Cognitively Guided Instruction

Cognitively Guided Instruction is a professional development program based on an integrated program of research focused on (a) the development of students' mathematical thinking; (b) instruction that influences that development; (c) teachers knowledge and beliefs that influence their instructional practices; and (d) the way that teachers' knowledge, beliefs, and practices are influenced by their understanding of students' mathematical thinking.

Studies have consistently demonstrated that Cognitively Guided Instruction (CGI) students show significant gains in problem solving. These gains reflect the emphasis on problem solving in CGI classes. Learning to understand the development of children's mathematical thinking can lead to fundamental changes in teachers' beliefs and practices and that these changes were reflected in students' learning.

The goals of CGI are:

1. Analyze story problems and number sentences to determine their mathematical demands and recognize student responses in terms of cognitive development.
2. Assess students' thinking and design problems that will develop students' understanding of concepts and skills.
3. Facilitate discussions that provide a window into children's thinking, strengthen children's ability to reason about arithmetic, and build their capacity for algebraic reasoning.
4. Use open and true/false number sentences to develop students' understanding of concepts and skills.