

Developing Number & Math's Skills

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Number & Math's Skills

- Many children with Down Syndrome enjoy numbers but most find them difficult.
- There is very little research to draw on.
- Language delay and delay in Working Memory will influence Number development.



Teaching Students with Down Syndrome

- Make full use of visual, practical teaching methods.
- Relate to interests and meaningful skills in everyday life.
- Teach language for number.
- Learn to say number words.
- Learning the count sequence is a challenge as memorising is difficult
- Lots of practice at each stage
- New words / concepts – always say the ‘key word’ last ([Ramascar et al](#))



Teaching Math's Vocabulary & Basic Concepts

- Shape & colour words
 - Size words
 - Order words
 - Comparison words
-
- **Play matching & sorting games**
 - **Build with shape bricks**



Mastering Counting Principles

- 1-1 correspondence
- Stable Order
- Cardinality
- Order Irrelevance
- Abstraction
- Construction of Number



Takes Time – (5-7 Years for typically developing children)



1-5 first!

Consolidating numbers 1-5

- Recognising 1,2 and then 3
- Seeing that adding 1 item to 2 items gives 3
- Seeing that taking 1 item from 3 items gives 2
- Repeatedly seeing the composition and decomposition of 2 and 3
- Leads to fluency with simple addition and subtraction
- Then work with 4 and 5

The child must have 100% knowledge of this before moving on



Vital – Slowly, Steadily & Carefully

Activities to Teach Counting and Number

- Visual support – number line
- Lots of games – objects in 1,2,3 sets
- Linear Board Game
- Lots of practice – ‘overlearning’
- Playing:
 - Counting Games
 - Sing Songs
 - Use Displays
- Play Board Games – children of all ages



Activities to Teach Number Basics

- Correspondence games- toys/objects
- 'Give Me' games – ending with 'How many?'



Activities to Teach Number Basics

Numicon

- visual-spatial representation of number



Numicon

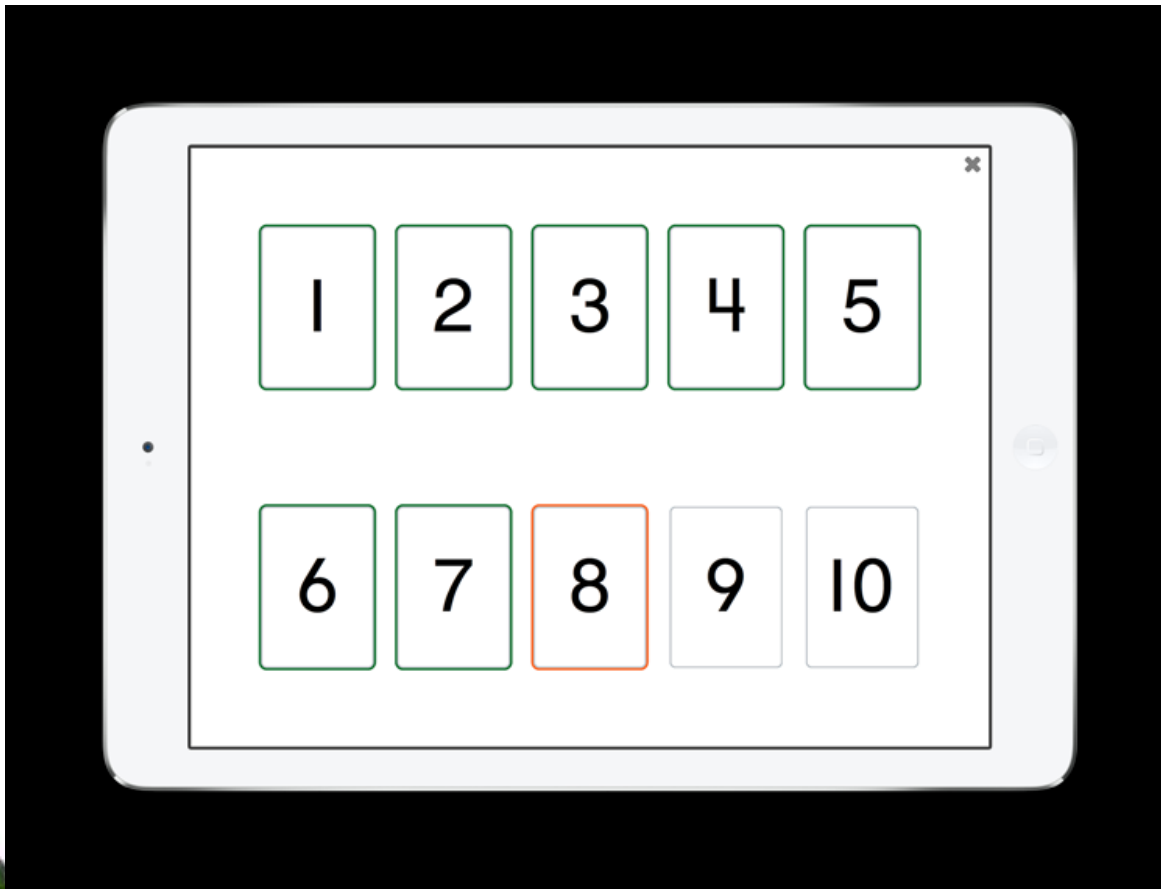
Caution

- Numicon should not be used to teach basic counting
- Children using Numicon alone can have problems with learning about the cardinality of number



Programme

- See and Learn First Counting Kit



Visual Supports

Caution

Wall Frieze 1-10

- Pictures should always be the same and preferably in the same colour.
- It can be confusing if different pictures are used for each number.



Teaching Addition

Moving from 'Counting All' to 'Counting On'

- Visually supporting counting on with a numeral
- Visually supporting counting on with a number line
- Using Numicon
 - Making one more
 - Adding one on
 - Doubles $1+1$; $2+2$



Money

No easy 'quick fix' for teaching about money

Coin size can also be problematic –
the 5 cents coin is 'bigger' than the 10 cents coin!



Time

A slow process – patience is needed Long Term Learning

- Relate to events in the day
- Learn to tell the time
- Wear a watch
- Digital / analogue / 24 hour clock
- Calendar

- Days
- Weeks
- Months



Language of Time

- Language for time matters
 - Today
 - Tomorrow
 - Yesterday

 - On Thursday I will

- Passing Time

- » Future
- » Past



Simple Calendar

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
School	School Swimming	School	School	School	Shopping Grandma	Church Playground

Calendar in a long continuous strip not in the traditional 'square' format



Summary

Number challenges most students with Down Syndrome

- Children will need support for measurement, arithmetic, mental calculation and problem-solving.
- Start to count coins and use money early
- Link maths to everyday life and make it relevant



Acknowledgement

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Discovering Potential Transforming Lives

