Appendix C: Numicon Basics
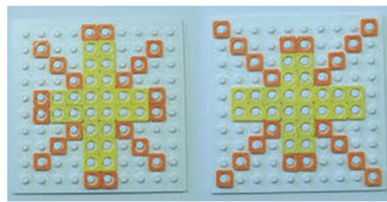
Available through Oxford University Press or www.BookDepository.com

Getting to know Numicon

We introduce Numicon by playing with the shapes without even talking about how they represent numbers. The student will start to notice patterns as they play.

Counting with Numicon

To begin counting with Numicon, you can start by putting them in order, smallest to largest. As you put them in order, place the pieces with holes sticking up going the same direction to help student's see the patterns. There are pegs you can count as you fill in the holes. You can also put any small object in the holes and count as you fill each one. Some examples are beans, playdoh balls, macaroni, small rocks, pennies, etc.
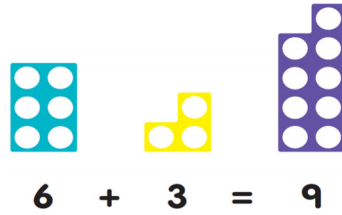

Put two or more shapes together to create numbers larger than 10. This also helps students visualize and learn place value.
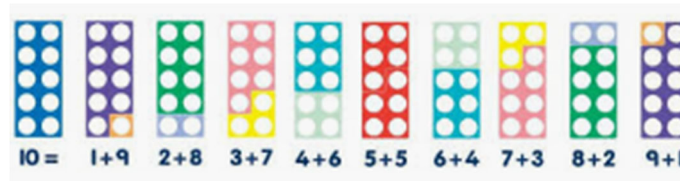
Addition with Numicon

It is easy to figure out addition problems using numicon shapes. When you put two or more shapes together – it creates the new shape.
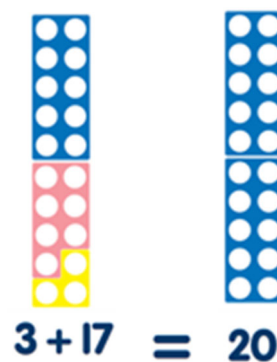
$$6 \quad + \quad 3 \quad = \quad 9$$

3 + 4 =7

You can use Numicon shapes to show number pairs. This example shows all the number pairs for 10:

10 =   1+9   2+8   3+7   4+6   5+5   6+4   7+3   8+2   9+1

You can use multiple shapes to create and work with numbers larger than 10:
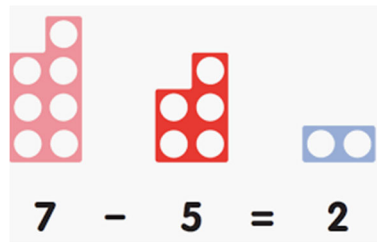
$$3 + 17 \quad = \quad 20$$

Subtraction with Numicon

Subtraction covers are the same shape as the Numicon shapes they represent. When you use them for subtraction, the shape that is remaining is the answer!

$10 - 3 = 7$

Students may begin to visualize the shapes without using the subtraction covers after some practice:

$7 - 5 = 2$

Skip counting with Numicon

Skip counting using multiple Numicon shapes provides the students with a visual representation of repeated addition, multiplication and division.

2   4   6   8   10

5   10   15   20   25

10   20   30   40   50

Multiplication with Numicon

Using Numicon shapes when solving multiplication provides the student with a powerful visual representation of what multiplying really means.

In this example, you can choose 8 of the 2 shapes or you can choose 2 of the 8 shapes to solve the problem. They choose to skip count by 2s. Likewise, in the second example, they are choosing to find 6 of the 5 shapes and skip count by 5 to find the answer.
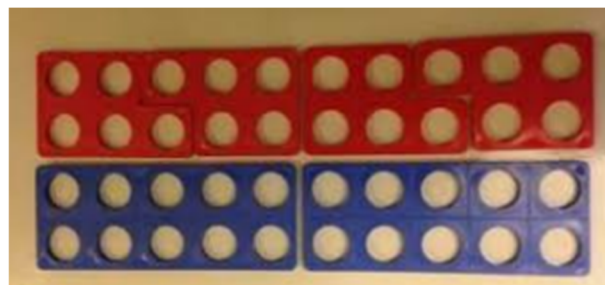

You can represent 3 of the 5 shapes as: 5+5+5   OR   5X3   Multiplication is repeated addition.
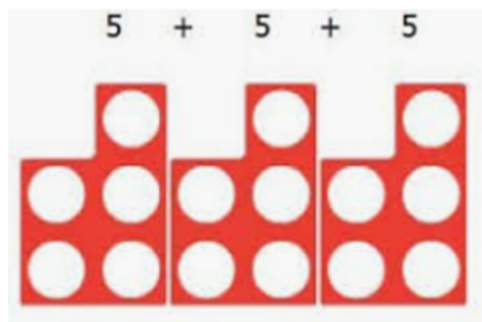
This example shows you can use 3 – 4 shapes or 4-3 shapes to get 12.
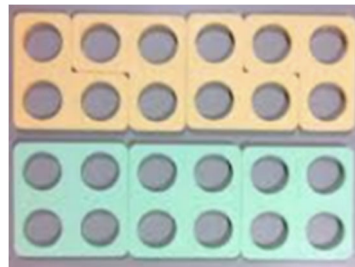

This one shows 5 X 4 = 20

Division with Numicon

Numicon shapes can be used to determine how many times a number can fit into another number.

These examples show how you can divide 12 by 3 to get an answer of 4! There are four pegs in each group in the first example and 4 three shapes are needed to create the 12 shape in the second example:
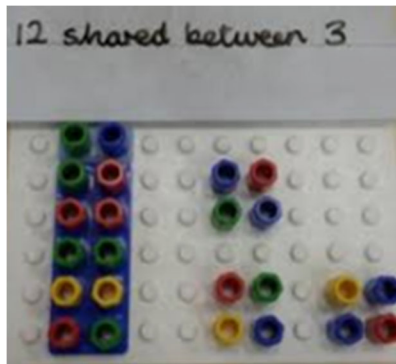
This example shows how Numicon shapes can be used to fit on top of a number to determine the answer. It also demonstrate how you can determine the remainder.
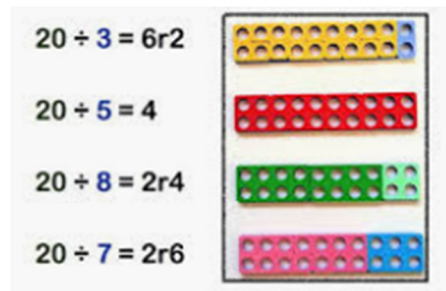
You can even use Numicon to help visualize short division: