



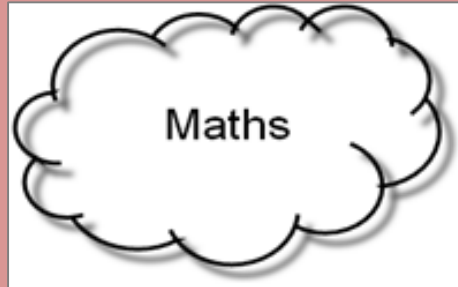
Reality

- Identify local cultural and environmental knowledge that can be used to introduce the idea.
- Ensure existing knowledge prerequisite to the idea is known.
- Construct kinaesthetic activities that introduce the idea (and are relevant in terms of local experience).

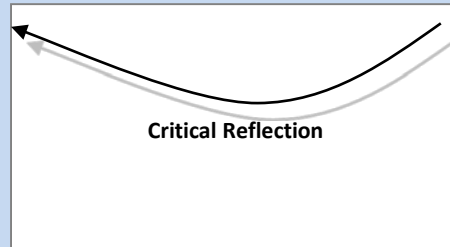
Abstraction



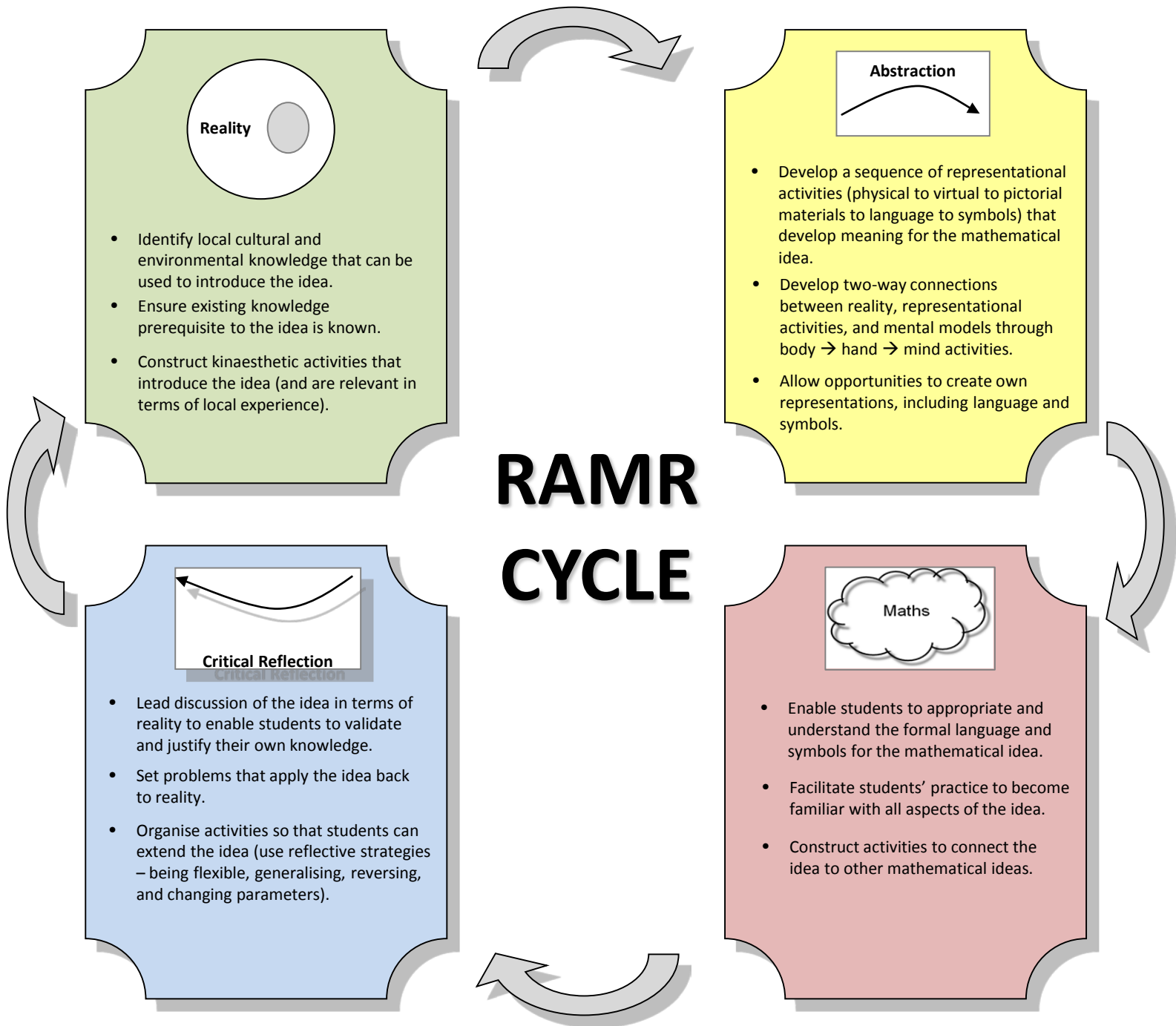
- Develop a sequence of representational activities (physical to virtual to pictorial materials to language to symbols) that develop meaning for the mathematical idea.
- Develop two-way connections between reality, representational activities, and mental models through body → hand → mind activities.
- Allow opportunities to create own representations, including language and symbols.



- Enable students to appropriate and understand the formal language and symbols for the mathematical idea.
- Facilitate students' practice to become familiar with all aspects of the idea.
- Construct activities to connect the idea to other mathematical ideas.



- Lead discussion of the idea in terms of reality to enable students to validate and justify their own knowledge.
- Set problems that apply the idea back to reality.
- Organise activities so that students can extend the idea (use reflective strategies – being flexible, generalising, reversing, and changing parameters).



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Maths

- Enable students to appropriate and understand the formal language and symbols for the mathematical idea.
- Facilitate students' practice to become familiar with all aspects of the idea.
- Construct activities to connect the idea to other mathematical ideas.

Critical Reflection

- Lead discussion of the idea in terms of reality to enable students to validate and justify their own knowledge.
- Set problems that apply the idea back to reality.
- Organise activities so that students can extend the idea (use reflective strategies – being flexible, generalising, reversing, and changing parameters).

RAMR CYCLE