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Specific Language Challenges in Math for English Learners		
Polysemous words (multiple meanings)	Many math words have different meanings in social language	table, quarter, product, plane, face
Social- Academic Math terms	Many math terms have social equivalents. Students regularly use the social language and miss the academic word.	guess, rule, same
Homophones	These specific math words sound the same as a social language word	sum/some; whole/hole; cent/sent/scent; one/won
Minimal Pairs	These numbers are difficult for non-native speakers to distinguish	thirteen/thirty; fifteen/fifty; sixteen/sixty
Cognates	Most Spanish-English cognates in math are useful for students, if they can recognize the Spanish word in speech and writing. Some are 'false cognates'	dividir, multiplicar (cognates) restar, largo (false cognates)
Multiple words for same meaning	There are many words used for the 4 basic operations. If students don't know the multiple terms, they may not understand what to do to solve a problem	Addition examples: plus, more than, altogether, increased by, sum, in all, total, combine Subtraction examples: take away, minus, less than, diminished by, are left, remain, fewer, difference
Conceptually Dense Words	These concept words are not easily translated or explained in one sentence	



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Print Resources for Math Vocabulary and Language Development

Calderón, Margarita (2007) *Teaching Reading to English Language Learners, Grades 6-12*

Carr, John, Ursula Sexton, Rachel Lagunoff (2007) *Making Math Accessible to English Learners*

Echevarria, J., Vogt, E. and Short, D. (2000) *Making Content Comprehensible for English Language Learners: The SIOP Model*

Fisher, D., Frey, N., & Anderson, H. (in press). *Thinking and comprehending in mathematics classrooms*

Zwiers, Jeff (2014) *Building Academic Language (Grades 5-12)*

On-line Resources:

[Edutopia: "Improving Math Curriculum for English Language Learners"](#)

<https://www.todos-math.org> TODOS: Mathematics for ALL is a professional organization that advocates for equity and excellence in mathematics education for ALL students - in particular, Latina/o students.

<http://www.tsusmell.org/index.htm> Mathematics for English Language Learners based at Texas State University System. Videos, presentations, and resources such as a teacher's guide for teaching math to Grade 7-12 ELLs.

<http://www.purplemath.com/modules/translat.htm> Lessons that help make sense of word problems

www.nctm.org National Council of Teachers of Mathematics