Supporting Lesson Design with Instructional Rounds
NCTM April 2018

Success Criteria

- My team can articulate intentional connections between content and process standards, effective instructional practices, and increased student learning.

Starting … Getting There … Got It!

- I can support my team with making instruction transparent to build shared knowledge.

Starting … Getting There … Got It!

What is our professional vision for mathematics instruction?

What are the connections?

Expected student actions aligned to your vision	Expected teacher actions aligned to your vision	Expected evidence of student learning aligned to your vision

Standards for Mathematical Practice		Mathematics Teaching Practices	
SMP1	Make sense of problems and persevere in solving them	MTP1	Establish mathematics goals to focus learning
SMP2	Reason abstractly and quantitatively	MTP2	Implement tasks that promote reasoning and problem solving
SMP3	Construct viable arguments and critique the reasoning of others	MTP3	Use and connect mathematical representations
SMP4	Model with mathematics	MTP4	Facilitate meaningful mathematical discourse
SMP5	Use appropriate tools strategically	MTP5	Pose purposeful questions
SMP6	Attend to precision	MTP6	Build procedural fluency from conceptual understanding
SMP7	Look for and make use of structure	MTP7	Support productive struggle in learning mathematics
SMP8	Look for and express regularity in repeated reasoning	MTP8	Elicit and use evidence of student thinking

Adapted from: Standards for Mathematical Practice are part of the *Common Core State Standards for Mathematics* (CCSSO, 2010) and the Mathematics Teaching Practices are from *Principles to Actions: Ensuring Mathematical Success for All* (NCTM, 2014)

- Which student mathematical practice will **teachers** emphasize in a lesson? Why?
- What teaching mathematics practice will **teachers** emphasize in a lesson? Why?
- What will students ***do*** to demonstrate their learning of that habit of mind?
- What **teacher actions** will be evident in the lesson?

Six Elements of Lesson Design

Element	Comments
1. Aligned to an essential learning standard	
2. Prior knowledge warm-up activities	
3. Academic language (vocabulary and notation) as part of instruction	
4. Balance of higher- and lower-level cognitive demand tasks	
5. Whole group and small group discourse	
6. Lesson closure for evidence of student learning	

Kanold, T., Barnes, B., McIntyre, J., Schuhl, S., Toncheff, M. (2018). *Book 2: Mathematics instruction and tasks: Equity Series for Mathematics in a PLC at Work.* Solution Tree: Bloomington, IN

Levels of Classroom Discourse

	Teacher Role	Questioning	Explaining Mathematical Thinking	Mathematical Representations	Building Student Responsibility Within the Community
Level 0	Teacher is at the front of the room and dominates conversation.	Teacher is only questioner. Questions serve to keep students listening to teacher. Students give short answers and respond to teacher only.	Teacher questions focus on correctness. Students provide short answer-focused responses. Teachers may give answers.	Representations are missing, or teacher shows them to students.	Culture supports students keeping ideas to themselves or just providing answers when asked.
Level 1	Teacher encourages the sharing of math ideas and directs speaker to talk to the class, not to the teacher only.	Teacher questions begin to focus on student thinking and less on the answers. Only teacher asks questions.	Teacher probes student thinking somewhat. One of two strategies may be elicited. Teacher may fill in an explanation. Students provide brief descriptions of their thinking in response to teacher probing.	Students learn to create math drawings to depict their mathematical thinking.	Students believe that their ideas are accepted by the classroom community. They begin to listen to one another supportively and to re-state in their own words what another student has said.
Level 2	Teacher facilitates conversation between students, and encourages students to ask questions of one another.	Teacher asks probing questions and facilitates some student-to-student talk. Students ask questions of one another with prompting from the teacher.	Teacher probes more deeply to learn about student thinking, Teacher elicit multiple strategies. Students respond to teacher probing and volunteer their thinking. Students begin to defend their answer.	Students label their math drawings so that others are able to follow their mathematical thinking.	Students believe that they are math learners and that their ideas and the ideas of their classmates are important. They listen actively so that they can contribute significantly.
Level 3	Students carry the conversation themselves. Teacher only guides from the periphery of the conversation. Teacher waits for students to clarify thinking of others.	Student-to-student talk is student initiated. Students ask questions and listen to responses. Many questions ask "why" and call for justification. Teacher questions may still guide discourse.	Teacher follows student explanation closely. Teacher asks students to contrast strategies. Students defend and justify their answers with little prompting from the teacher.	Students follow and help shape the descriptions of others' math thinking through math drawings and may suggest edits in others' math drawings.	Students believe that they are math leaders and can help shape the thinking of others. They help shape others' math thinking in supportive, collegial ways and accept the same support from others.

(**Source:** Hufferd-Ackles, Fuson, & Sherin, "Describing Levels and Components of a Math-Talk Learning Community," *Journal for Research in Mathematics Education*, 2004, *35*(2) 81–116)

Instructional Rounds Protocol	**Notes**
Step 1: Norms	
Step 2: Instructional Focus and Logistics	
Step 3: Collect Evidence of Student thinking	
Step 4: Analyze the Evidence	

Instructional Rounds Planning: https://goo.gl/zqmVt1

Team(s) and/or observers:	**Date of Instructional Round(s):**
Facilitator:	**Times:**
What are the agreed upon norms?	
What is our instructional focus? • What evidence are we going to collect? • What student actions are being observed that support our team's focus instructional goal? • What teacher actions aligned to the instructional focus promote increased learning or mathematical thinking?	
What is the schedule for the instructional rounds? • Start/end time of observations • Debrief scheduled • Number of classes observed • Number of minutes in each class	
What feedback will be collected and shared?	
Who will collect and share the evidence of the instructional rounds? What expectations for action on the feedback will be promoted?	

Handouts and slides link: https://goo.gl/d7zdxf

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