Teaching maths through games ideas

from Jane Hornigold https://www.teachwire.net/news/6-games-for-pupils-with-dyscalculia/

1 | The Staircase Game

Aim

To develop an understanding of the sequence of numbers from 1 to 10.

You will need

Cuisenaire rods 1-10, one of each colour; a 1-10 die.

How to play

Two players take it in turn to roll the dice and place the corresponding Cuisenaire rod on the table to create the 1-10 number sequence.
If your number is repeated when the die is thrown you miss your turn.
So, if player one throws a 2 they will place the red rod on the table. If player two throws a 7, they have to decide how far to the right of the 2 to place the rod in order to make a Cuisenaire Staircase.

2 | Clear the Deck

Aim

To develop instant recall of number bonds to ten. This game is useful at the beginning of a lesson as a warm-up activity, or at the end for revision or consolidation.

You will need

Four sets of digit cards from 1 to 9.

How to play

Shuffle the cards and place them face up on the table in three rows of four.
Players take it in turns to pick up pairs of cards that add up to 10.
The gaps that are left are then filled with cards from the remaining pack.
The idea is to take it in turns and spot the pairs that make 10 as quickly as possible.

3 | Estimation Game

Aim

Dyscalculic learners find it hard to appreciate and compare magnitude in number and this is a motivating and multi-sensory way to help them do it. It requires visualisation, too; another key skill for them to develop.

You will need

10 dried beans/buttons/ glass nuggets; a box to use as a shaker.

How to play

Without letting the pupil see, place a small number of the beans/buttons/glass nuggets in an opaque box with a lid.
Shake the box and ask the pupil to guess how many items are in it.
Then empty the contents onto the table and count the items to see how close the guess was.
Encourage the child to place the items in a line.
Repeat with smaller and larger numbers of items.

4 | Ten-frame Game

Aim

To develop conservation of number through reorganising number formation on a ten-frame. The game builds a strong visual image of numbers and helps visualise bonds to ten by showing both spaces and filled squares in each arrangement of dots.

You will need

Ten ten-frames with each dot arrangement from 1-10; a blank ten-frame; counters to place on the ten-frame.

How to play

Pick a ten-frame card at random and show it to the pupil for five seconds.

Then remove it and ask them to reproduce the image on their blank ten-frame using the counters. Can they tell you how many counters there are? Can they tell you how many spaces there are? Can they make a number story linking the two?

5 | The Nasty Game

Aim

To develop an understanding of place value. To make the largest four-digit number from rolling a 0-9 dice four times.

You will need

A thousands/hundreds/tens/units grid for each player, and a 0-9 die.

How to play

This game is for two players. They take it in turns to roll the die and write the number in their opponent's grid until each player has generated a four-digit number.

The 'nasty' element is that because you are completing your opponent's grid and not your own, the focus is on getting your opponent to lose.

So, if you throw a 1 you would place it in your opponent's thousands column, whereas a 9 would go in their units column.

6 | Trains

Aim

To develop estimation and mental arithmetic skills. This makes a good starter activity, requiring visualisation, prediction, estimation and mental calculation.

You will need

One Cuisenaire rod of each length between 1 and 10.

How to play

This is a game for two players. Decide who goes first and choose a 'distance' between 11 and 55. Let's use 25 as an example. The aim is to make a 'train' that is exactly 25 long.

Each player in turn puts down a Cuisenaire rod, laying them end to end to create a single train.

The person who puts down the last rod to make 25 exactly, wins.

If a player puts down a rod that makes the train longer than 25, the opponent wins.