

ZMATH 06675840

Mason, John

Overcoming the algebra barrier: being particular about the general, and generally looking beyond the particular, in homage to Mary Boole.

Stewart, Sepideh (ed.), And the rest is just algebra. Cham: Springer (ISBN 978-3-319-45052-0/hbk; 978-3-319-45053-7/ebook). 97-117 (2017).

Summary: Consistent with a phenomenographic approach valuing lived experience as the basis for future actions, a collection of pedagogic strategies for introducing and developing algebraic thinking are exemplified and described. They are drawn from experience over many years working with students of all ages, teachers and other colleagues, and reading algebra texts from the fifteenth century to the present. Attention in this chapter is mainly focused on invoking learners' powers to express generality, to instantiate generalities in particular cases, and to treat all generalities as conjectures which need to be justified. Learning to manipulate algebra is actually straightforward once you have begun to appreciate where algebraic expressions come from.

Classification: C30 H20 H30 E50

Keywords: expressing generality; pedagogic strategies; tracking arithmetic; watch what you do; say what you see; reasoning without numbers; same and different; invariance in the midst of change

doi:10.1007/978-3-319-45053-7_6