

MATH
MATHEMATICS

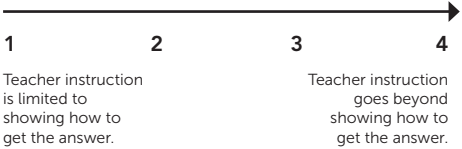
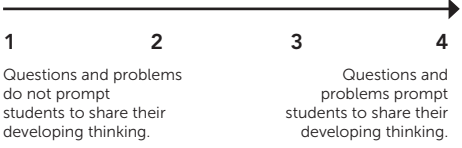
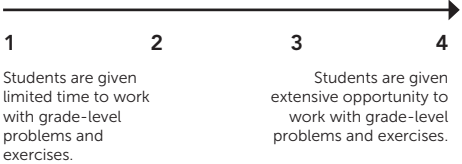
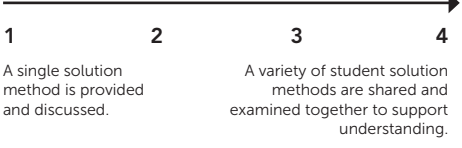
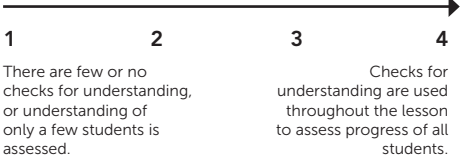
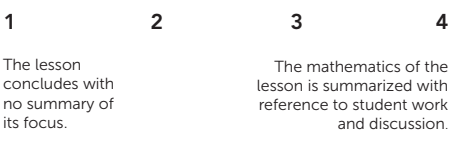
K-8
GRADES K-8

D
DAILY

The Shifts required by the Common Core State Standards for Mathematics are¹:

1. Focus: Focus strongly where the Standards focus.
2. Coherence: Think across grades, and link to major topics within grades.
3. Rigor: In major topics pursue conceptual understanding, procedural skill and fluency, and application with equal intensity.

CORE ACTION 2: Employ instructional practices that allow all students to master the content of the lesson.

INDICATORS	EVIDENCE OBSERVED OR GATHERED ²	
A. The teacher uses explanations, representations, and/or examples to make the mathematics of the lesson explicit.	 1 2 3 4 Teacher instruction is limited to showing how to get the answer. Teacher instruction goes beyond showing how to get the answer.	Notes:
B. The teacher poses high quality questions and problems that prompt students to share their developing thinking about the content of the lesson.	 1 2 3 4 Questions and problems do not prompt students to share their developing thinking. Questions and problems prompt students to share their developing thinking.	
C. The teacher provides time for students to work with and practice grade-level problems and exercises.	 1 2 3 4 Students are given limited time to work with grade-level problems and exercises. Students are given extensive opportunity to work with grade-level problems and exercises.	
D. The teacher uses variation in students' solution methods to strengthen other students' understanding of the content.	 1 2 3 4 A single solution method is provided and discussed. A variety of student solution methods are shared and examined together to support understanding.	
E. The teacher checks for understanding throughout the lesson, using informal, but deliberate methods (such as questioning or assigning short problems).	 1 2 3 4 There are few or no checks for understanding, or understanding of only a few students is assessed. Checks for understanding are used throughout the lesson to assess progress of all students.	
F. The teacher guides student thinking toward the focus of the lesson and summarizes the mathematics with references to student work and discussion.	 1 2 3 4 The lesson concludes with no summary of its focus. The mathematics of the lesson is summarized with reference to student work and discussion.	

² These actions may be viewed over the course of 2-3 class periods.

CORE ACTION 3: Provide all students with opportunities to exhibit mathematical practices in connection with the content of the lesson.³

INDICATORS	ILLUSTRATIVE STUDENT BEHAVIOR ⁴	EVIDENCE OBSERVED OR GATHERED ⁵	
		Scale: 1 = The teacher does not provide students opportunity and very few students demonstrate this behavior. 2 = The teacher provides students opportunity inconsistently and few students demonstrate this behavior. 3 = The teacher provides students opportunity consistently and some students demonstrate this behavior. 4 = The teacher provides students opportunity consistently and all students demonstrate this behavior.	
A. The teacher uses strategies to keep all students persevering with challenging problems.	Even after reaching a point of frustration, students persist in efforts to solve challenging problems.	1 2 3 4	Notes:
B. The teacher establishes a classroom culture in which students explain their thinking.	Students elaborate with a second sentence (spontaneously or prompted by the teacher or another student) to explain their thinking and connect it to their first sentence.	1 2 3 4	
C. The teacher orchestrates conversations in which students talk about each other's thinking.	Students talk about and ask questions about each other's thinking, in order to clarify or improve their own mathematical understanding.	1 2 3 4	
D. The teacher connects students' informal language to precise mathematical language appropriate to their grade.	Students use precise mathematical language in their explanations and discussions.	1 2 3 4	
E. The teacher has established a classroom culture in which students choose and use appropriate tools when solving a problem.	Students use appropriate tools strategically when solving a problem.	1 2 3 4	
F. The teacher asks students to explain and justify work and provides feedback that helps students revise initial work.	Student work includes revisions, especially revised explanations and justifications.	1 2 3 4	

³ There is not a one-to-one correspondence between the indicators for this Core Action and the Standards for Mathematical Practice. These indicators and the associated illustrative student behavior collectively represent the Standards for Mathematical Practice that are most easily observable during instruction.

⁴ Some portions adapted from "Looking for Standards in the Mathematics Classroom" 5x8 card published by the Strategic Education Research Partnership (math.serpmedia.org/tools_5x8.html)

⁵ Some or most of the indicators and student behaviors should be observable in every lesson, though not all will be evident in all lessons.