reSolve MATHS BY INQUIRY

SPECIAL TOPIC 5

Assessing Reasoning

Overview

Mathematical reasoning is at the forefront of reforming mathematics teaching and recognised for its significance for mathematics learning. This project will provide a framework for assessing reasoning and a learning trajectory that describes how students' reasoning develops. These tools will strengthen teachers' insights into their students' reasoning and its relationship to mathematical learning and provide strategies for assessing reasoning. Student work samples and video clips will demonstrate progress in reasoning, and highlight teachers' prompts and questioning that can elicit children's reasoning. It is intended that the framework and learning trajectory will become a part of everyday planning, teaching and assessment practices.

Australian Curriculum: Mathematics

Mathematical Reasoning is one of the mathematical proficiencies embedded in the *Australian Curriculum: Mathematics*. It is important to emphasise it in teaching and to track students' progress. The assessment framework and learning trajectory will be applicable to work in all content strands of the Australian Curriculum.

Core development team

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Trialling Requirements

Year level

These materials are intended to be useful for primary school teachers at all levels. However, the supporting materials will be illustrated with content suitable for students in Years 3 to 6.

Program time required

Ideally a group of teachers will work together to trial the assessment framework, the learning trajectory and the supporting materials (suggested exemplar tasks, work samples, rubrics, video snippets etc.). The trial would begin with a group introductory session (notes provided), allow time for teachers at the same level to jointly plan lessons containing reasoning-rich activities, observe each other's lessons and work together to assess the reasoning against the learning trajectory, and then end with a group debriefing. In doing this, teachers from Years 3 to 6 are asked to trial at least two of the sample reasoning activities provided, and to use the associated rubrics and work samples to assess their students' reasoning.

Trialling dates

Resources will be available from early August 2017. Trialling will preferably be completed by November 2017.

Materials can be accessed from the Members section of the reSolve website http://www.resolve.edu.au. Email mbi@science.org.au to trial.

Feedback to help us improve the materials can be provided by:

- Completing the short online survey (a link is provided on the materials) AND
- Completing the Detailed Feedback questions provided, and emailing to us AND/OR
- Making comments on the materials or on student work, then scanning and emailing to us OR
- Phoning us if preferred to give your detailed responses verbally.

For information about Special Topics, contact Director of Special Topics Kaye.Stacey@science.org.au or Lucy.Bates@science.org.au.To find out more about reSolve Mathematics by Inquiry, visit http://resolve.edu.au or contact mbi@science.org.au.

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Australian Academy of Science

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