

## The reSolve: Mathematics by Inquiry Protocol

*reSolve: Mathematics by Inquiry* amplifies existing approaches to teaching mathematics through structured and purposeful investigations of mathematical and realistic contexts. The *reSolve* Protocol provides a description of key features of school mathematics that underpin the Professional and Classroom resources in *reSolve*.

*reSolve* mathematics is purposeful. reSolve contests a view of school mathematics as a body of disconnected facts and procedures to be learned, by:

- Presenting mathematics as a way of modelling the real world and as an abstract discipline.
- Focusing on substantial mathematical ideas.
- Supporting a rich interpretation and enactment of the content and proficiencies of the Australian Curriculum: Mathematics.
- Acknowledging mathematics as a creative and imaginative endeavor, continually changing and developing in a technological society.
- Connecting mathematics through deep linkages to other mathematical ideas and to other areas of the curriculum.

*reSolve* tasks are challenging yet accessible. reSolve contests a view that some students can “do” mathematics well and others cannot, by:

- Activating existing knowledge, developing new knowledge and exploring relationships between key ideas by working on meaningful tasks.
- Engaging students in sustained inquiry, problem solving, decision making and communication.
- Providing opportunity for all students irrespective of background and experience.
- Structuring tasks and using technologies to optimise students’ mathematical development.
- Using evidence of students’ progress to inform feedback and subsequent teaching action.
- Providing prompts and activities meeting a range of student capabilities, from those needing assistance to those ready for further challenge.

*reSolve* classrooms have a knowledge-building culture. reSolve contests a view that mathematics is best learned through copying and memorising, by:

- Sustaining higher order mathematical thinking through the active role of both teacher and student.
- Challenging existing conceptions and using mistakes as a vehicle for learning.
- Enhancing learning through active exploration of a variety of perspectives, including ideas from other people and disciplines.
- Building success and understanding through collaborative inquiry, action and reflection, enhanced by the use of technologies as tools for working mathematically.
- Eliciting productive dispositions, including productive struggle and the motivation and confidence to take risks.