



Engagement Activity

**On each sticky note write
one verb that describes
“doing mathematics”**



Implementation Mathematics Common Core

Module 1.1





Verb	How it looks	How it sounds
<input data-bbox="401 392 540 535" type="text"/> <input data-bbox="401 564 540 706" type="text"/> <input data-bbox="401 735 540 878" type="text"/> <input data-bbox="401 906 540 1049" type="text"/>		



Essential Questions

What strategies can we use to enhance our instruction so students learn mathematics with understanding?

What does this look and sound like?



Instructional Practice Guides

Instructional Practice Guides have been developed for Mathematics (K-8 and HS). The guides are:

- Intended to **support teachers in developing their practice**, and to help coaches or other instructional leaders in supporting teachers to do so.

Through:

- **Teacher self-reflection**
- **Teacher-to-teacher learning in PLCs, grade-level meetings or other collaborative structures**
- **Coaching and feedback from instructional coaches or leaders**



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

MATH K-5 D CCSS INSTRUCTIONAL PRACTICE GUIDE				
CORE ACTION 3: Provide all students with opportunities to exhibit mathematical practices in connection with the content of the lesson. ²				
INDICATORS	ILLUSTRATIVE STUDENT BEHAVIOR ³	EVIDENCE OBSERVED OR GATHERED ⁴		
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	

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.

² 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.
³ Some portions adapted from "Looking for Standards in the Mathematics Classroom" fall card published by the Strategic Education Research Partnership (math.usg.edu/research/_s4d2zme)
⁴ Some or most of the indicators and student behaviors should be observable in every lesson, though not all will be evident in all lessons.

This guide is for use by teachers, those providing support to teachers, and others working to implement the CCSS for English Language Arts and Literacy - it is not designed for use in evaluation. The guide is intended for use in conjunction with the CCSS Instructional Practice Guide Supplement for Reflection Over the Course of the Year. Both tools are available at achievethecore.org/instructional-practice.

CORE ACTION 3: Provide all students with opportunities to exhibit mathematical practices in connection with the content of the lesson.²

INDICATORS	ILLUSTRATIVE STUDENT BEHAVIOR ³	EVIDENCE OBSERVED OR GATHERED ⁴				
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.	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.	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				

² 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.

³ Some portions adapted from "Looking for Standards in the Mathematics Classroom" 5d card published by the Strategic Education Research Partnership (mathusermedia.org/look_5d.html)

⁴ Some or most of the indicators and student behaviors should be observable in every lesson, though not all will be evident in all lessons.



Guiding Questions

- What do you notice about what students need to do?
- What is the theme?
- What are the teacher actions?



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Norms for Viewing Records of Practice

- Assume that there are many things you don't know about students, and the shared history of the teacher and students in the video.
- Assume good intent and expertise on the part of the teacher.
- Keep focused on your observations about what student are getting out of the talk and interaction.
- Keep focused on how the classroom discourse is serving the mathematical goals of the lesson.



Video

- What evidence do you observe that supports this indicator?
- If you did not observe evidence, what type of evidence may support it this indicator?



Stop and Jot

Consider the indicators in Core Action 3

What do you do to assist students in clarifying their own thinking?



Talk Moves

Turn and Talk

Revoicing

Say More

Wait Time

Stop and Jot





Closing

- Add at least two ideas to your matrix to extend the groups thinking/reasoning.
- Is there anything that you posted earlier that you are questioning or wondering about?
- Put a question mark by any ideas you are now wondering about.



“The National Council of Teachers of Mathematics (NCTM) has encouraged teachers to use classroom discourse in math classes, to support both students’ ability to *reason mathematically* and their ability to *communicate that reasoning*. When teachers commit themselves to *teaching for understanding*, classroom discourse and discussion are key elements of the overall picture.”

- Classroom Discussions: Seeing Math Discourse in Action, Grades K-6. Reproducible 1.1A



For next time....

- As a grade level, select one talk move you would like to try in your classroom. Be prepared to discuss it next time.
- For the next Pink Wednesday, with your grade level select and bring at least one lesson from the unit you are planning on teaching before break.