**Dyscalculia Subtypes**

Karagiannakis and Cooreman (2014) have identified four areas or subtypes. Dyscalculic learners may have difficulty in all or maybe just one or two to these areas:

1. Core Number
2. Reasoning
3. Memory
4. Visual Spatial

**1. Core Number**

This particular sub type of dyscalculia will lead to difficulties with:

* Basic number sense, which is the ability to use and understand number and our number system
* Estimating, for example, being able to arrive at a rough idea of what the answer may be
* Assessing difference in numerical quantity, for example, understanding that 230 is ten times as much as 23 or that 9 is larger than 7
* Understanding and using mathematical symbols
* Understanding place value, for example being able to write 102 in response to hearing one hundred and two rather than writing 1002
* Placing numbers on a number line, for example , understanding that 5 would be placed in the middle of a number line from 0-10

**2. Reasoning:**

This particular sub type of dyscalculia will lead to difficulties with:

* Understanding mathematical concepts and relationships. For example, understanding that multiplication is repeated addition or that addition and subtraction are inverse operations
* Generalising and transferring information. For example, using the fact that 5 + 4 = 9 to work out that 50 + 40 = 90 or that 5 + 5 = 10
* Understanding multiple steps in complex procedures/algorithms
* Problem solving and decision making. For example, selecting the best method for solving a problem or deciding which operation to use when solving a word problem

**3. Memory**

This particular sub type of dyscalculia will lead to difficulties with:

* Remembering and retrieving numerical facts. For example, recall of number bonds to ten or times tables
* Understanding and recalling mathematical terminology. For example, terms like numerator and denominator
* Understanding word problems . To make sense of a word problem often requires you to hold information in your short term memory
* Performing mental calculations accurately. Mental arithmetic places great demands on the working memory
* Remembering and carrying out procedures as well as rules and formulae
* Keeping track of the steps in problem solving

**4. Visual Spatial**

This particular sub type of dyscalculia will lead to difficulties with:

* Recognising and understanding symbols. For example confusing x with +
* Interpreting visual representations of mathematical objects. For example being able to recognise the net of a square
* Placing numbers on a number line. For example, being able to place 75 in roughly the right place on a blank number line from 0-100
* Visualising geometric figures, such as 3 D shapes
* Interpreting graphs and tables. For example , having difficulty reading information from tables or understanding distance /time graphs

Karagiannakis, G and Cooreman, A. (2014) *The Routledge International Handbook of Dyscalculia and Maths Learning Difficulties,* Chapter 19