

WIU CENTENNIAL HONORS COLLEGE
Thomas E. Helm Undergraduate Research Day 2023

Abstract

Poster

Major: Middle Level Ed-Math

Faculty Mentor(s): Jim Olsen

Hands-on Division with Fractions for Student Understanding

Hailee Zachman

Cailey Platt

This curriculum development project is designed to enhance students' conceptual understanding of division with fractions through hands-on and visual models. It explores modeling division with fractions for grades four through eight. The concept of division can be hard for many students, and division with fractions can be an added struggle. We wanted to explore hands-on methods of solving division with fractions that promote students' mathematical reasoning, problem-solving, and critical thinking skills. The curriculum is designed to implement manipulatives and real-world problems as well as align with the Common Core State Standards for Mathematics. This project provides two different methods that can be used to model division with fractions which include fraction tiles and an online resource called Polypad. This project also discusses the advantages and limitations of each method. As a result of this project, we developed a progression of 8 student objectives that are keyed to the CCSSM. We also developed 8 usable handouts that can be utilized by instructors and students in a classroom setting.