7= etc. The ability to add and pull numbers apart to make multiples of ten and have leftovers (ones) helps your child to understand and explain how they got an answer.

Students that have mastered their friendly numbers can apply the same principles to expanded notation.

Expanded Notation

Expanded notation allows your child to break numbers into ones, tens and hundreds. For example, 378 is broken up into 300+70+8. Expanded notation helps your child to complete subtraction problems easily. For example, if your child was given the sum 321-20= they would be able to expand 321 to 300+20+1 and visually recognise the number they are taking away. Therefore, the sum becomes 300+0+1=301.

Friends of Ten

'*Friends of Ten*' are the paired combinations that make ten. For example, 8 and 2, 6 and 4, 9 and 1. To be able to work out sums mentally, it is essential your child knows their 'Friends of Ten'. Once they know their 'Friends of Ten' they will be able to pull bigger numbers apart to **make a ten.** For example, if your child was given the sum 8+7 they would be able to break the 7 into (2+5). Therefore, (8+2) makes a friend of ten and 5 more makes 15.

Make a Ten

'**Make a Te**n' is very similar to '*Friends of Ten*' as it requires your child to mentally recall the combinations that make ten. A great way to demonstrate making a ten is to use ten frames.
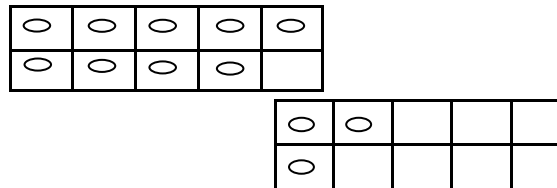
Your child is able to visually see they have nine and an empty box. They need to borrow a one from the three to fill this empty box thus making a ten. This leaves two on the other board. It is important to tell your child to make a ten with the biggest number in the sum.

Making flash cards with the number sentence and matching ten frames is a great way to practise making ten.
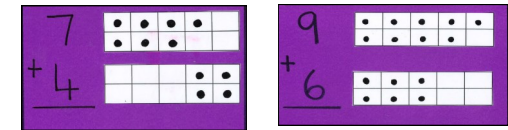
Doubles and Near Doubles

Learning their *doubles* to 20 will assist your child with knowing many double digit addition sums. Automatic recall will allow students to:
- Automatically recite double facts (6+6, 60+60, 600+600)
- Automatically recite near double facts (6+7, 60+70, 600+700)
- Helps with double digit addition (12+12= 10+10+2+2)

Doubles Plus Two

Doubles plus two is an excellent strategy to use when working out addition problems. For example, (7+9) is made up of double 7 and two left over (7+7+2). This strategy is more efficient compared to counting on from the larger number. It allows you child to work with numbers quickly and flexibly.