

# Fostering Equitable Groupwork to Promote Conceptual Mathematics Learning

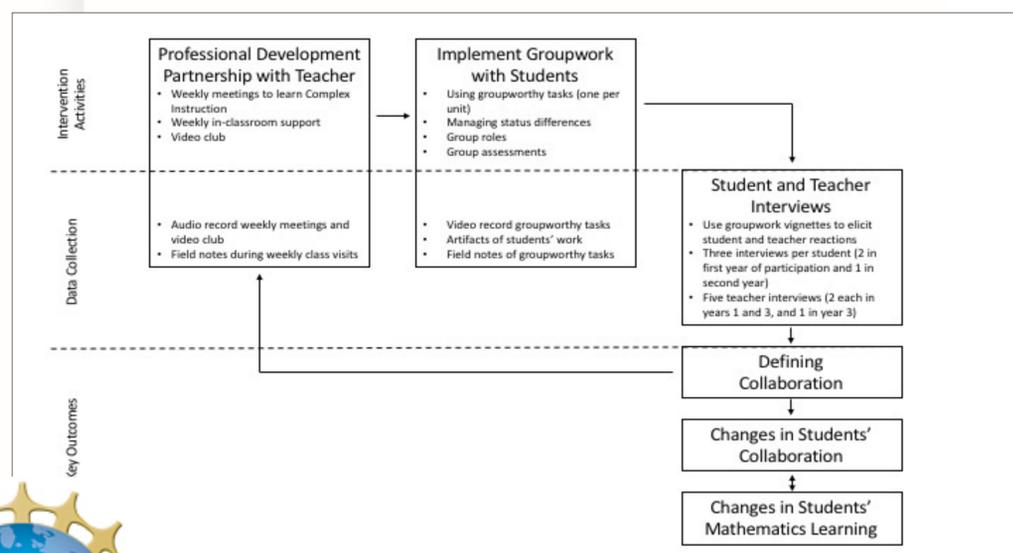
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## PURPOSE AND GOALS

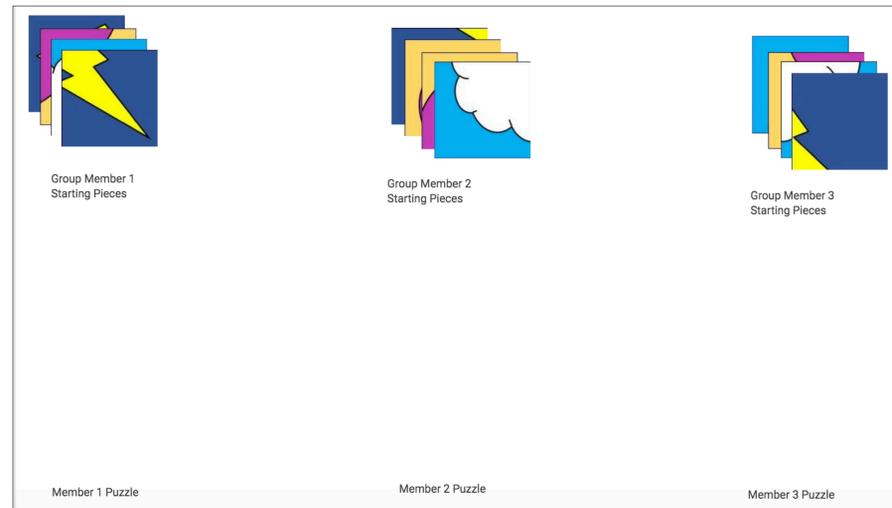
The primary purpose of this study is to describe how students learn to interact with one another to make sense of mathematics, and how students and their teacher negotiate what constitutes equitable collaboration.

- Implement groupwork with 6<sup>th</sup>-grade students using Complex Instruction.
- Use vignettes of groupwork, to elicit students' ideas about collaboration.
- Document the relationship between students' interactions and students' mathematical learning.
- Describe how a teacher and students develop a shared understanding of collaborative groupwork.

## DESIGN



## GROUPWORK IN A PANDEMIC



I adapted Cohen and Lotan's (1994) puzzle building activity for students to complete in groups of 3 via Google Jamboards.

- Each student began with a mix of puzzle pieces.
- Students could give away pieces, but not take.

## GROUP ROLES

**Leader** – Keeps track of time, keeps the group on task. Double checks what the recorder writes down. Keep track of levels of noise.

**Materials Manager/Recorder** – Writes down your group's answers.

**Question Asker** – When the group has a group-question, asks the teacher.

**Mediator** – Looks for disagreements and helps resolve them.

## SUMMARY OF YEAR 1

- With the partner teacher, we read and talk about three components of Complex Instruction: assigning competence, developing a multiple abilities orientation, and the use of group roles.
- Students began practicing (non-math) groupwork practices in fall 2020, but all data collection pauses between November-March.
- In April-May, students completed a sequence of 4 groupwork tasks related to fraction operations.
- I interviewed 9 students in May 2021.

## A SAMPLE TASK

1. What fraction of the garden is planted with each type of fruit or vegetable?
2. Which plant takes up the largest/smallest portion of the garden? (*CMP, Let's be Rational*)

