PD4 Cognitive Conflict

Cognitive conflict occurs when thinking is challenged by new information that contradicts prior ideas.

A student may find that new information in a newly introduced situation challenges their existing thinking in ways that their understanding is insufficient to produce a solution and therefore they must act to resolve this conflict. The situation of being 'not sure' creates a space for new learning to occur. As the conflict has been discovered by the students they are motivated to resolve the inadequacy of their current understanding.

It is vital that the teacher has predicted issues that are likely to cause cognitive conflict. This is an important precursor to knowing how long students can be left wrestling with a task to gain maximum benefit.

The following table provides a helpful structure for understanding the stages of cognitive conflict in Maths-for-Life lessons.

Establish	An initial period of students working within bounds of their current understanding helps to set up the moment of cognitive conflict. Students start by working with ideas that they are comfortable with. These may be with, or without, a reminder from the teacher of the thinking required to start the task.
Explore	Students must have time to explore and experiment as they attempt the task. Opportunities for cognitive conflict are often missed by teachers prematurely trying to resolve issues.
Identify	The ideal is that students notice for themselves that their prior ideas and/or methods are not adequate for the new problem situation. This heightens the impact of the cognitive conflict on learning. If necessary, the teacher may help students to identify the issue. For example, this could be by asking students to check whether their suggested solution method 'works' and if not, why not? The following kinds of phrases may help students: • 'What is it that is different about this question…?' • 'Can you explain …?' • 'Why do you think that?' • 'How do you know that?'