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Visual reasoning tools in action.

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Summary: The Common Core State Standards for Mathematics (CCSSM) identifies the strategic use of appropriate tools as one of the mathematical practices and emphasizes the use of pictures and diagrams as reasoning tools. Starting with the early elementary grades, CCSSM discusses students' solving of problems "by drawing." In later grades, such specific forms of diagrams as number lines, area models, tape diagrams, and double number lines are mentioned. This article illustrates the power of these visual reasoning tools by describing how Japanese sixth and seventh graders used a variety of pictures and diagrams to solve and make sense of problems. The article also discusses potential challenges and opportunities that these visual reasoning tools offer to middle school mathematics teaching and learning. (ERIC)

Classification: D53 E53

Keywords: reasoning; visualization; problem solving; sense making; diagrams

<http://www.nctm.org/Publications/Mathematics-Teaching-in-Middle-School/2015/Vol21/Issue3/Visual-Reasoning-Tools-in-Action/>