

ZMATH 2016f.00893

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Prospective elementary teachers making sense of multidigit multiplication: leveraging resources.

J. Res. Math. Educ. 47, No. 3, 270-307 (2016).

Summary: This study examines how collective activity related to multiplication evolved over several class sessions in an elementary mathematics content course that was designed to foster prospective elementary teachers' number-sense development. We document how the class drew on as-if-shared ideas to make sense of multidigit multiplication in terms of partial products and to reason flexibly about products. We document how the class overcame the challenge of accounting for partial products in multidigit multiplication, including particular activities and ways of reasoning that facilitated progress. The results provide insights into how prospective elementary teachers' understanding of multidigit multiplication can develop during a content course and how a sequence of instructional activities and practices can productively leverage the resources that they bring in support of that development.

Classification: F39 C39 D39

Keywords: content knowledge; mental computation; multiplication; number sense; preservice teachers; prospective teachers; teacher education; whole number

doi:10.5951/jresmetheduc.47.3.0270