Number Bonds

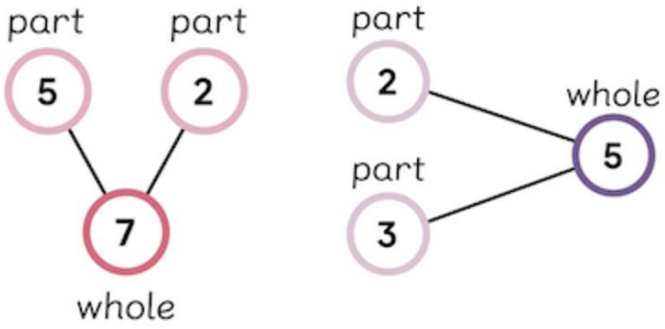
Number bonds show how numbers are split or combined. An essential strategy of mathematics, number bonds reflect the 'part-part-whole' relationship of numbers. At Bluecoat we begin teaching this concept in Early Years and aim for children to have mastered this by the end of Key Stage 1.

.**Why are number bonds part of mathematics?**

Number bonds let students split numbers in useful ways. They show how numbers join together, and how they break down into component parts. When used in Year 1, number bonds forge the number sense needed for children to move to addition and subtraction. As they progress, number bonds become an essential mental problem-solving strategy.

How do number bonds work?

Number bonds can be represented by circles connected by lines. The 'whole' is written in the first circle, while the 'parts' are in the adjoining circles.



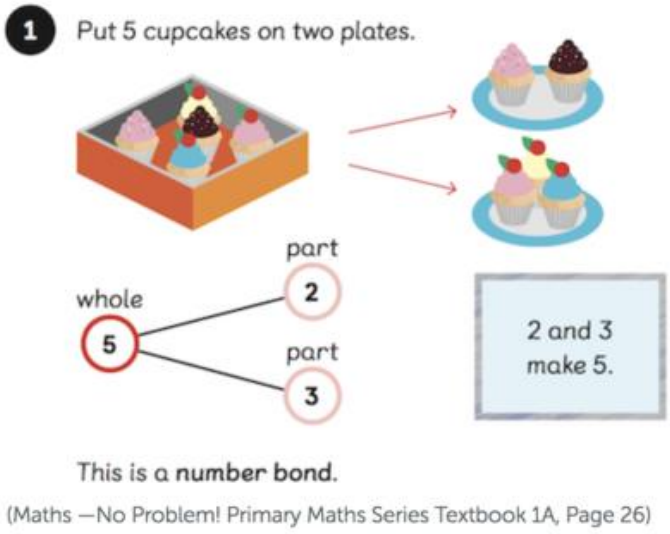
<u>How we teach number bonds & how you can support at home</u>

At Bluecoat, we introduce children to number bonds through the Concrete, Pictorial, Abstract (CPA) approach. Here's just one way to introduce and teach number bonds:

<u>Concrete step</u>

Children start out by counting familiar real-world objects that they can interact with. They then use counters to represent the real-world objects. From here, they progress to grouping counters into two groups.

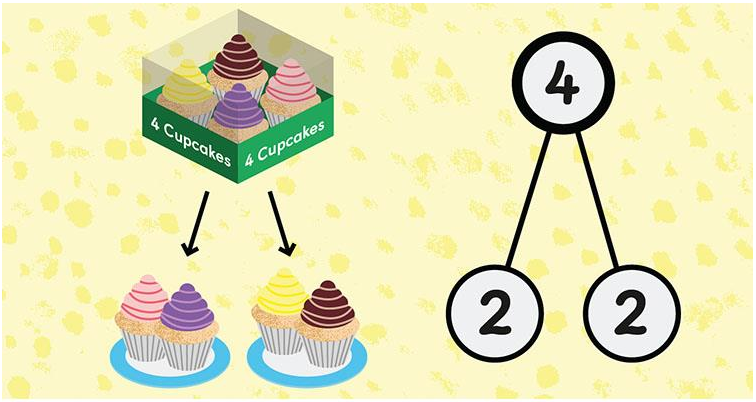
By putting five counters into two groups, children learn the different ways that five can be made. For example, 3 and 2 as illustrated below. With further exploration, children work out other ways to break numbers into two groups.



(Maths —No Problem! Primary Maths Series Textbook 1A, Page 26)

Pictorial step

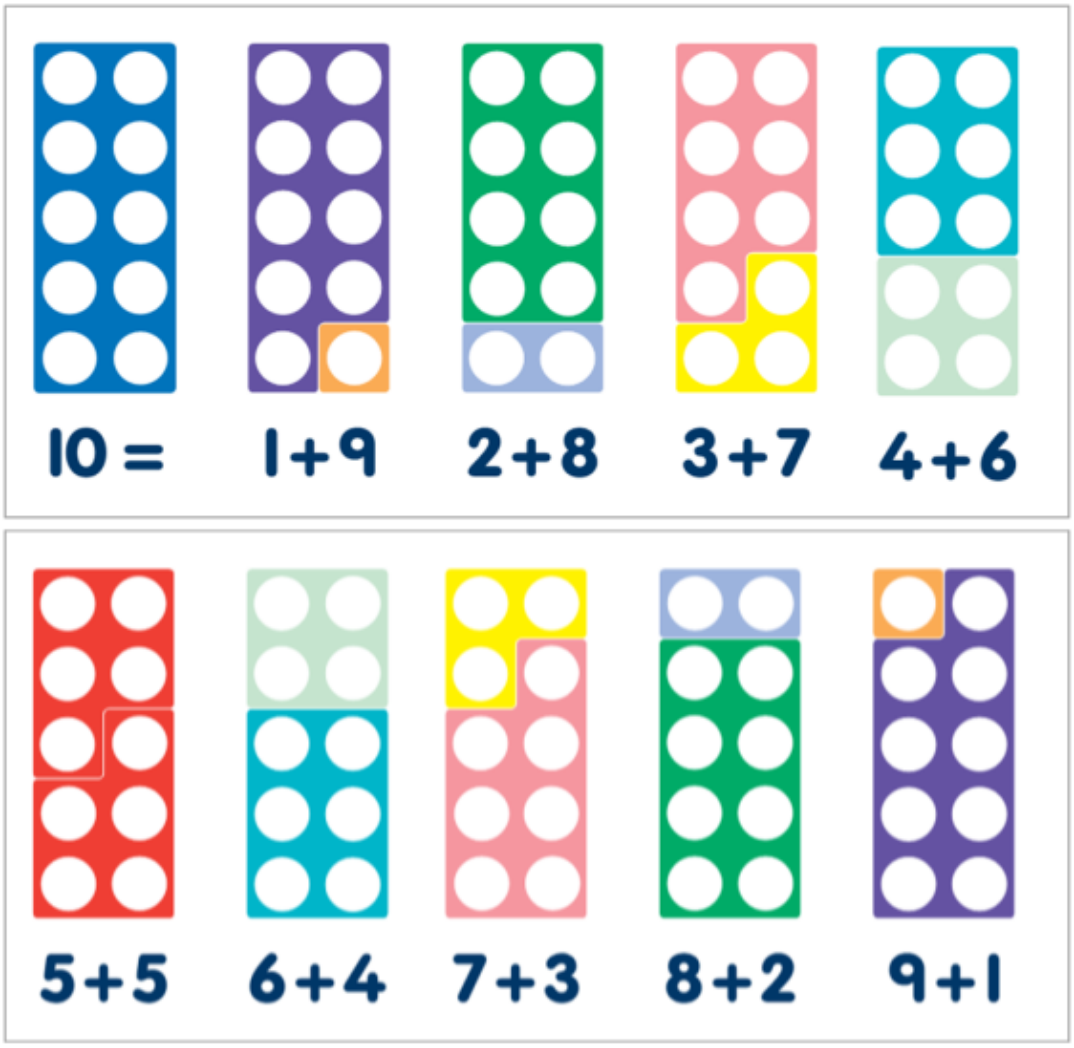
Now that they understand the concept with hands-on objects and experience, children progress to drawing and writing number bonds. Early number bond explorations might simply reflect the two groups of counters that they created during the concrete step, along with other combinations.



Abstract step

Finally, children progress to representing abstract problems using mathematical notation (for example, 3 + 2 = 5).

Making 10



The concept of ‘ten-ness’ is the foundation of place value and one of the most important concepts for children to learn in maths. When children are able to compose and decompose numbers into tens, they will be able to easily manipulate numbers mentally. Children should have many opportunities to combine and separate numbers to ten and come to clearly see and understand how these ‘basic facts’ are fundamental building blocks of our number system.

As they work with numbers greater than ten, students will come to know about ‘bridging through 10’ and about ‘rounding to ten’. Children should be encouraged to *know and have an intuitive feeling* for ten to enable them to readily apply this in solving problems that involve partitioning and combining larger numbers and sets. .