THINKBOARD

Concrete (Real)

Picture

Story (Word/s)

Symbol

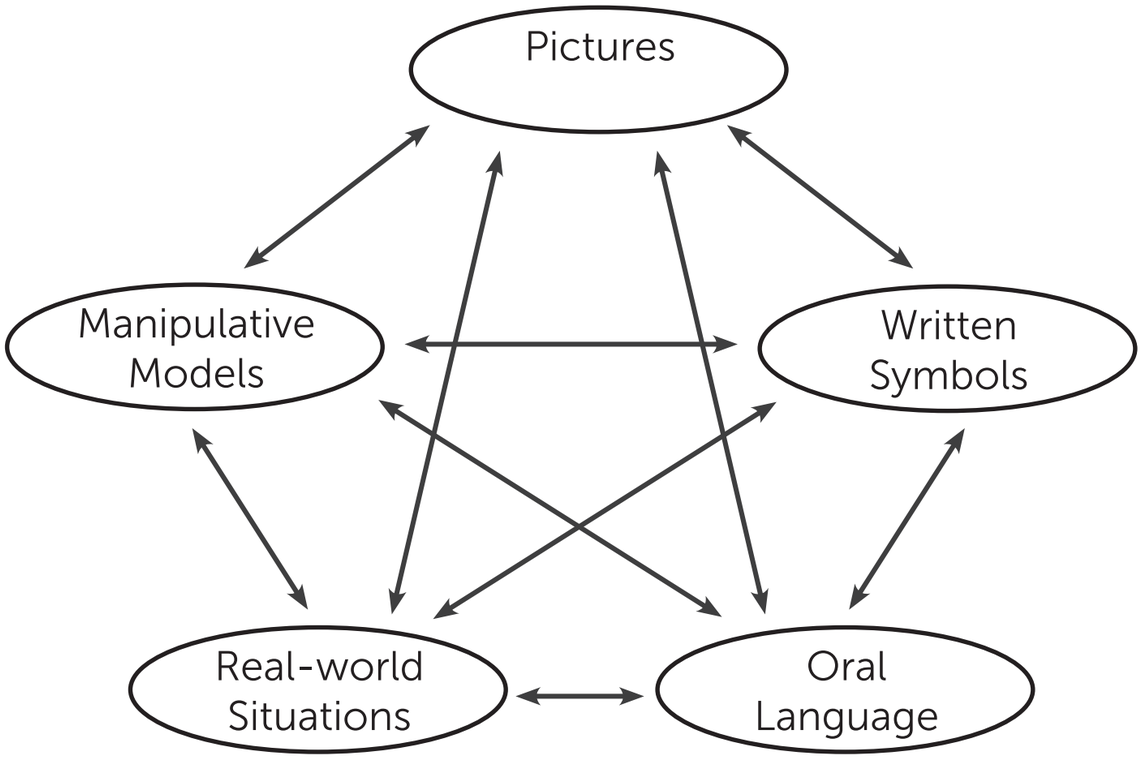
THINKBOARD

What is it? DEFINITION

It is a graphic organiser or tool to assist students to make connections across/ within and between different representations of knowledge. The more connections that are made:

- the better the understanding of the mathematics
- the more likely it will be that the mathematical knowledge is retained
- and easier it should be to apply the mathematics

The focus of the think board is on finding the connections between the different ways of representing a problem. Lesh, Behr and Post (1987) represented these connections in the following framework.



Lesh, Post & Behr, 1987

As students make links between these different ways of representing problems, they will be building their 'relational understanding' or the reason behind the mathematics. Skemp (1976) described relational understanding as "knowing both what to do and why" and instrumental understanding as "rules without reason" (p. 21).

What does it look like? DESCRIPTION

Haylock (1984) first described the Thinkboard as a means of assisting students to facilitate links between various representations of knowledge. The board is divided into four sections. Each section displays different representation of the same mathematical idea. The various forms of representation include:

- Stories based on student experience.
- Materials, or mathematics manipulatives.
- Pictures (drawing) and diagrams (labelled drawing, might include numbers).
- Language (mathematical vocabulary, words).
- Symbols (number sentence/ equation). (FSiM, 2013, p 87)

How do I use it? APPLICATION

- Arrange students into groups of four, placed around the Think Board's four sections. Provide the students with one of the sections as a starting point and give them time to discuss the idea with their neighbours before deciding on what to record.
- You can also work on a Think Board as a whole class or individually.

What do I look for? ASSESSMENT

- Think Boards promote discussion – look for mathematical language used.
- Assess individual student's understanding of a mathematical idea – look at all sections of the Think Board individually to find strengths and weaknesses. (Herrington, 1988)

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