

Children's Understanding of Relationships

[CUG] Learning Trajectories in Grades K-2 Children's Understanding of Algebraic Relationships (2014-2017)

The research goal for the project is to identify learning trajectories as cognitive models of how grades K–2 children learn to generalize, represent, and reason with algebraic relationships. The project will address immediate challenges facing PreK–12 STEM education concerning the need to understand how young children, *at the start of formal schooling*, make sense of core algebraic concepts and practices typically reserved for students in later grades.

[CUF] Children's Understanding of Functions in Grades K-2 (2011-2014)

This research project addresses how children in grades K-2 understand concepts associated with functions—particularly as these concepts relate to different representational tools (e.g., natural language, algebraic notation, tables, and Cartesian coordinate tools). Researchers will study how students are able to coordinate co-varying data and identify and express relationships with such data—particularly examining the connections between their thinking about recursive patterning and co-varying relationships and correspondence relationships.