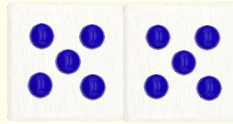
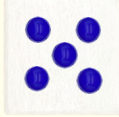


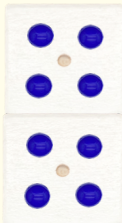
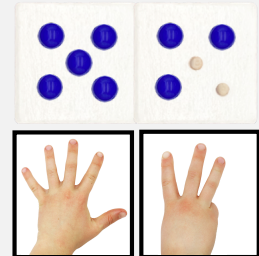
Many internationally recognised dyscalculia specialists use dot patterns to represent numbers as they are easier to subitise and therefore encourage instant recognition of numbers. Each of the three different sets of representations discussed below have numbers represented from 0-10 and each represent 5 as a dice 5: and 10 as two 5's:



Although there are slight differences in the representations, Spot On With Numbers' Pegs and Boards is versatile and can be used to represent any of the sets of dot patterns discussed below.

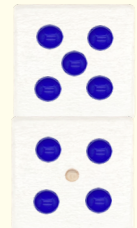
Steve Chinn's choice of dot patterns is based on the link to the fingers.

Fingers are the first place where children make sense of numbers, so this is very powerful when supporting children to develop number sense. Spot On With Numbers' uses very similar patterns, so the Pegs and Boards can be used alongside Steve Chinn's Maths Explained programme (<https://www.mathsexplained.co.uk>). The 8, for example is represented as 5 and 3 as this is the natural way we would show 8 on our fingers:



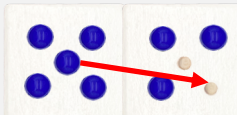
Jane Emerson and Patricia Babbie use a set of dot patterns from the late **Dorian Yeo**. The dot patterns are based on doubles and near doubles. So, 8 is represented as double 4.

All even numbers are represented as doubles and odd numbers are represented as one more (or a combination of the even numbers before and after it). For example, 9 can be seen as one more than 8, or a combination of 4 and 5:



Ref: Emerson, J and Babite, P (2014) *The Dyscalculia Solution*

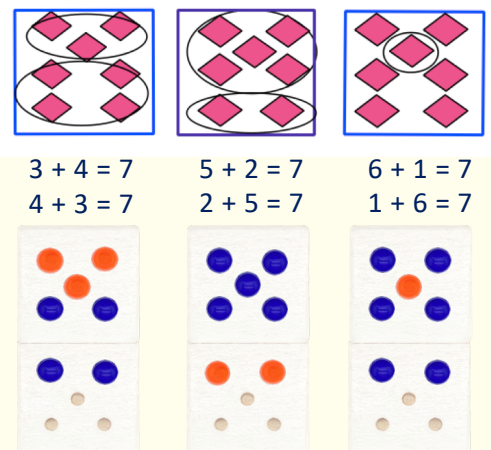
Spot On With Numbers' Pegs and Boards are flexible, giving children or professionals a choice in which way to represent, for example 8. Children can also remove a peg and reposition it to see the link between the different representations:



Mahesh Sharma uses patterns based on the formation of playing cards. He teaches number concepts by decomposing the numbers in the pattern to highlight sight facts:

<https://www.youtube.com/watch?v=1zd9BUDWfNs>

Patterns on the Pegs and Boards can be decomposed in a similar way using colours. The boards can be rotated or moved to show commutativity. The related subtraction facts can also be explored by removing the pegs. Professor Sharma talks about the importance of a CPA approach - starting with the concrete and moving onto the pictorial representation before introducing the abstract, which Spot On With Numbers offers with with Pegs and Boards.



Spot On With Numbers visuals are based on dice patterns and are designed to link to the fingers. However, using the Pegs and Boards alongside these visuals provides the flexibility to move between representations, discover links and make the connections, which are so important for the development of number sense.

