

Special Education Support Service: Down Syndrome Teaching Number

Note: The Special Education Support Service wishes to acknowledge and thank Fidelma Brady, Education Officer with Down Syndrome Ireland for permission to use this document.

The principles for teaching number are the same as for all pupils - but one needs to also consider language and working memory difficulties

1. Introduce numbers and language for shape, size, colour, from 3 years of age, using matching, selecting and simple games
2. Learn the number sequence with the written numerals from the start -repetition is important
3. Play counting games to teach one-to-one correspondence
4. And end with "How many?" to encourage repetition of last count word to teach cardinality
5. Play counting games which end before the whole set has been counted - also to encourage understanding of cardinality
6. Play counting games that start at numbers other than one, once set has been counted, to prepare for addition and counting on
7. Being able to add is important for understanding place value (not just counting practice)
8. Use visual supports, digit cards, number lines, number squares and use materials which really do help the pupil to see the relationships between numbers (Numicon, Diennes)
9. There are no short cuts - pupil must know the count sequence and then understand cardinality before he/she will be able to count-on. Pupil must be able to count-on to add and have much practise before he/she will understand commutativity (e.g. $2+4 = 4+2$) and place value
10. Writing numbers helps pupil to understand place value in terms of how we write large numbers but addition helps pupil to understand $10=10$ units, $5 = 5$ units, $2 = 2$ units.
11. Until pupil understands tens and units, he/she has no basis to cope with the decimal system for money or for weights and measures
12. However, pupils who do not manage to grasp the basic concepts will still be able to learn to use money, scales etc by adapting teaching targets in their teenage years
13. Small steps, much practice, visual supports for each step (mental maths will be very difficult given typical working memory spans)



**14. Pupils struggling to understand the number system should still try all other areas of the maths curriculum
e.g. simple fractions, geometry, plots, graphs**