

# Math Language and Math Performance

## What the Research Says

*Because math language continues to build on previous lessons, students who lack math language fluency, even if proficient in calculation, tend to fall further and further behind.*

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## Samples from the Research Literature

PUBLISHED RESEARCH	EXCERPT
<p><b>The Language of Mathematics</b> Faye Bruun, Joan M. Diaz and Valerie J. Dykes</p> <p><i>Teaching Children Mathematics</i> Vol. 21, No. 9 (May 2015), National Council of Teachers of Mathematics</p>	<p><i>Although students may excel in computation, their ability to apply their math skills will suffer if they do not understand the vocabulary of mathematics used in instructions, story problems, and problems that use math vocabulary.</i></p>
<p><b>Teaching Mathematics Vocabulary to Diverse Groups</b> Joyce Anderson Downing, Theresa Earles-Vollrath, Hea- Jin Lee, and Leah M. Herner- Patnode</p> <p><i>Intervention in School and Clinic</i> 2007 43:2</p>	<p><i>Although students may be familiar with the mathematic concepts, they are unable to decipher the language associated with that concept or problem.</i></p>

<p><b>Preschool children's mathematical knowledge: The effect of Teacher “Math Talk.”</b>  Raquel S. Klibanoff, Susan C. Levine, Janellen Huttenlocher, Marina Vasilyeva, Larry V. Hedges</p> <p><i>Developmental Psychology</i>  Jan 1, 2006 Vol 42 Issue 1</p>	<p><i>An increased use of number words and concepts in conversations with students resulted in greater growth in math proficiency. This was not a study about math instruction; it was a study about the math language that these teachers used when they weren't teaching math.</i></p>
<p><b>The linguistic challenges of mathematics teaching and learning: A research review</b>  Mary J Schleppegrell</p> <p><i>Reading &amp; Writing Quarterly</i>,  2007 - Taylor &amp; Francis</p>	<p><i>Research on pedagogical practices supports developing mathematics knowledge through attention to the way language is used, suggesting strategies for moving students from informal, everyday ways of talking about mathematics into the registers that construe more technical and precise meanings.</i></p>
<p><b>The Language of Mathematics</b>  Bruun, Faye; Diaz, Joan M.; Dykes, Valerie J.</p> <p><i>Teaching Children Mathematics</i> ,  v21 n9 p530-536 May 2015</p>	<p><i>Bruun, Diaz, and Dykes (2015) described learning mathematics as similar to learning a new language because of the immensity of academic language necessary for mathematics. To help students develop multiple ways to understand the language of mathematics, focused instruction may be necessary.</i></p>

<p><b>Supporting Math Vocabulary Acquisition</b>          Bay-Williams, Jennifer M.; Livers, Stefanie</p> <p><i>Teaching Children Mathematics</i>, v16 n4 p238-245 Nov 2009</p>	<p><i>Providing appropriate language support is important for all students and essential to the success of English Language Learners (ELLs), struggling readers, and students with learning disabilities. In a mathematics classroom, the support includes the ongoing development of everyday vocabulary...</i></p>
<p><b>Evidence for the Importance of Academic</b>          Townsend, Dianna; Filippini, Alexis; Collins, Penelope; Biancarosa, Gina</p> <p><i>Elementary School Journal</i>, v112 n3 p497-518 Mar 2012</p>	<p><i>Academic language is a significant predictor of academic achievement...</i></p>