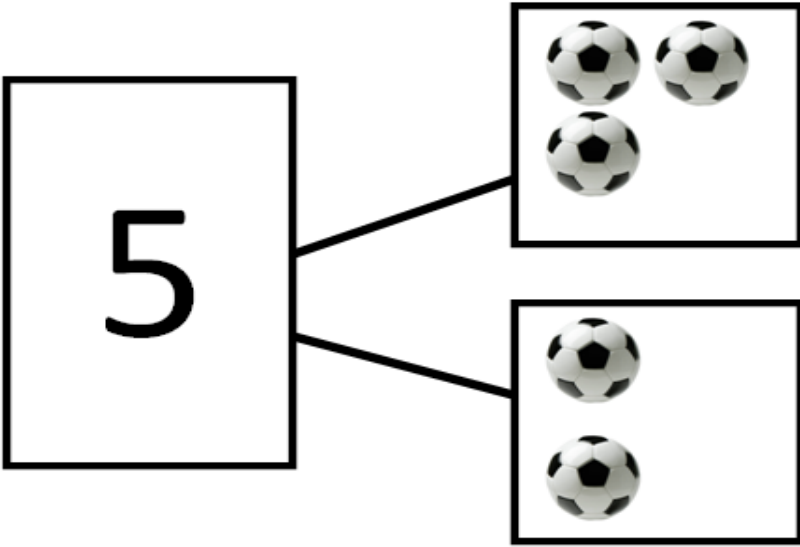


Number Bonds

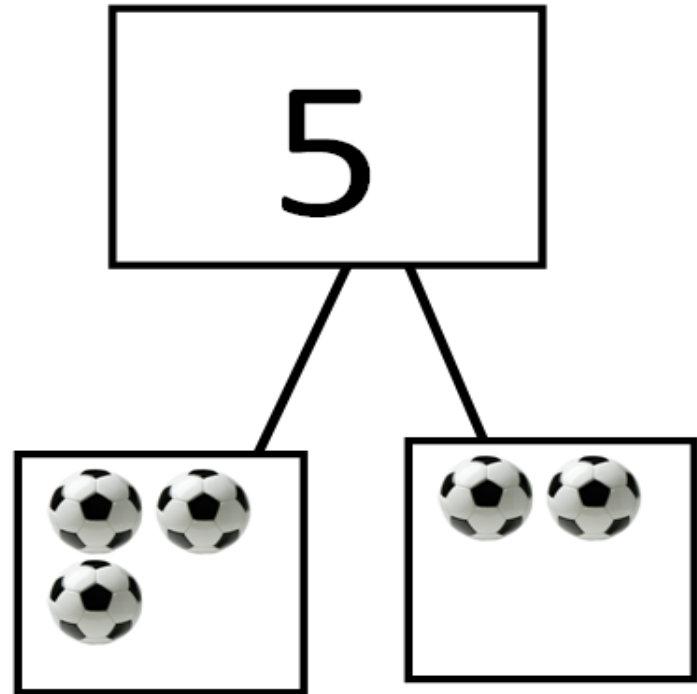


A number bond is the mental picture of the relationship between a number and the parts that combine to make it. The concept of number bonds is a very basic foundation of the understanding of numbers. A whole thing that is made of parts. If you know the parts, you can put them together to find the whole. If you know the whole and one of the parts, you take away the part you know to find the other part.





A number bond is the mental picture of the relationship between a number and the parts that combine to make it. Number bonds often look like this.

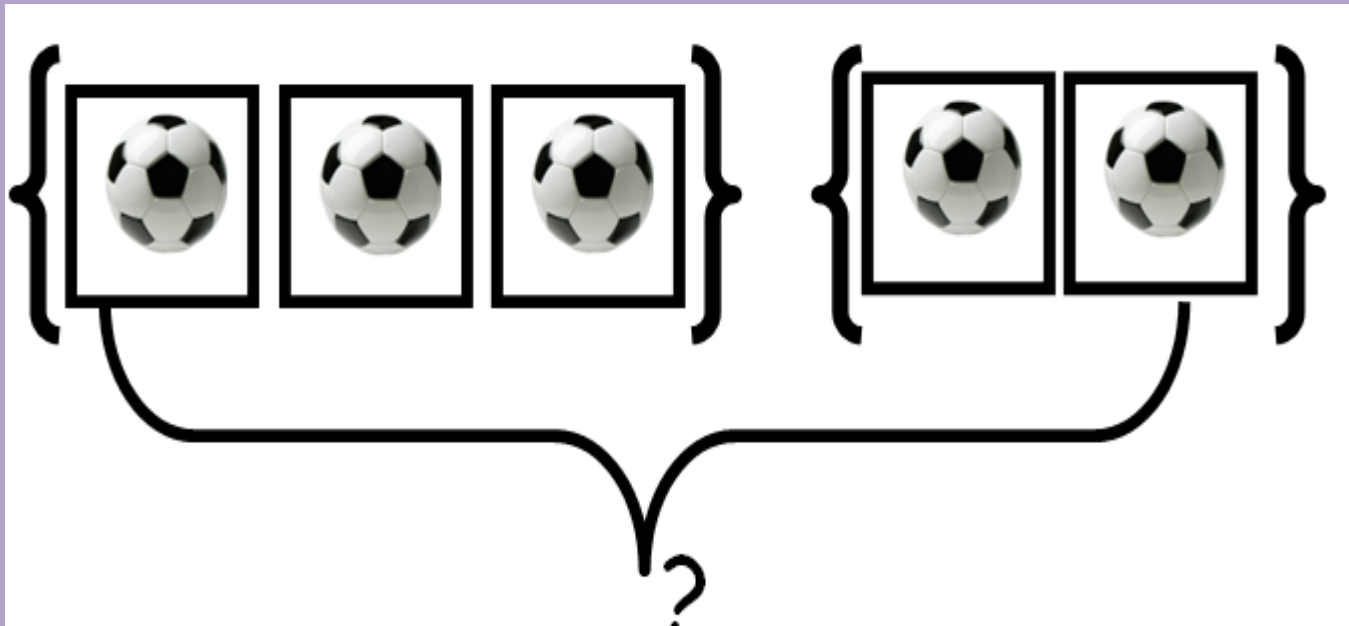


To illustrate the part-part- whole concept, take a look at the following problem:

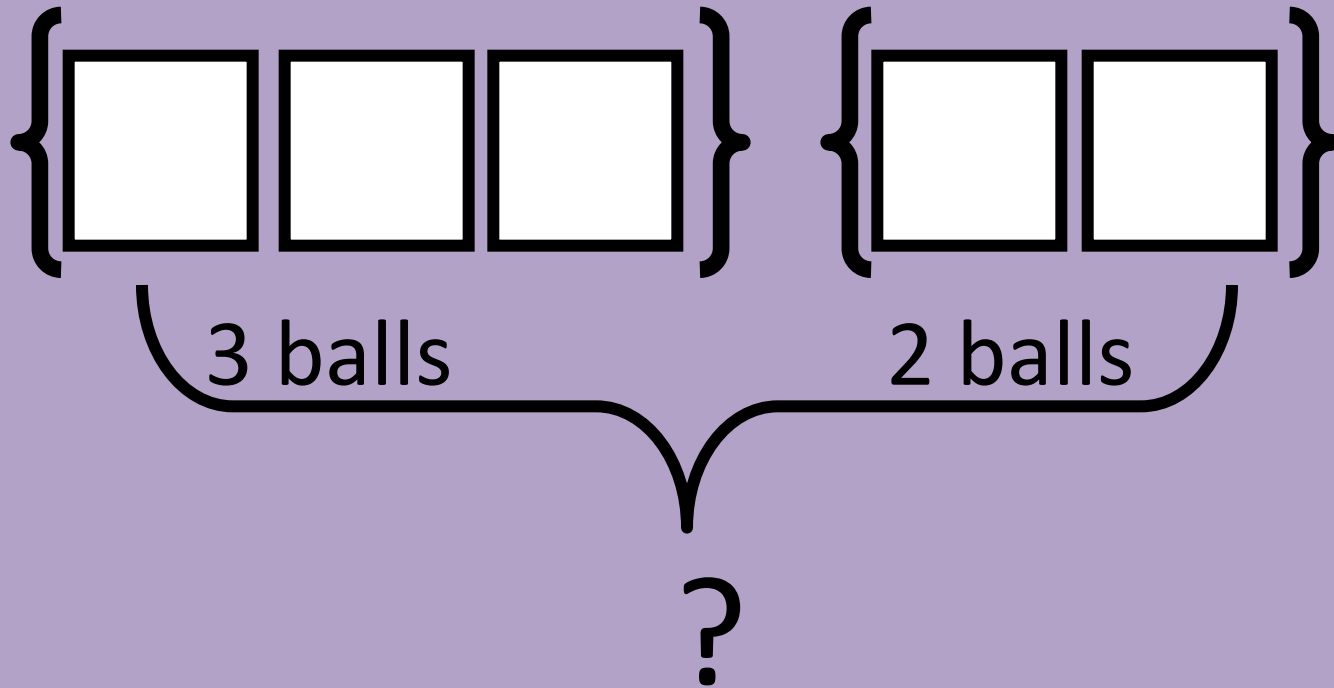
Ann has 3 balls. Bob has 2 balls. How many balls do they have all together? We first give the child concrete objects, like 3 balls and 2 balls, and let the child put the two groups of objects together to find the total.



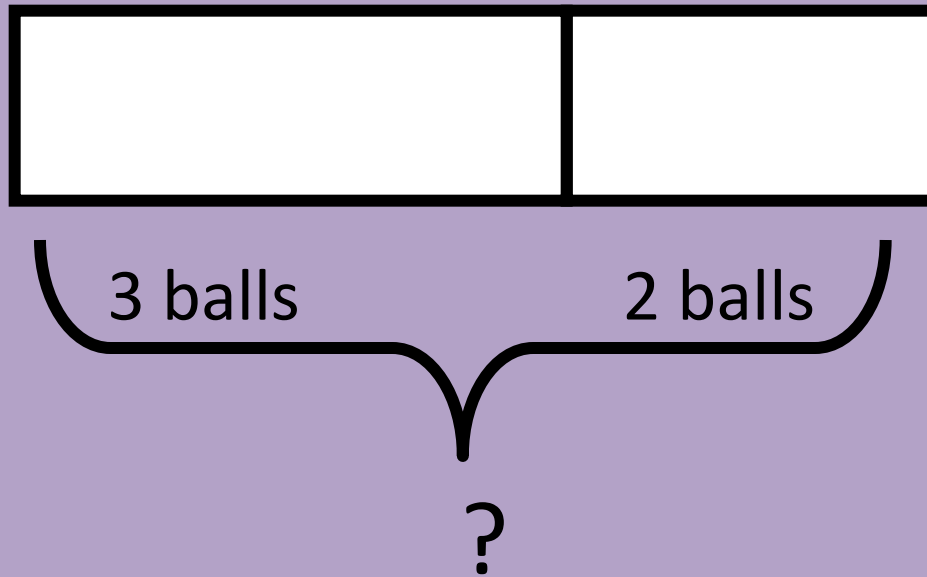
When they are comfortable with adding the concrete objects, we can then proceed to teach them to draw pictures of the concrete objects to illustrate the equation $3+2=5$.



After that, we can teach the kids to draw the boxes without the objects.



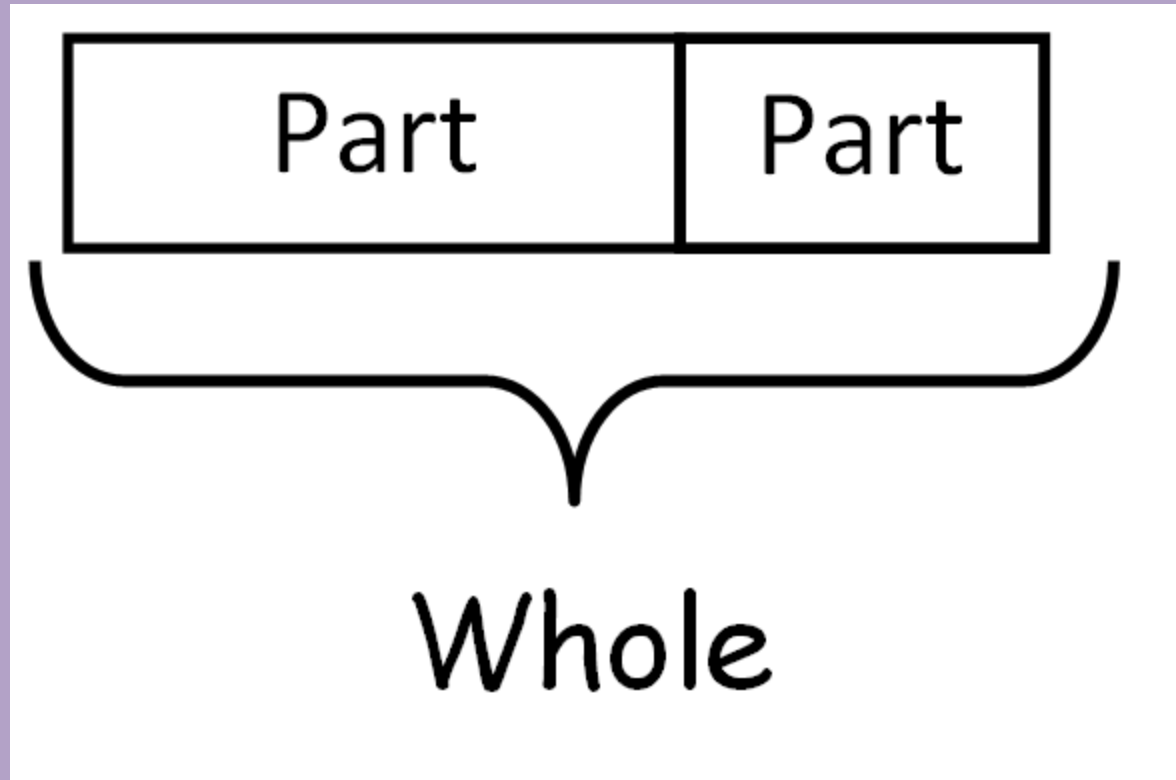
Eventually the equation can be visualized as a whole made up of 2 parts and they can easily see that to find the whole, they just need to add up the 2 parts.



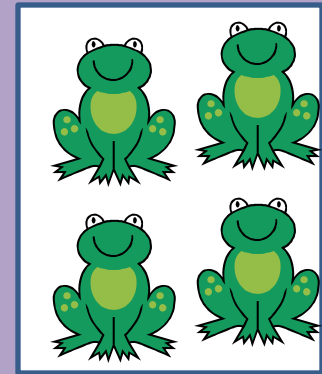
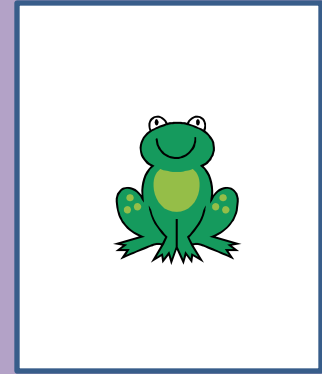
So, $3+2=5$. Therefore, they have 5 balls altogether.



We can see the relationship among the 3 quantities (the whole and 2 parts).

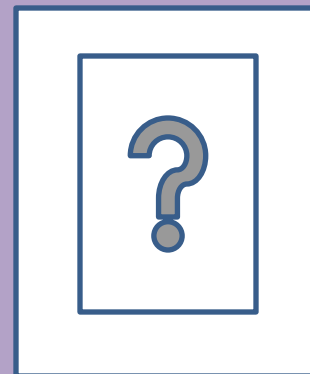
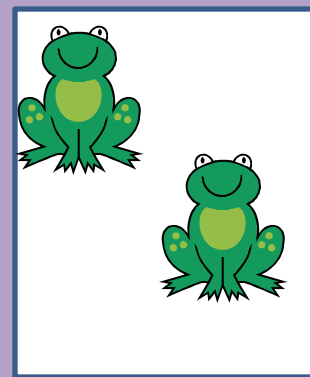
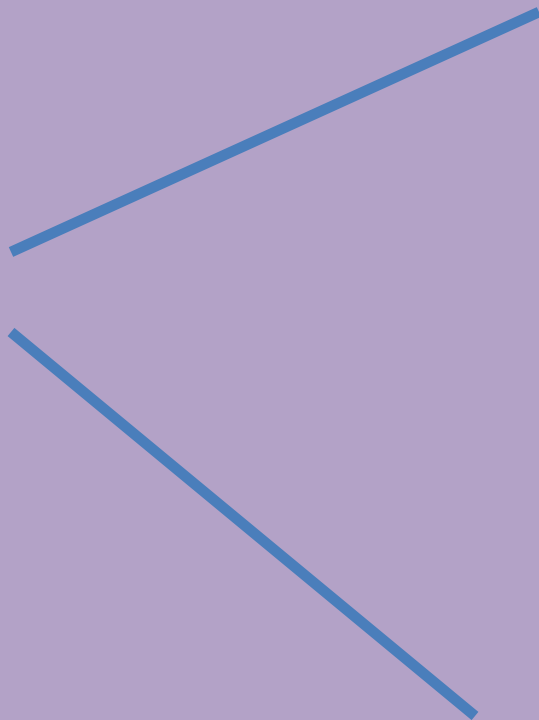


To find the whole given two parts, just add
the two parts together: Part + Part = Whole



To find one part when we are given the whole and the other part, just subtract the given part (or known part) from the whole.

Whole - Part = Part



Number bonds also help children to see all the combinations and patterns of a number.

$$0+5=5$$

$$5-0=5$$

$$1+4=5$$

$$5-1=4$$

$$2+3=5$$

$$5-2=3$$

$$3+2=5$$

$$5-3=2$$

$$4+1=5$$

$$5-1=4$$

$$5+0=5$$

$$5-0=5$$



Number bonds are visual ways to help children learn the “how and why” numbers are made.

5

