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**Connecting representations: using predict, check, explain.**

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Summary: Although educators agree that making connections with the real world, as advocated by [*National Council of Teachers of Mathematics*, Principles to actions: ensuring mathematical success for all. Reston, VA: NCTM (2014)], is important, making such connections while addressing important mathematics is elusive. The authors have found that math content coupled with the instructional strategy of “predict, check, explain” can bridge such real-world contexts. In so doing, this procedure supports the research-informed teaching practices of using evidence of student thinking and aiding meaningful mathematical discussion. In contrast to the common symbols-first approach, in which students manipulate symbols and memorize the mathematics, we have found that allowing students to investigate motion phenomena through the use of technology-based representations can foster students’ deep understanding of mathematics. As an example, the authors describe a high-cognitive-demand task that connects a real-world context with mathematics while supporting seventh-grade students’ understanding of rate and proportionality. (ERIC)

*Classification:* U73 I23 M53

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[http://www.nctm.org/Publications/Mathematics-Teaching-in-Middle-School/2016/Vol21/Issue8/Connecting-Representations\\_-Using-Predict,-Check,-Explain/](http://www.nctm.org/Publications/Mathematics-Teaching-in-Middle-School/2016/Vol21/Issue8/Connecting-Representations_-Using-Predict,-Check,-Explain/)