

## What is the language of maths?

**Part-part-whole (PPW):** refers to how a whole number can be split into parts. The PPW model is used in each grade from prep.

**Subitise:** refers to a way of instantly counting. It refers to getting to how many in a set without going through counting each one in the set's position.

**Partitioning:** refers to breaking a number into parts without changing the overall quantity. Partitioning is used in each grade from prep, where they recognise parts in small numbers (eg 4 is composed as 2 and 2; 10 is composed of 3 and 7 etc) and continue using throughout all grades. Partitioning is characterised into 3 types – standard, non-standard and flexible – and is written both in numbers and words:

**Standard partitioning** = splitting numbers into the individual values of each digit in a number.

Example 485:  $400 + 80 + 5$

4 hundreds, 8 tens, 5 ones

**Non-Standard Partitioning** = is breaking numbers in ways that don't use the place value of each digit.

Example 485:  $480 + 5$

48 tens and 5 ones

**Flexible partitioning** = shows flexible ways to break the number up.

Example  $485 = 250 + 120 + 30 + 65 + 11 + 9$

25 tens and 12 tens and 3 tens and 65 ones and 11 ones and 9 ones

## Why is this important?

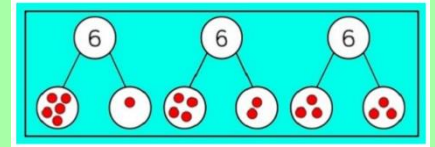
**Part-part whole:** Part-part-whole allows students to see the relationship between a number and its component parts. This helps students make connections between addition and subtraction, particularly in finding missing parts.

**Subitise:** Subitising is an essential part of developing number sense in the early years by helping children to relate numbers to actual items or groups of items. Subitising also assists in the development of number sense by continually developing the concept that refers to a child's fluidity and flexibility with numbers and what numbers mean.

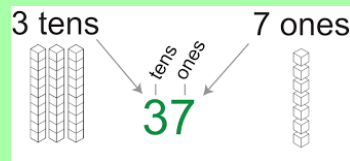
**Partitioning:** It is extremely important your child can explain how they have arrived at an answer. Partitioning helps your child understand numbers, their patterns and relationships. We want children to reason mathematically; they need to be asking themselves can I do this in my head? Is there a more efficient strategy I could use? Once your child understands partitioning, understanding algorithms (written addition, subtraction, multiplication, division) becomes more fluid.

## What does the teaching and learning look like?

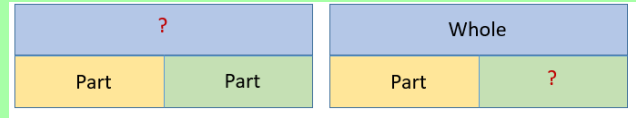
**PPW – early years:** Children use hands-on tools to explore how numbers are made up of smaller numbers. For example, using counters in the PPW model here, they see that 6 can be made up of 5 and 1; 4 and 2; or 3 and 3.



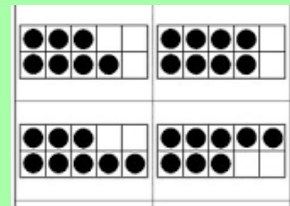
MAB blocks are used to show how numbers are made up of hundreds, tens, ones etc.



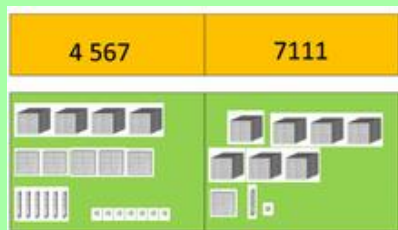
**PPW – upper years:** Children use PPW to complete addition and subtraction.  
missing whole: part + part = whole  
missing part: whole – part = part.



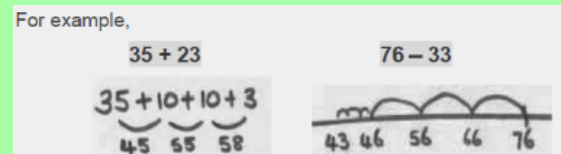
**Subitise:** Subitising can be represented concretely with materials, visually with pictures and diagrams, symbolically in the form of number sentences and models and mentally for the purposes of number fact recall and computation.



**Partitioning:** Represented with concrete materials and on number expanders.



Partitioning becomes critical for efficient mental computation and related written methods; when children can see how a number is broken into parts, they can add or subtract it easier.



## How do we know how our children are progressing?

Mango Hill utilises the scales to closely monitor all childrens' progress. PPW, subitising and partitioning are integrated within most maths units, and are on scales at various times throughout the year, across all grades. Progress in partitioning specifically can be monitored through a child's ability to quickly / fluently calculate addition and subtraction mentally.

## What support can be provided at home?

Parents can assist in their child's skills in PPW, subitising and partitioning at home through many incidentals – practice making groups of 10 things; make links between play and numbers in real life (cooking, sorting, matching etc); use language such as 'how many / less' etc); board games that involve dice; count, match, sort, order; have your child assist with the money when shopping; ask questions about numbers such 'if there are 65 pages in the book and we've read 20, how many more to go?';