

Language model for mathematics



**ASSIGN
BUSTER**

The construction of a fundamental understanding of numeration and place value concepts forms the foundation for all additional branches of mathematics (Booker, et al. , 2010). Computational processes and patterns of thinking require a clear understanding of these concepts, as they underpin the learning and use of mathematics (Booker et al.

, 2010). Developing mathematical thinking from an early age is extremely important in establishing students understanding of number concepts.

Clements (2001, p271) concludes that children “ are self-motivated to investigate patterns, shapes, measurement, the meaning of numbers, and how numbers work, but they need assistance to bring these ideas to an explicit level of awareness. ” Children learn mathematical ways of thinking, such as counting, subitising and patterning from a young age. The absence of mathematical understanding and ways of thinking, restricts children from grasping the concepts and processes they are learning. Booker et al.

(2010) says children who lack early mathematical thinking are unable to link ideas and instead are provided with the skills of obtaining answers in unrelated ways. Developing mathematical thinking from a young age provides a meaningful basis for children to make connections between the full range of mathematical concepts (Booker et al. , 2010). The development of mathematical learning and understanding, through a variety of different techniques and strategies, is particularly significant. One of the crucial early learning ideas associated with number is the connection between language, symbols and materials (Larkin, 2013a). Booker et al.

(2010) states that language is a key aspect to mathematical learning from the conceptual formation of processing and problem-solving, to the development of numerate students. The Language Model For Mathematics – See Figure 1 (Larkin, 2013b), is purpose built around this idea. It emphasises that when teaching mathematics teachers should progress from the concrete to the abstract. Strategies using materials for example; MAB, bundling sticks, counters and other objects, highlight the relationship between words, symbols and representations (Booker et al. 010).

This approach allows teachers to engage students initially on their level and advance to more complex concepts as their understanding is developed.

Figure 1. The Language Model for Mathematics Learning should be structured to include students at every level of mathematics. Engaging students and allowing them freedom to explore and investigate concepts will increase mathematical interest and participation. Students should be encouraged to engage with mathematics through a variety of stimulating activities including music, singing and playing games. The way in which mathematics is taught, delineates the way in which children will learn.

The Australian curriculum outlines specific areas of attention for the development of numeracy skills in the foundation year. Using well-written texts such as Booker, provides teachers with additional information to enhance teaching capabilities. A variety of comprehensive stimulating and inclusive activities, will support development of mathematical processes and concepts, leading to enthusiastic engaged learners.