



Implementing Mathematics Common Core

Module 1-2:

Helping Students Orient to the Thinking of Others

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Washoe County School District
Every Child, By Name And Face, To Graduation™



Objectives

- Understand the connections in teaching and learning that are required in the Mathematics CCSS.
- **Explore tools to enhance Mathematics CCSS instruction through discussion and learning opportunities.**
- Consider similarities in the mathematics and ELA practices that support student learning.





Four Steps Toward Productive Talk

Helping Individual Students Clarify and Share Their Own Thoughts

Helping Students Orient to the Thinking of Others

Helping Students Deepen Their Own Reasoning

Helping Students Engage with the Reasoning of Others



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“Talk Move” Concentration

Take the cards out of the envelope, place them face side down.

Take turns flipping over one of each color card.

Keep the two cards if the talk move matches the benefit.



“Talk Move” Concentration

Stop and Jot:

Were there any surprises?

Were any connections made?

Do you have any lingering questions?



Implementation Mathematics Common Core

Module 1-2



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Essential Questions

- What strategies can we use to enhance our instruction so students learn mathematics with understanding?
- What does this look and sound like?

Objective

- Explore tools to enhance Mathematics CCSS instruction through discussion and learning opportunities.



Refocus & Connect

How can we help students orient to the thinking of others?



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.



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.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	

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' 5th card published by the Strategic Education Research Partnership (math.uzpmedia.org/look_5v10.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.



Using your note-taker...

What indicators are supported by talk moves to help individual students clarify their own thinking?

What indicators are supported by talk moves to help individual students orient to the thinking of others?



Application of Learning

- **Select a lesson you intend to teach in the next few weeks from the unit of study you brought.**
- **What are the possible misconceptions or partial understandings in the mathematical content?**
- **Where are opportunities in the lesson for you to support students to clarify their thinking and/or orient to the thinking of others?**
- **What talk moves will you use strategically during these learning opportunities?**



“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....

- Teach your lesson(s) using the “talk moves” that will help students clarify their own thinking and orient to the thinking of others.

Hint: Think about the misconceptions/ partial understandings and the big mathematical idea in your lesson(s) and use the talk moves to help students navigate their new learning.

- Be ready to share what worked during the next Pink Wednesday.