

# MQI COACHING

## Curriculum-Aligned Math Coaching: practical tips to support implementation of HQIM

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# What is HQIM?

- High-Quality Instructional Materials (HQIM) are materials used for instruction that:
  - Closely align with content standards
  - Are comprehensive and easily used by teachers
  - Allow for consistency in instruction that removes the burden from teachers to find materials on their own
  - Provide opportunities for students to engage in lessons and activities that are on their grade level and require them to use a multitude of mathematical practices



# Curriculum-Aligned Coaching

- HQIM provides:
  - A research-based curriculum
  - Rigorous lesson plans that are aligned to standards and sequenced to support deeper learning
  - Routines, structures, and activities that provide opportunities for students to think critically and build conceptual understandings
- MQI Coaching supports with:
  - Implementation of HQIM with fidelity
  - Understanding in more specific terms what good instruction looks like and sounds like
  - Incorporating high-quality instructional practices into HQIM lessons to maximize student learning



# HQIM Example

- Illustrative Mathematics (IM)
  - Greenlit for meeting expectations in all categories by EdReports
  - Problem-based pedagogy
    - Student centered
    - Rigorous
    - Deeply engaging
  - Aligned to grade level appropriate standards
- Our curriculum-aligned coaching model can work with all types of curricula.

## All Green on All EdReports Gateways

**FOCUS & COHERENCE**



**RIGOR & MATHEMATICAL PRACTICES**



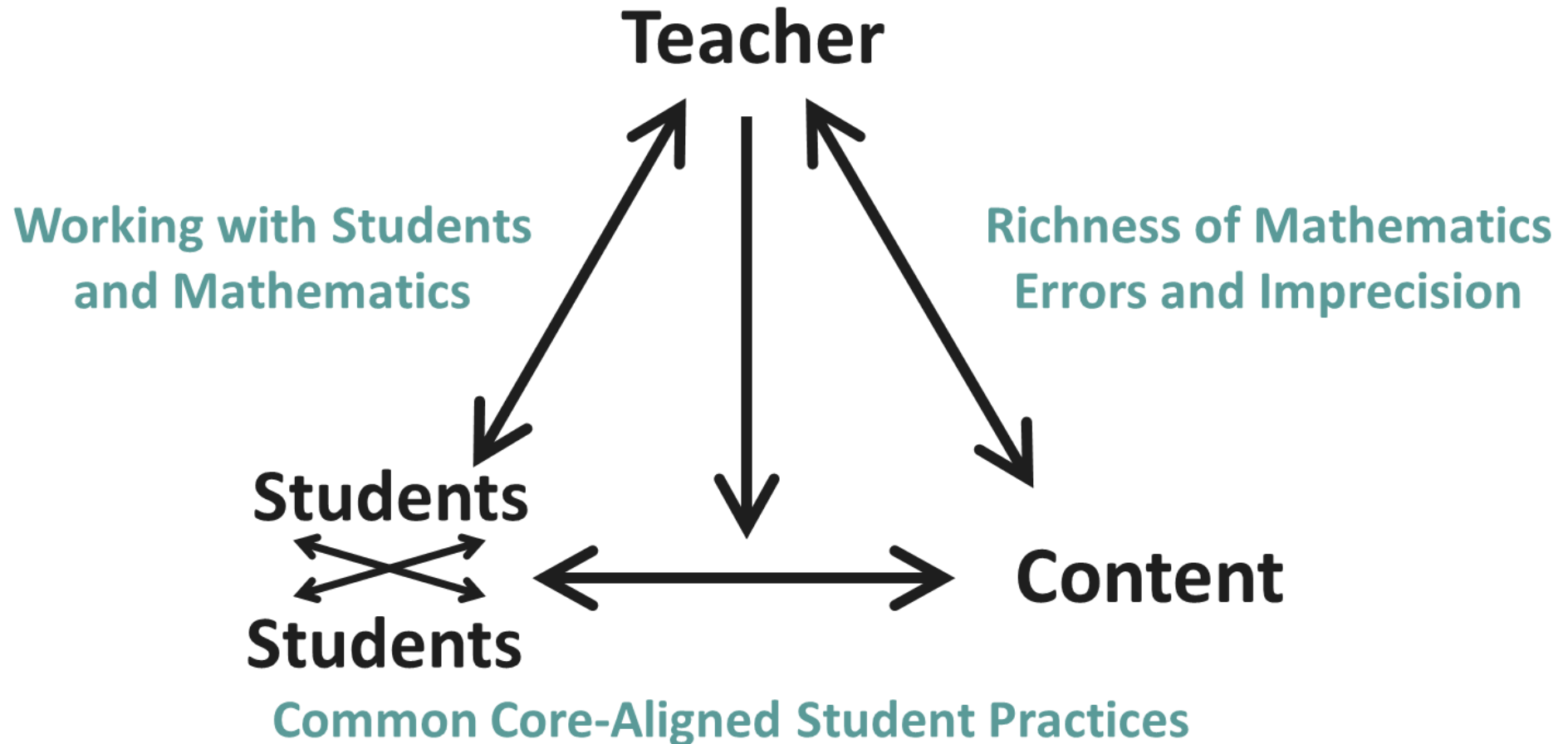
**USABILITY**



**MEETS EXPECTATIONS**



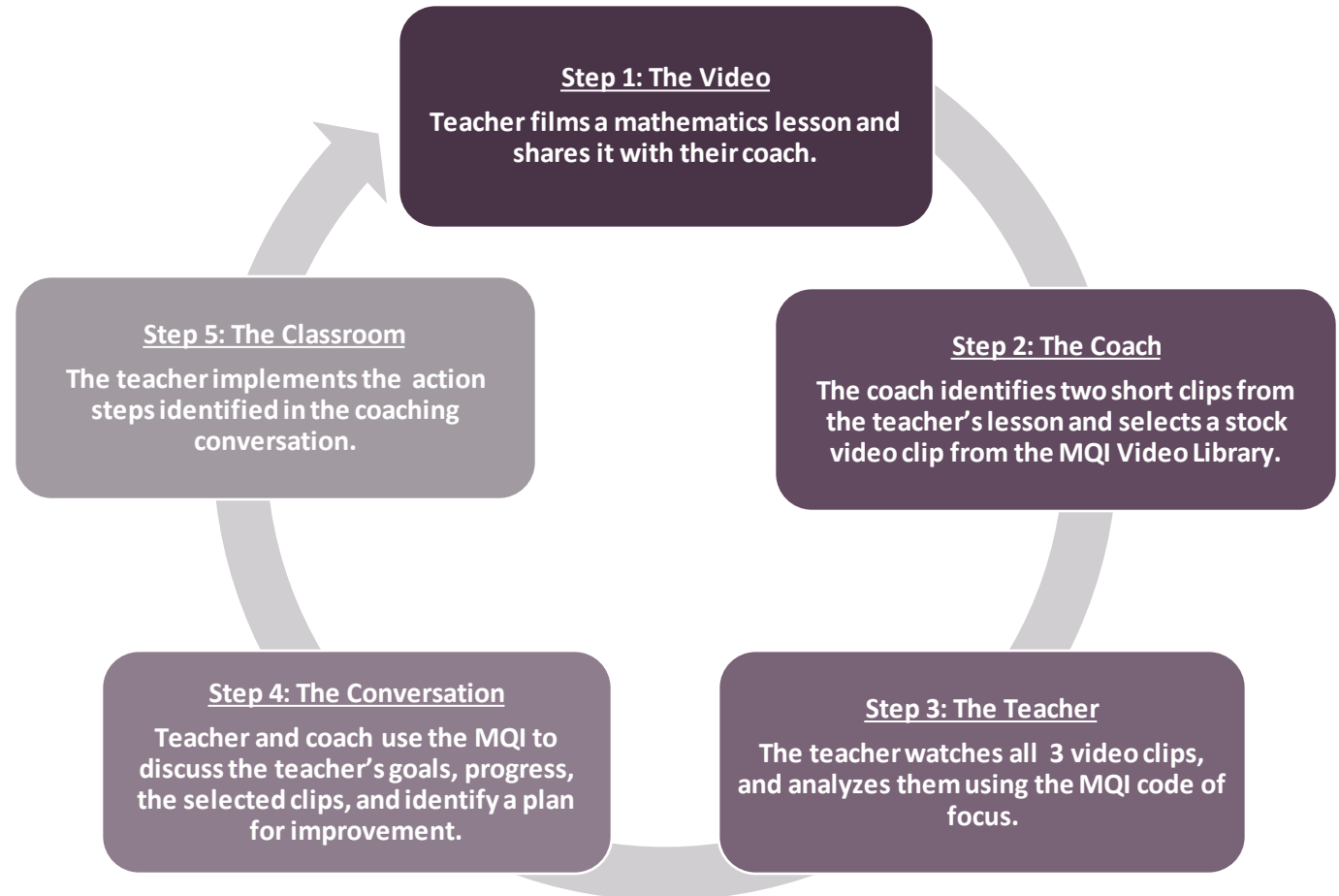
# The Mathematical Quality of Instruction (MQI)



# MQI COACHING

Based on an MQI-grounded goal, chosen by the teacher:

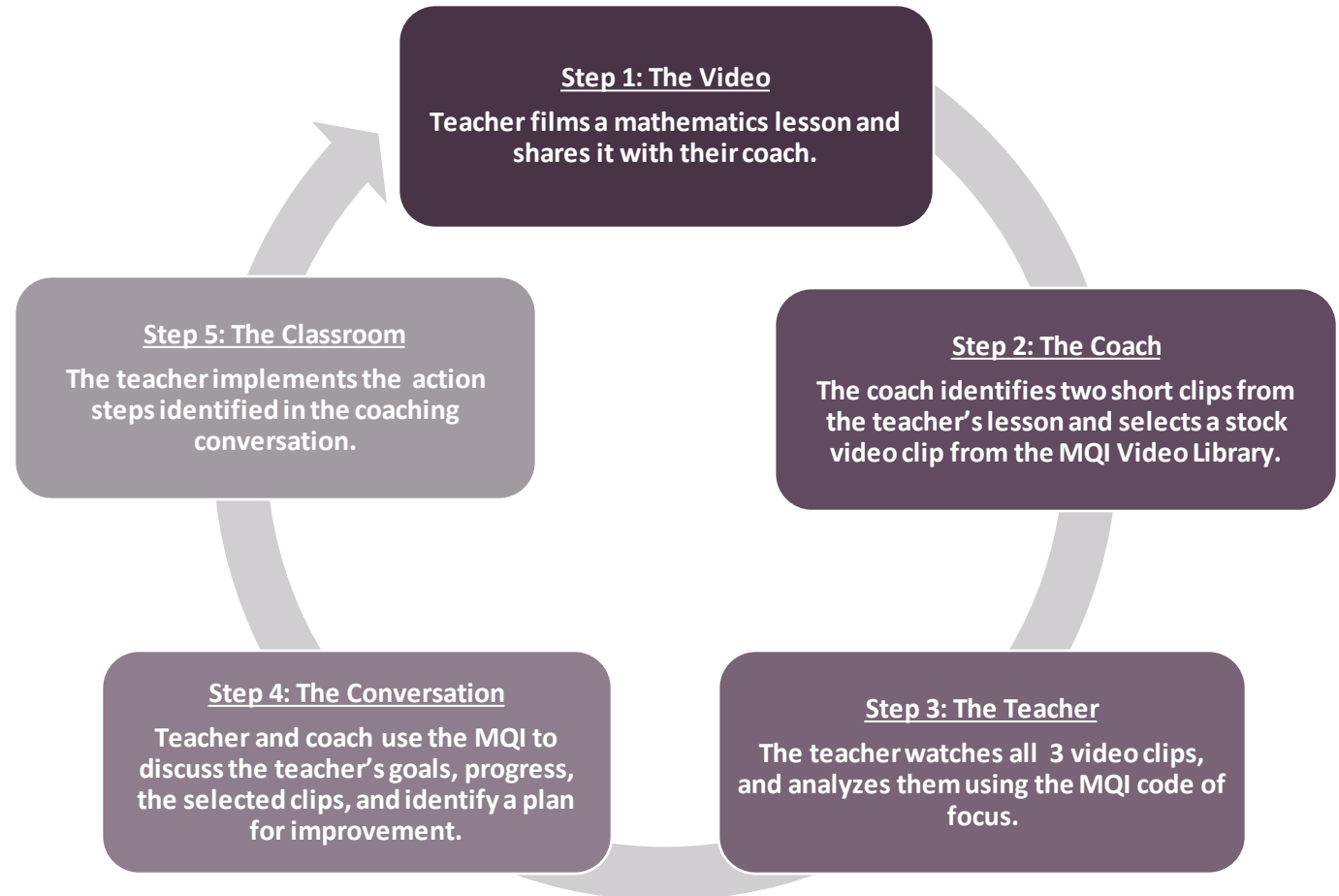
- **Ongoing one-on-one** observation and feedback
- **Teacher-driven**
- Focus on **decomposing teachers' own practice** (video clips and transcripts)
- Routine of brainstorming ways to **elevate** teachers' **implementation of HQIM or curriculum** with high leverage practices



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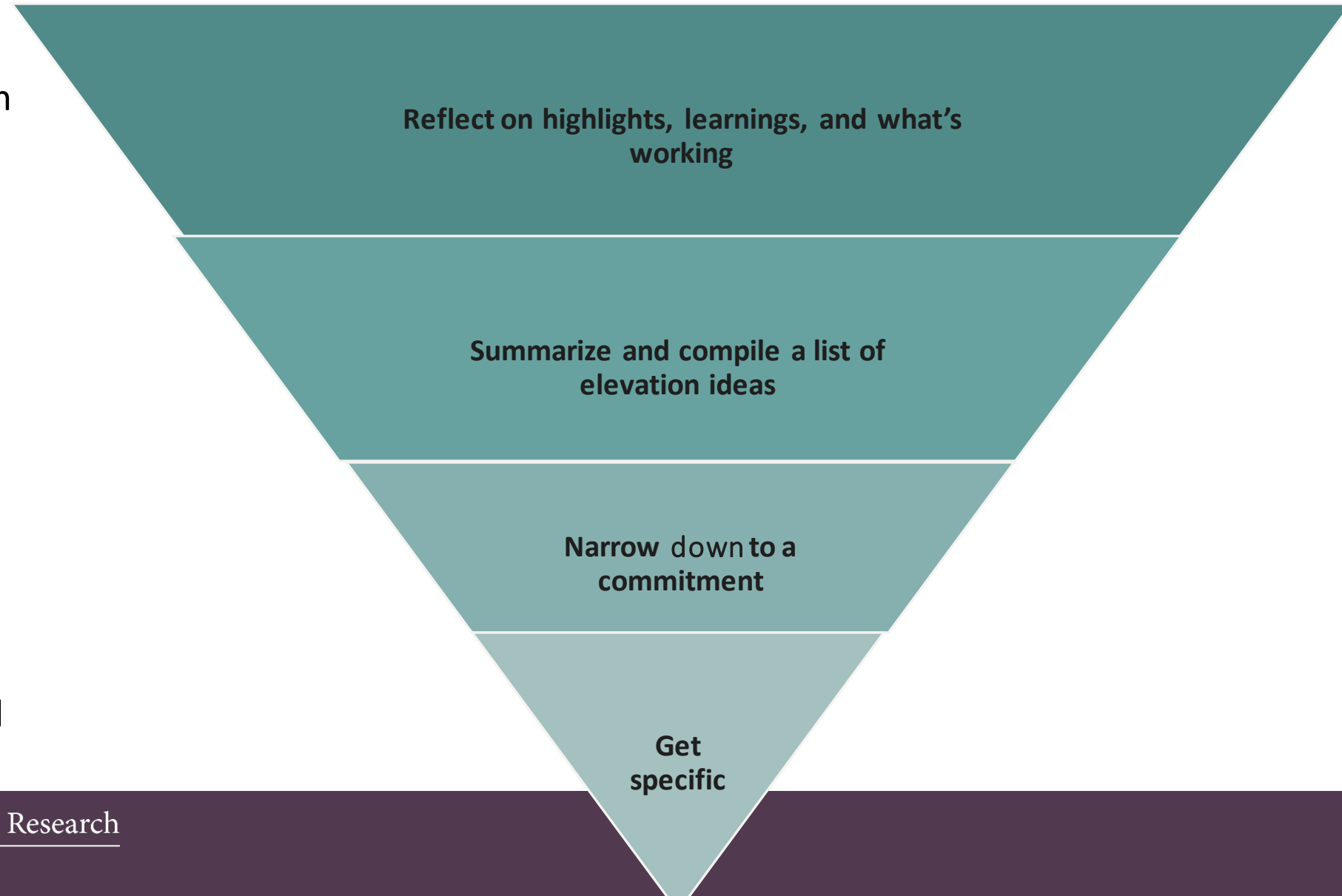
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- **Ongoing one-on-one** observation and feedback
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After video-analysis of a past lesson, teacher and coach plan ahead:

- Encourages incremental changes within their existing structures and curriculum
- Results in specific and actionable next steps
- Apply next steps to future lessons from HQIM or curriculum
- **Pull up a future lesson or instructional routine to incorporate the identified next steps**





# General Principles for Discussing Coaching Excerpts:

- MQI Coaching Glasses On
- Respect for teachers and coaches in these videos
- Respect for teachers and coaches generally
- Assume the best –
  - Recognize that even the best coaches make occasional missteps or have less than perfect coaching
  - Recognize that each coach has strengths and weaknesses
- Criterion  $\neq$  perfect coaching
  - Impossible to enact
  - Instead, faithfully capture what happened in the conversation



# Coaching Conversation Context

- MQI code of focus:
  - Task Cognitive Demand
- Before this clip:
  - The coach and teacher have just finished describing and elevating a clip of the teacher's own instruction from a past lesson.
  - A list of elevation ideas has been generated and documented in the collaborative log.
- In this clip:
  - The teacher is choosing a next step to commit to and getting specific about how she will implement it
  - The coach is displaying a future lesson plan and facilitating a discussion of where this next step might fit best within that lesson to have the greatest impact.



## Task Cognitive Demand

This code captures student engagement in tasks in which they think deeply and reason about mathematics. This code refers to the *enactment* of the task, regardless of the initial demand of the curriculum/textbook task or how the teacher sets up the task for students.

**Notes:**

- \*Student confusion does not necessarily suggest that students are engaging with the content at a high cognitive level.
- \*Working on review tasks or on ideas discussed in previous lessons does not necessarily mean that students use lower order thinking skills.
- \*This code should not be confounded with the difficulty of the task or whether it is appropriate for a certain grade-level.
- \*Code a student presentation of a solution method at the same level of cognitive demand as the task itself was coded.

Not Present	Low	Mid	High
<p>Students are engaged in cognitively undemanding activities.</p> <p>Examples of cognitively <i>undemanding</i> activities include:</p> <ul style="list-style-type: none"> <li>**Recalling and applying well-established procedures</li> <li>**Recalling or reproducing known facts, rules, or formulas</li> <li>**Listening to a teacher presentation with limited student input</li> <li>**Going over homework with little additional student work (e.g., reporting numerical answers)</li> <li>**Unsystematic exploration (i.e., students do not make <i>systematic and sustained progress in developing mathematical strategies or understanding</i>)</li> </ul>	<p>There is a brief example of a cognitively demanding activity, e.g.</p> <ul style="list-style-type: none"> <li>**A momentary think-pair-share where students define a term</li> <li>**Direct instruction with one or two examples of student explanations or SMQR</li> <li>**Tasks with a momentary high cognitive demand element</li> <li>**Tasks that are not completely routine, but are heavily scaffolded for students with hints or directions</li> </ul>	<p>Segment features mix of demanding and undemanding tasks and activities, e.g.</p> <ul style="list-style-type: none"> <li>**Tasks with variable enactment (e.g., demanding tasks followed by a transition to undemanding tasks; or, when working in small groups, some groups work on a high-demand task while some groups work on an undemanding task)</li> <li>**Direct instruction with student explanations and/or SMQR input at certain points</li> <li>**Tasks with middling cognitive demand</li> </ul>	<p>Students engage with content at a <i>high</i> level of cognitive demand.</p> <p>Examples of cognitively <i>demanding</i> activities include when students:</p> <ul style="list-style-type: none"> <li>**Determine the meaning of mathematical concepts, processes, or relationships</li> <li>**Draw connections among different representations or concepts</li> <li>**Make and test conjectures</li> <li>**Look for patterns</li> <li>**Examine constraints</li> <li>**Explain and justify</li> </ul>



# Consider as you watch:

- What is the **coach doing to support** the teacher's implementation of their chosen next step?
- How are the coach and teacher **using the MQI Rubric and the IM lesson plan** as they plan for the implementation of the next step?
- In what ways is the coach making sure the conversation is **driven by the teacher**?



# Next Steps Demonstration Video

The image shows a Google Docs document titled "Coaching Conversation #2" overlaid on a PDF document titled "Mathematical Quality of Instruction (MQI) 4-point".

**Mathematical Quality of Instruction (MQI) 4-point**

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**Coaching Conversation #2**

Brief lesson summary:	Lesson 4 - Same Size, Related Sizes (IM, Grade 4, Unit 2, Lesson 4)
MQI code(s) of focus:	Task Cognitive Demand
Stock clip:	Daria: Fish Dilemma
What's working:	<ul style="list-style-type: none"> <li>Students are getting a little more confident with sharing</li> <li>more students are doing better with understanding and remembering things from 3rd grade, I think</li> </ul>
Elevation ideas:	<p>TCD:</p> <ul style="list-style-type: none"> <li>Give the students more independent think time before sharing time</li> <li>Reinforce their confidence, celebrate that they CAN do it without me</li> <li>Ask more "why" questions originally and as follow up to "justify"</li> </ul>
Teacher's Next Steps:	-
Upcoming Lesson – Application	<a href="#">Lesson 6: Relate Fractions to Benchmarks</a> (IM, Grade 4, Unit 2, Lesson 6)
Coach's Next Steps:	-
Parking Lot:	
Date and time of next meeting:	
Date by which next video will be filmed:	

The video overlay shows a "Coach" and a "Teacher" in a meeting. The Coach is speaking, and the Teacher is listening. There are also video thumbnails for "Coach" and "Teacher" visible.

At the bottom of the screenshot, there are four "Screenshot" entries with timestamps: 2024-0...50.42 PM, 2024-0...11.29 AM, 2024-0...04.31 AM, and Lynn Design Team.



# What did you notice? (share in the chat)

- What is the **coach doing to support** the teacher's implementation of their chosen next step?
- How are the coach and teacher **using the MQI Rubric and the IM lesson plan** as they plan for the implementation of the next step?
- In what ways is the coach making sure the conversation is **driven by the teacher**?



# Coach moves: what did the coach do to make that successful?



## Coach move: letting the teacher drive

“So, which of these [elevation ideas] do you think will have the most positive impact on elevating the Task Cognitive Demand for your students?”

*“I think, I think I really want to work on making sure I’m like giving that independent time that we talked about – you know making sure every student has enough time to think things through themselves before we talk or share out. I just like, I have the tendency to jump in and help before they’ve had enough time to work things through on their own, so I don’t know. Sometimes I don’t know what they could have come up with if I hadn’t jumped in. So, I think if I can do that, that’ll help reinforce their confidence, and like show them that they can do it without me. “ -Teacher*



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### Coach move: get specific in the lesson plan

*“So now, let’s take a look at the next lesson you’ll be teaching... figure out where it’s going to make sense to really focus on applying these next steps.”*

*“Anywhere else where you see places to focus on, in terms of that independent time?”*

*“Ok, well, let’s look at activity 1, and see what you’d need to provide in this case.”*



## Coach move: leverage what is already there

*“I guess one thing I am noticing, is like right in the warm-up. Yeah, right in that warm-up is that 1 minute of quiet think time built in during the notice and wonder”*

*“I guess in Activity 1, there’s 5 minutes of independent work time before the group work... same thing in Activity 3”*

### Activity 1

#### Activity

Greater Than or Less Than 1?

- “Take a few minutes to work independently on at least two diagrams before discussing with your group.”
- 5 minutes: independent work time
- 5–7 minutes: group work time
- Monitor for students who:
  - label one or more tick marks with unit fractions
  - locate the number 1 on the number line when it is not given

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“So which of these do you think will have the most positive impact on elevating the **Task Cognitive Demand** for your students?”

**Coach move: use the MQI rubric**

Focus on how to implement **independence** for students throughout the discussion  putting the cognitive demand on the students, rather than the teacher

“That’s great. So, you’re supporting them, but you’re not taking the **cognitive demand** away.”



*“Mm so it will help with reinforcing. I love that. Ok, great. I think that’s a great idea.”*

*“Oh, ok yeah, that’s perfect! So, what could you do with that?”*

*“Mm, yeah definitely! That’s great. So, you’re supporting them, but you’re not taking the cognitive demand away from the task.”*

*“Yes, definitely. I think it would go great with this next step you chose, so it’s about giving them more independent time, and then reinforcing their confidence through that think time.”*

**Coach move:  
use positive  
reinforcement**



# MQI Theory of Action

- Teachers will learn the MQI, providing them with a framework for planning, enacting and reflecting on their mathematics instruction.
- Watching and evaluating stock video clips from our library allows teachers to see a wide range of practice.
- Stock videos also serve as a norming process for when they look at video of their own instruction.
- Teachers will watch video of their instruction, and they will use the lens of the MQI to evaluate and reflect on their own practice.
- **Teachers and coaches will collaborate to produce specific and actionable steps for improvement and will discuss the details of implementing within their curriculum.**
- Goals and action steps will be guided by the MQI but chosen by the teacher.



# Coach Moves: Best Practices for Curriculum-Aligned Coaching

- Have the **teacher** commit to a next step
- Get specific in the **lesson plan** – how to make that **next step work in practice**
- Recognize that the “elevation” ideas are often already **built into the lesson plan** – the coaching process is really to support the effective/**intentional implementation**
- Ground the conversation in the **MQI rubric** that was used to generate the elevation idea in the first place
- Use **Positive reinforcement** – build from strengths, celebrate what is going well. (Coaching isn’t all about criticism, it’s about building from strengths, too)



# Registrant Questions



# Question 1

- What are good first steps in coaching a teacher to implement HQIM?
- What data from classroom visits is the most impactful?





## Question 2

- What are strategies to promote consistency in the adherence of using HQIM when teachers feel their autonomy has been minimized?



# Question 3

- How to balance fidelity to the curriculum, as expected by my district, but also fidelity to our students' needs?



# Question 4

- There is not an atmosphere of coaching on our campus. How can you coach people who really do not want to be coached?





Thank you! Learn more  
at [mqicoaching.org](http://mqicoaching.org)

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Registration open now! Early bird  
pricing ends April 12<sup>th</sup>!**



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