

**ZMATH 2016b.01008**

**Koile, Kimberle; Rubin, Andee**

**Animated mathematical proofs in elementary education.**

Hammond, Tracy (ed.) et al., The impact of pen and touch technology on education. Cham: Springer (ISBN 978-3-319-15593-7/hbk; 978-3-319-15594-4/ebook). Human-Computer Interaction Series, 67-79 (2015).

Summary: The ability to prepare and present a mathematical argument, or proof, is a key component of the mathematical competence students need to achieve in elementary school. A proof for elementary students is not the highly structured deductive mathematical argument seen in high school algebra classes. Elementary students can, however, create mathematical arguments about equivalence using vocabulary appropriate for their level of understanding. The goal of the Technology to Support Mathematical Argumentation project is to develop computational tools with which elementary students can construct and share mathematical arguments. This chapter reports on the development of array manipulation and animation creation tools that are extensions to our tablet-based Classroom Learning Partner (CLP) software. It also describes our experience in a Boston third grade classroom in which students were able to successfully create animations to demonstrate mathematical arguments about equivalence.

*Classification:* U72 E52

*Keywords:* mathematical proofs; animation creation tools; demonstration of arguments; animation  
doi:10.1007/978-3-319-15594-4\_7