

Evidence Balance Math

There is evidence that students work with manipulatives , models and representations	
Close adherence to curriculum including attention to outcomes that indicate "Concretely, pictorially and symbolically"	**Note that the CTCS rubrics include these curriculum indicators- that call for demonstrating with manipulatives and models. See "Assessment"
There is evidence that students are given opportunities to construct meaning around mathematical concepts, dialog, demonstrate and explain.	**The classroom should be equipped with manipulatives to support the specific grade. There are also excellent virtual manipulatives that can be shown and manipulated on the SMARTboard/Viewboard
There is focused work on procedural fluency, recall of basic facts, and automaticity—AFTER the concept is attained.	
The teacher assigns a grade-appropriate amount of practice, using the core resources and other quality materials	
Students work on problem solving and rich tasks to apply learning to novel situations	

Thing to watch for:

An overreliance on worksheets/workbooks, and memorizing procedures (without conceptual understanding first)

An overuse of technology—Mathletics or other online learning applications (these programs are useful but are not a substitute for good instruction.)

Absence of manipulatives as described in curriculum

Absence of opportunities to work with manipulatives and models, and connect concrete manipulations to representations and symbolic procedures

Use of algorithms without context

Mistaking "on task" behaviour for learning behaviour

OntLack of grade-level appropriate practice and rigor.