

Thematic Workshops

The series of workshops aims to introduce how to integrate the CRMT model into **Activities, Tools and Practices**.



Thematic Workshop 1

Date: 19 Nov 2021 (Friday)

Time: 3:00 – 5:00 pm

Venue: Multi-purpose Zone,
Level 3, Main Library, HKU

Deepen students' mathematical understanding and provide language support to students through activities, tools and practices

Thematic Workshop 2

Date: 11 March 2022 (Friday)

Time: 3:00 – 5:00 pm

Venue: HKU Main Campus

Design high-level cognitive demand activities with tools and practices that value and facilitate student engagement and participation

Thematic Workshop 3

Date: 10 June 2022 (Friday)

Time: 3:00 – 5:00 pm

Venue: HKU Main Campus

Design activities, tools and practices that connect school mathematics with students' cultural/community funds of knowledge and enrich mathematical discourse

Themes

- Activities
- Tools
- Practices

Culturally Responsive Mathematics Teaching (CRMT)

- Cognitive Demand
- Depth of Knowledge & Understanding
- Mathematical Discourse
- Language Support
- Power & Participation
- Cultural Funds of Knowledge

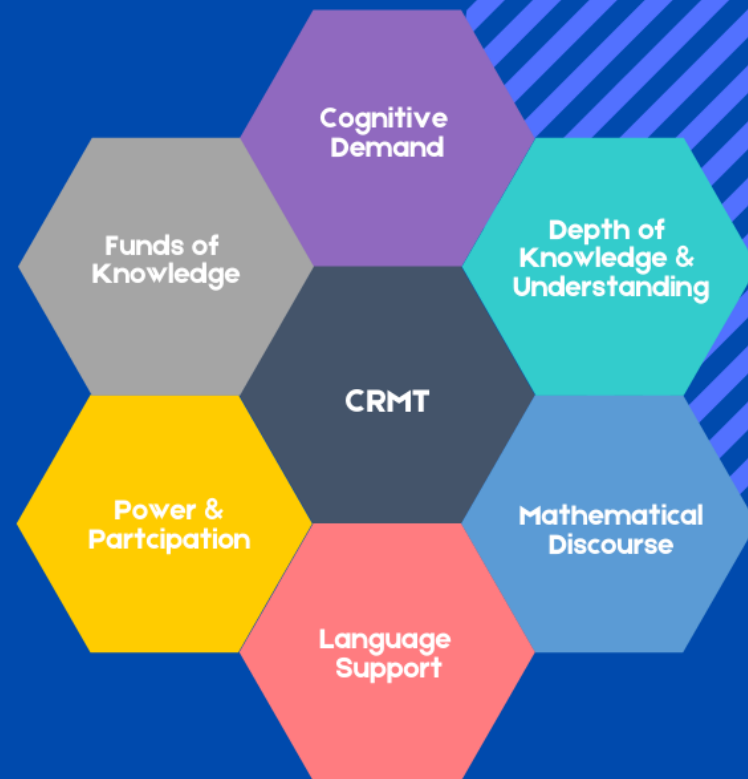


- The lesson enables students to sustain a focus on a mathematical topic or unit, to understand the problematic nature of ideas by arriving at a reasoned or supported conclusion, and to explain how they solved a problem.
- The lesson supports students' mathematical understanding and makes their thinking or understanding visible and deep.
- Teacher uses strategic questioning and references to students' work, talk or behaviour that enable students to examine mathematical concepts and/or procedures to support thinking and to clarify sources of potential confusion or misunderstanding.

- The lesson provides academic language support for Chinese or English language learners. It focuses on the development of mathematical discourse and meaning making, not the correct "English" or "Chinese".
- Teacher uses second language strategies (e.g. revoicing, gesturing), multiple modes of discourse (e.g. informal language, academic language) and representations (e.g. pictures, objects, written and spoken words, symbols) in a variety of interactions.

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Indicators of lacking depth of knowledge & understanding?

Fragmentation of
rules/concepts



Feeding of procedural
skills



Maths and daily
scenarios disconnected



Know 'How' but not
'Why'

Strategies to Deepen Understanding



Opportunities for students to explain



Concept visualisation



Pattern finding



Making connections & drawing conclusions



Open-ended questions



Multiple answers and/or multiple ways to answer

Why is language support so important?

Language is a means of communication

Mathematics requires reasoning in explicit terms and occasions to develop students' thinking ability

Language (L2 or Additional Language) learners need support to listen, speak, read and write

Subject language is more complex than what we think

Language needs in different levels with examples

P1 – P2

- How to read the numbers '1' to '20' in a second language?
- In English : 'Tall' vs 'Short' and 'Long' vs 'Short'; 中文的說法是：「高矮」與「長短」，非華語生不易分辨
- '3 x 4' (3 groups of four or 4 groups of 3 --- cultural differences)
- collective nouns (e.g. school of fishes, 幾粒糖、三頭牛等)

P3 and above

- Why is three fourths better than 3 out of 4?
- Why is a 'square' also a 'rectangle' and a 'rhombus'?



Some Possible Support Strategies

Use visual objects to aid concept delivery

Check for understanding (include language elements)

Minimise language demands on students

- Reduce the number of words used in teaching and exercises
- Introduce new terms with more explicit support

Signs / Terminologies

- Keys terms with visual illustrations

Let's work
together ...

to integrate the CRMT model
with Activities, Tools and
Practices

