



Curriculum Units by Fellows of the National Initiative

2017 Volume V: From Arithmetic to Algebra: Variables, Word Problems, Fractions and the Rules

---

## **"Simplifying" the Issues with Expressions**

Guide for Curriculum Unit 17.05.06, published September 2017

by Xiomara Pacheco

Going from teaching 9<sup>th</sup> grade to 8<sup>th</sup> grade, it was clear to me that simplifying algebraic expressions is quite challenging for my students in both grades. This unit is intended to help them overcome their difficulties with this topic. It can be taught in collaboration with the units of three other Fellows of the YNI 2017 seminar, *From Arithmetic to Algebra*: Rachelle Soroten, Jeffrey Rossiter, and Sally Yoo. The related units cover the topics of word problems, translating word phrases, and solving equations. This unit will specifically cover translating complex word phrases into algebraic expressions, and then using the rules of arithmetic, also known as the Properties of Operations, to simplify the resulting expressions. The final conclusion is: any combination of linear expressions can be simplified to an expression in the form " $ax + b$ " where  $a$  and  $b$  are specific numbers. Collaborative strategies will be used to develop this understanding, with the expectation that independent work allow students to build their confidence when talking about math.

(Developed for Pre-Algebra, grade 8; recommended for Pre-Algebra, grade 7, and Algebra 1, grade 9)

---

<https://teachers.yale.edu>

©2023 by the Yale-New Haven Teachers Institute, Yale University, All Rights Reserved. Yale National Initiative®, Yale-New Haven Teachers Institute®, On Common Ground®, and League of Teachers Institutes® are registered trademarks of Yale University.

For terms of use visit [https://teachers.yale.edu/terms\\_of\\_use](https://teachers.yale.edu/terms_of_use)