



YALE NATIONAL INITIATIVE

to strengthen teaching in public schools®

Curriculum Units by Fellows of the National Initiative

2023 Volume III: Transitions in the Conception of Number: From Whole Numbers to Rational Numbers to Algebra

Improving Proportional Reasoning = Improving High School Math Success

Guide for Curriculum Unit 23.03.07, published September 2023

by Julie Skrzypczak

High school students arrive in my classroom lacking number sense and the reasoning skills necessary for success in high school math and science. This deficit results in my students' struggle to engage in grade level course work. This unit will provide a starting point for some targeted acceleration of learning. The number line will anchor our work to improve student number sense. It will also serve as the space in which students build fluency and deepen their understanding of fractions. Work comparing fractions and discovering equivalent fractions will build some of the skills students need to become proficient at proportional reasoning. Exploring many types of proportion and ratio problems will allow students to discover patterns and strategies for solving these problems as they build their proportional reasoning skills. After completing this unit, my hope is that my students will have stronger number sense and be more adept at proportional reasoning.

(Developed for Geometry; recommended for Mathematics, grade 8, and Pre-Algebra, Algebra I, and Geometry)

<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