

Students' use of Mathematical Evidence in Guided Mathematical Inquiry

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Extended, guided mathematical inquiries require students to address questions with potential for multiple interpretations of a question and question context. Students typically adopt diverse approaches to solving the inquiry question, resulting in multiple possible solutions. Students need to be able to explain and justify their solutions and their chosen pathway to solution, by providing and drawing on mathematical evidence. Making decisions about what evidence is needed and how to collect it falls on the students and this becomes a challenging component of the inquiry that, if not supported, can result in shallow mathematical coverage of a topic. In a study currently in progress, a bank of video-taped inquiry lessons from the authors' previous research is being analysed with involvement from the teachers conducting the lessons. This data, as well as input from a focus group of expert inquiry teachers, has been drawn upon to present a developing framework of the ways in which students engage with mathematical evidence through varied stages of an inquiry. The framework is illustrated with examples from a Year 3 inquiry.