



RTL B



Trumpet

... For RTL B ... With RTL B ... By RTL B ...



DATE:	Wednesday, 16 November 2016	
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"Hey Arty! Our teacher asked us today what do you see in your mind's eye when you think of a pyramid? What do you see?"

"Well Albie, I see four triangles leaning together with a square base, seven edges and five faces."

"Really? I see a line of camels being led across the sand dunes by Arabs in flowing robes, a bunch of date palms, golden sand dancing in the breeze and blocks of sandstone towering above me. No wonder I didn't get the Maths. But, hey! Do **all** pyramids look like yours? Can you have a pyramid with only four faces and a triangular base?"

"Good question Albie. That curiosity will mean that you are good at Maths too. Maths is all about asking questions and wondering."

"Hmmp. I wish my teacher knew that. She thinks it is all about getting the right answer. I should tell her that John Allen Paulos said that 'Maths is no more about computation than typing is about literature' "

Is maths about getting the right answer or asking the right question?

In Mathematics the art of proposing a question must be held of higher value than solving it. (Georg Cantor – German mathematician and inventor of Set

Dual coding – imagery and verbal processing

Children need to understand these concepts to be able to visualise and understand maths: forward, backward, down, up, before, after, less, whole and part. This is the message from Angela Bensen from Lindamood-Bell Centre: Children need to be able to dual code to be able to understand and solve maths problems. Albert Einstein said, "If I can't picture it, I can't understand it." Without having a picture in their mind's eye of what numbers are, where they sit in relation to each other and being able to verbalise this, will limit a person's ability to understand and progress in solving mathematical problems.

@Cloud Nine math ladder, order for learning

1. Imaging Numerals 2. Imaging the Number Line 3. Addition Family Facts 4. Subtraction Family Facts ---- 12. Fractions (Thank you Suzanne Gillies for your contribution)

Ways to Help

Teach key facts and derived facts.
Teach how to draw up an addition square or tables square as a prompt. Older students who know how to do this quickly can do this as a calming activity at the beginning of an exam and then use it to help with calculations.
Give more time.
Verbalise and draw problems.
Repeat and chunk.
Explicitly point out patterns.

The symptoms of dyscalculia are a delay in the acquisition of: counting, addition strategies (e.g. counting on) and memorisation of number facts and these difficulties persist over time. There is also an anxiety about maths. Neuroscience research shows that that Dyscalculia is strongly related to working memory. The areas of the brain which are implicated with dyscalculia differ from those implicated with dyslexia.

Dyscalculia versus Low Numeracy – Children with low numeracy will have less difficulty with recall of number facts and working memory and their difficulties will reduce over time.

The Importance of imagery to the development of the mental number line in mathematical learning was the main thing I came away with from this conference. The research of Jerome Bruner suggests that learning involves 3 stages – concrete, pictorial and finally abstract. It seems that as educators we move from the concrete to abstract stages too quickly for many children and they miss the opportunity to make the pictorial representations needed to develop understanding so they are not just relying on memory (as many students do). Teaching any students to visualise is vital in the concrete stage. So when working with materials we should be asking them "can you see this in the eyes of your mind"? For dyscalculic children developing visual representations is crucial because they typically have memory problems and cannot rely on their memory.

Contributed by Sally Masson (Hauraki Cluster)



Congratulations to NZRTL B Association members:
Denise West, Cluster 16 and Christine Cutler from Cluster 39.

Prize coming at term's end.

2017: Hi everyone, thanks for enjoying the TRUMPET, contributing to the TRUMPET and for your wonderful feedback. One more to come this year. Next year, we will again publish the TRUMPET, however, it will only be available to NZRTL B Association members.

"Mathematics is like love, a simple idea, but it can get complicated."

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Strength and support in unity and collaboration.