

PART-WHOLE RELATIONSHIP (+/-)

PART-WHOLE RELATIONSHIPS



The ability to understand that numbers can be split into parts. Understanding this relationship between the whole number and their component parts helps learners to make the connections between addition and subtraction.

Part-Whole Relationship Mat

Part-Whole Relationship Mat	
Whole	
Part	Part



<https://youtu.be/BaRviDd3-Tg>

KEY IDEA: PART-WHOLE RELATIONSHIP (+ ONLY)

Separation of parts in addition

INITIALLY

Initially, the child may lose one number **INSIDE** of another number when counting to solve an addition problem, where the second number is **GREATER** than the first number, e.g. $5+7=7$

Or, they know the sum is a larger number, but they are unsure of how to count.

$$\textcircled{5} + \textcircled{7} = \textcircled{7}$$



LATER ON

Later on, the child understands that when adding, the two numbers are separate parts.

$$\textcircled{5} + \textcircled{7} = 12$$



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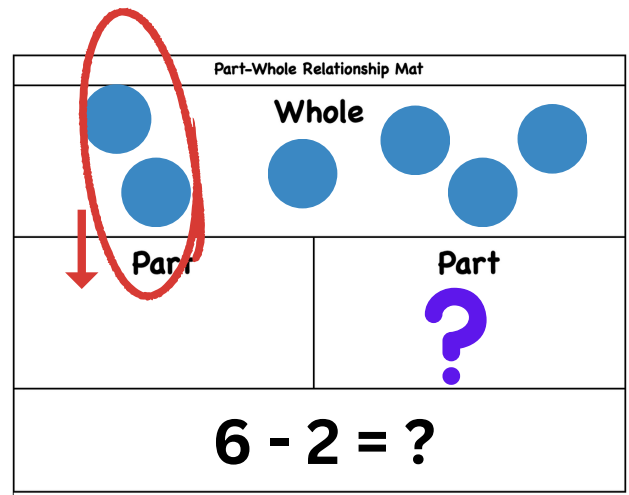
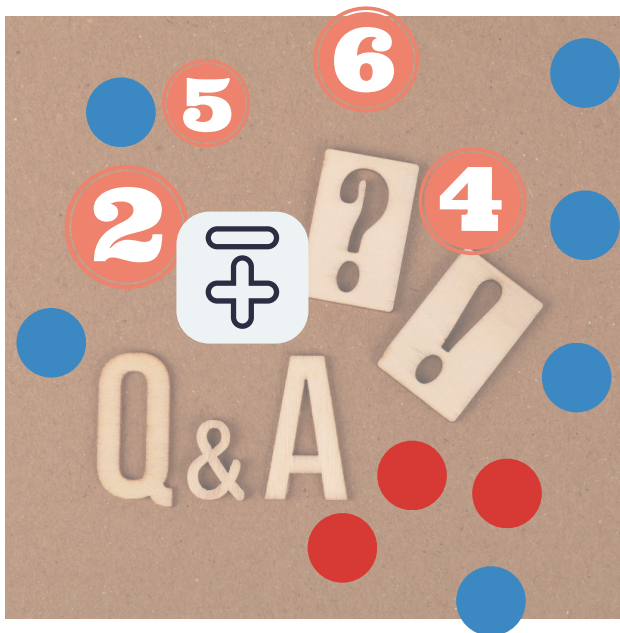
Of Addition and Subtraction

INITIALLY

Initially, the child who is not yet able to add or subtract has difficulty constructing the relationship between the whole and the part that is added or subtracted (removed).

LATER ON

Later on, the child is able to simultaneously think about the parts they are adding or removing and their relationship to the whole.



KEY IDEA: PART-WHOLE RELATIONSHIP (+/-)

Inverse Relationship between addition and subtraction.

INITIALLY

Initially, the child who has not yet constructed this key idea will use trial and error to determine the value of the missing number (addend) in the addition equation.

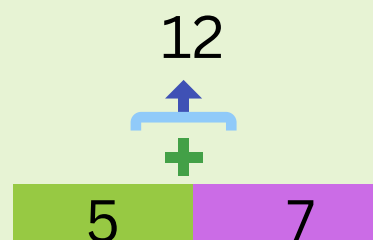
Example:

$$2 + ? = 7 \text{ or } ? + 3 = 9$$

LATER ON

When adding or subtracting the child understands that if the whole is split into two parts, then the two parts add up to the whole, minus one part is equal to the other part. Example:

$$\begin{array}{l} 5 + 7 = 12 \text{ then} \\ 12 - 7 = 5 \text{ and} \\ 12 - 5 = 7 \end{array}$$



These children understand that addition & subtraction are an inverse relationship. While it is beyond the primary curriculum, this Key Idea is essential to later understanding that if:

$$a + b = c \text{ then } c - a = b \text{ and } c - b = a$$

ALGEBRAIC THINKING