

# **Concrete-Representational-Abstract Instructional Sequence**

## **Purpose**

The purpose of teaching through a concrete-to-representational-to-abstract sequence of instruction is to ensure students truly have a thorough understanding of the math concepts/skills they are learning. When students who have math learning problems are allowed to first develop a concrete understanding of the math concept/skill, then they are much more likely to perform that math skill and truly understand math concepts at the abstract level. Research-based studies show that students who use concrete materials develop more precise and more comprehensive mental representations, often show more motivation and on-task behavior, understand mathematical ideas, and better apply these ideas to life situations (Harrison & Harrison, 1986; Suydam & Higgins, 1977).

## **Concrete**

The concrete stage is the “doing” stage. During this stage, students are using concrete objects or hands-on activities to act out and model the problems. This helps show students that math can be used to solve real life problems

## **Representational**

The representational stage is the “seeing” stage. During this stage, students are using representations of the objects (or actions) that were used in the concrete stage to model the problems. Students need to understand how the representational or pictorial examples connect and relate to the concrete examples. This use of visual representation helps students begin to visualize the math operation(s).

## **Abstract**

The abstract stage is the “symbolic” stage. During this stage, students move to using abstract symbols to model the problems. The goal of this stage is to show students how symbols can provide a shorter, more efficient way to represent numerical operations. It is essential that students understand how these abstract symbols relate to both the concrete and representational examples.

## **Conclusion**

Concrete and pictorial representations should be used at all grade levels along with the more traditional abstract symbols. By using cognitive strategies such as CRA, teachers provide students with a technique for tackling mathematics problems rather than just searching for an answer.