

# Common Core State Standards of Mathematical Practice

## *What do the Standards look like in practice?*

	Old Normal	Making some progress	New Normal
<b>LAUNCH</b>	<p>Nature of the <b>task is uni-dimensional</b> (e.g. narrows the focus of one's thinking), may be <b>focused on</b> specific set of <b>procedures</b>, and/or does <i>not</i> support the need for a diverse set of group members' skills. [3a]</p> <p>Teacher <b>provides examples</b> of how to solve the task in advance of engaging students in solving the problem(s). <i>Teaching as telling...</i> [1a, 2c, 3d]</p> <p>Teacher gives <b>too many hints</b> and/or answers questions for the students [1a, 2c, 3d]</p> <p>Teacher <b>asks low</b> (e.g. recall) <b>low-level questions</b> [3d]</p> <p>Teacher provides <b>very little or no wait time</b> [2c]</p> <p>Teacher <b>does not support connections</b> to prior learning [1c, 1d, 3c]</p>	<p>The task is sufficiently complex and group-worthy, but the <b>nature of the way it is posed fails to draw the students into the mathematical work</b> to be done (e.g. no making conjectures or the teacher may either consciously or inadvertently focus more directly on the context, but in ways that detracts from the main mathematical goal of the lesson or presents the problem in ways that students approach the problems as a "set of exercises" to be completed). [1a, 2c, 3a, 3b]</p> <p><b>Task is posed in a way that invites speculation, but cognitive demand erodes throughout the lesson</b> (e.g. <b>heavily scaffolding the task</b> reducing opportunity for problem solving or <b>providing some entrée into the solution path by asking leading questions</b> or using explicit statements that lead the learners to use a certain approach (e.g. "you may want to rearrange your (x,y) table so that the rate of change is more obvious.") [1a, 2c, 3a, 3d]</p> <p>Teacher provides <b>adequate individual think time</b> which provides access and promotes productive contributions during group work, but <b>not all individuals in the class appear to be legitimately attending to it</b> during the individual think time (e.g. hands go up, spending the time writing details but not engaging in solving the problem, etc.) [3a, 3b]</p> <p>The <b>teacher prolongs the length of time utilized to launch/pose the problem</b> and as a result, students appear to lose interest in attending to it when given the opportunity to engage in solving it [3a, 3d]</p>	<p>Nature of the <b>task is rich, appropriately challenging, complex and lends itself to multiple solution paths and entry points and posed in ways that invite speculation</b> [1a, 2c, 3a-3c]</p> <p>Students <b>understand their challenge</b> and appear to be <b>intent on attending to it</b> [1a, 2a, 2c, 3a-3c]</p> <p>Teacher provides <b>adequate individual think time</b> which <b>provides access and promotes productive contributions</b> during group work [3a, 3b]</p> <p>Students are <b>making connections</b> to previous knowledge, skills, and understandings [1c, 3a, 3c]</p>

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<b>INVESTIGATE</b>	<p>Classroom <b>arrangement does not support collaborative work</b> (e.g. rows and columns with no opportunity for talking provided) [2a, 2d]</p> <p>Teacher is <b>fixed in the front</b> of the classroom [2d]</p> <p><b>Lecture prevails</b> rather than interactive atmosphere [2c, 3b, 3d]</p> <p><b>Minimal (or no) opportunities for collaboration</b> are provided [1b, 2a]</p> <p>Teacher provides <b>minimal opportunities for students to share their own thinking or work with their peers</b> [2a, 2c]</p> <p>Teacher both asks <b>and answers his/her own questions</b> [1a, 2c, 3d]</p> <p>Learning is passive (little to <b>no active student engagement</b>) [3a, 2c]</p> <p>Teachers asks <b>“fill-in-the-blank” questions</b> (and students appear to be guessing what to insert in the blank) [3d]</p> <p>Teacher continually lowers the cognitive demand of the task (e.g. <b>heavily scaffolding the task</b>-opportunity for problem solving is minimal) [3d]</p> <p>The <b>final authority clearly resides with the teacher</b> [2b, 2c, 2d]</p>	<p>Students may be <b>sitting in groups</b>, but there is <b>minimal engagement between group members</b> [2a, 2c, 3a]</p> <p>Teacher provides <b>some opportunities for collaboration</b> (e.g. pair work) [2c, 3a, 3d]</p> <p><b>Investigative time is either too little or too much</b> (not sufficient to really engage or too far along to learn anything from the share out) [2a]</p> <p>Teacher seems uneasy (still more focused on <b>controlling versus gathering data</b>) [2b, 2c, 3b]</p> <p>Teacher appears to have <b>anticipated, common student misconceptions, but may miss opportunities</b> to surface them in ways that supports a consolidated understanding of the concepts [1c, 3c]</p> <p>Students’ <b>arguments are focused on what they did</b>, but not necessarily “why” they did what they did [2a, 3c, 3da, 3b, 3d]</p> <p>Students are <b>not readily questioning or critiquing the reasoning of their peers</b> [3c, 3d]</p> <p><b>Minimal opportunity for students to reflect</b> on their learning [3a]</p> <p>Students are <b>narrowly focused on their own responses</b> rather than that of their peers [3d]</p> <p>Teacher gathers data during the investigation, but appears to <b>rely on volunteers</b> (does not purposefully select and sequence shares) [3e]</p> <p>Students still seem <b>reliant of teacher’s affirmation</b> of approach [2b, 2c, 2d]</p>	<p>Teacher <b>purposefully prompts students to talk about each others’ explanations</b> (purposeful critique) [1a, 1e]</p> <p>Teacher seems to be <b>more at ease with the “business” of a problem-centered</b>, collaborative classrooms (e.g. purposefully promotes group interaction and critical junctures) [1c, 1d, 1e, 2a, 2c]</p> <p><b>Students question each other</b> (and teacher encourages this behavior) [2a, 2c, 3a, 3d]</p> <p>Students exhibit <b>perseverance</b> [2b-2c, 3a, 3d]</p> <p>Students’ <b>arguments are focused on both how and why</b> they did what they did [2a, 3c, 3da, 3b, 3d]</p> <p>Students are positive (<b>supportive atmosphere</b>-students helping students) [2c, 2d, 3d]</p> <p>Teacher appears to have established a <b>protocol/norms for the learning culture</b> [2a-2d]</p> <p>Teacher appears to be <b>purposely monitoring and selecting students</b> to share their presentations with the class [3b, 3c]</p> <p>Students are comfortable making mistakes, critiquing and questioning each other, and <b>analyzing errors (safe environment</b> where students try out ideas) [2a-2d, 3e]</p> <p><b>Students are thinking about efficiency</b> and are <b>naturally wonder about generalizations</b> [3a, 3c, 3d]</p> <p>The <b>authority seems to reside in their reasoning and defense about the math</b> (rather than the teacher) [2c, 3a, 3d, 3e]</p>

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<b>SUMMARIZE &amp; ASSESS</b>	Teacher asks <b>low</b> (e.g. recall) <b>low-level questions</b> [3d]	Students are <b>narrowly focused on their own responses</b> rather than that of their peers [3d]	<b>Students question each other</b> (and teacher encourages this behavior) [2a, 2c, 3a, 3d]
	Teacher provides <b>very little or no wait time</b> [2c]	Students are <b>not questioning or critiquing the reasoning of their peers</b> [3c, 3d]	Students' <b>arguments are focused</b> on both <b>how and why</b> they did what they did [2a, 3c, 3da, 3b, 3d]
	<b>Teacher</b> does all of the <b>summarizing</b> (goes into telling mode) [3d]	Student <b>accountability during the presentation is in question</b> (student interaction is low) [1d, 2c]	Teacher purposely works at prompting and <b>making student reasoning and thinking public</b> (in the foreground) [2a-2c, 3a, 3d]
	Teacher <b>continually rephrases or re-voices students'</b> responses [2c]	Students seem <b>reliant of teacher's affirmation</b> of approach from teacher [2b, 2c, 2d]	Lesson <b>chunking maximizes student engage in understanding</b> (e.g. good use of distributed summary) [2a, 3a]
	Teacher <b>relies on a consistent (small) group of volunteers</b> [3d]	<b>Teacher intervenes during student shares</b> (e.g. jumping in, clarifying, etc.) [2b, 2c, 3d]	Teacher <b>anticipates, notes and fully addresses</b> common student <b>misconceptions</b> [1c, 3c]
	Teacher <b>does not provide adequate time for consolidation of learning</b> [3d]	Groups or individuals <b>present solutions, but not thinking process</b> [3a]	Students <b>build on one another's strategies/thinking and generate and defend arguments</b> [2a, 2c, 2d, 3a, 3c]
	Summary consists of a whole group share out in which no time for processing occurs and the <b>share out is dominated by a small set of volunteers</b> [3e]	Student <b>presentations are focused on arguments of how</b> they approached the task, but may <b>lack the rationale for why</b> they did what they did [3a, 3c]	Classroom <b>culture</b> seems to have <b>fostered curiosity and sense making</b> which is reflected both in terms of the questions that students pose to one another, but also questions they think about themselves ("I wonder if this always works?" "Why does this seem to be true?" "Can I find a counter example?" [3d, 3e]
	<b>Opportunity for reflection on learning is non-existent</b> [3a]	Nature of the <b>share out</b> seems more <b>about turn-taking</b> than a genuine consolidation of understanding (e.g. every group presents their answers while class listens, passively) [3a]	Teacher <b>provides opportunities for additional thoughts/insights, shares, and questions</b> [3d, 3e]
		Teacher gathers data during the investigation, but appears to <b>rely on volunteers</b> (does not purposefully select and sequence shares) [3e]	<b>Mathematical proficiency</b> appears to be <b>evolving</b> over time [1a, 1e]
		Students are held <b>accountable for learning</b> (e.g. actively involved during share out, take notes, critiquing, asking questions), but the nature of the questions does not necessarily demand stronger argumentation [2a, 2c, 3a, 3c, 3d]	
	<b>Minimal opportunity for students to reflect</b> on their learning [3a]		

