Most children with Down syndrome find numeracy difficult, more difficult than literacy. Some of the challenges children face are:

- Difficulties with working memory;
- Difficulties with recognising and remembering patterns in number;
- Difficulties with understanding and expressing mathematical language;
- The abstract nature of number.

Most children with Down syndrome find numeracy difficult. Early numeracy skills are learnt through play. Numicon can be used as a visual support for numeracy. Understanding of number, time and money are key areas of numeracy.
Counting Principles

**Have a count word sequence**

Learning counting words and learning to rote count to 10. Learning that the numbers are always in a stable order.

- Counting nursery rhymes e.g. 1,2,3,4,5 Once I caught a fish alive or 1,2 Buckle my shoe.
- Counting actions and objects throughout the day e.g. stairs, cups, food.
- 1,2,3 GO! games

**1:1 correspondence**

Being able to know that one object is counted as one; be able to point at and count objects accurately.

- Hand-over-hand counting
- Clapping and counting
- ‘Modelling’ counting – show them how it’s done
- Action counting (jumping, bouncing on knee, patting parts of body)

**Cardinality**

You count to find out how many, and the last number is the **cardinal** number – it tells you how many. Children show understanding of this when they can give you ‘x’ number of something.

- Counting sets of objects
- Counting things into a bowl or bucket
- Counting out things that the child gets e.g. You can have five grapes. Let’s count out five.
- Modelling counting ‘how many’ e.g. how many blocks in the tower?
You’ll end up with the same number of things no matter what order they are in when you count them.

- Practise counting objects in different ways e.g. left to right and right to left.
- Counting objects scattered randomly, rather than always in a row.

The quantity is fixed however the materials are arranged; it doesn’t matter what way the objects are sitting on the table or if you can see them or not.

- Counting objects and then hiding them from view – how many?
- Counting two identical sets arranged in different ways.
Mathematical Language

Children will learn a lot of mathematical language through play. Model these words in your commentary when you are playing with your child.

**Position**
- next to, between, behind, under, in front, over, high, on top, up, in, on, first, last

**Size**
- tall, big, little, small, medium, long, short, tiny, large, thick, thin, enormous

**Capacity**
- full, empty, half full, enough

**Distance**
- close, far away

**Weight**
- heavy, heavier, light, lightest

**Shape**
- circle, square, triangle, corners, flat, round

**Money**
- pence, pounds, enough, change, costs, how much

**Time**
- today, tomorrow, yesterday, early, late, morning, evening, day, night, first, then, fast, slow
Numicon is a maths resource that uses a series of structured images to represent numbers. It is a useful resource for children with Down syndrome to learn about number because it is visual and tactile.

It can be quite difficult to explain to a child the mathematical concept of ‘five’… but the Numicon shape for ‘five’ looks like ‘one less’ than six and ‘one more’ than four.

Numicon helps children to understand patterns and relationships between numbers, which is essential for continued success in numeracy. In time, it can be used to demonstrate addition, subtraction, multiplication and division. It is important to note that Numicon should be used alongside a variety of other mathematical resources.