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Curriculum Units by Fellows of the National Initiative
2017 Volume V: From Arithmetic to Algebra: Variables, Word Problems, Fractions and the Rules

Formulating Algebraic Equations from Word Problems

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by Rachelle Soroten

The purpose of this curriculum unit is to help students translate word problems into first order equations, which can be written as $ax + b = c$, where a, b, and c are whole numbers. I will use visual models and discussions to help students identify and organize the given information, unknown value, and relationships of the quantities in the word problem. The models in this curriculum unit are based on the Singapore Bar Method. By organizing the information from a word problem, and representing it with a bar model, students will have an easier time representing these quantities and relationships symbolically. I also hope this curriculum unit gives students confidence to approach more complicated word problems as they progress further in math.

This unit was developed for a pre-algebra class, and is recommended for grades 7-9. It is the first of four complementary curriculum units developed in the 2017 Yale National Initiative (YNI) seminar *From Arithmetic to Algebra*, about translating, simplifying, and solving algebraic expressions and equations. For the related curriculum units, please see the work of 2017 math Fellows Jeffrey Rossiter, Xiomara Pacheco, and Sally Yoo, in that order.

(Developed for Accelerated Mathematics, grades 6-7; recommended for Mathematics, grade 7)