

The Algebraization of Fraction Division: A Unit to Support Lasting Understanding of Concepts and Algorithms in Sixth Grade Mathematics

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Sixth grade is a critical moment in students' mathematical learning. It is the last time that students formally study fractions as well as the first time that students begin work with officially algebraic content. For this reason, the sixth-grade unit on fraction division should make strong connections between conceptual and procedural goals, supporting formalization of an algorithm that maintains the reasoning behind it and introducing students to the processes of generalization that will be required in algebraic thought.

This unit provides real-world extension and added procedural emphasis to heavily conceptual materials presented through the Illustrative Mathematics curriculum. Assessment criteria and global contexts from the International Baccalaureate program are used as frameworks for the activities that have been created. In this unit, students apply fraction division to make real-world comparisons of local and global communities, communicate connections between division expressions, visuals, and solutions, and investigate patterns that occur when dividing by unit and non-unit fractions in order to generalize the standard algorithm.