Choosing Mathematical Tasks for Lesson Design During the Unit

Directions: As a team, use the following questions to discuss how you currently select and use higher- and lower-level-cognitive-demand tasks within your lesson-design process.

1. Describe some of your favorite mathematics problems to use during this unit and how you use them to teach the corresponding essential learning standard.

2. How do you define and differentiate between higher-level-cognitive-demand and lower-level-cognitive-demand tasks for each essential learning standard of the unit?

3. What percentage of your current mathematics tasks you use during instruction fall into the lower-level-cognitive-demand category, and what percentage fall into the higher-level-cognitive-demand category? (Provide an average.)

4. How do you work as a team to select specific common higher-level-cognitive-demand and lower-level-cognitive-demand mathematics tasks that all students of the grade level or course will experience for each essential standard of the unit?

5. Does your team have a proper balance of mathematics tasks you present to students throughout the unit of instruction in terms of the complexity of student reasoning the tasks require? Please explain.

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6. How might what you learn about your students' understanding of the essential learning standard differ depending on the cognitive demand of the mathematical tasks you use during instruction?

7. How do you use higher-level tasks to provide feedback to individual students and groups of students during the lesson?

If it's not part of your team's discussion protocols, your choice of tasks impacts the way in which students experience learning the standard and can be a cause of inequity in the learning process. Use this tool to engage your team in reflective conversations about the choices of mathematical tasks each team member makes each day to teach the mathematics lesson.

Your team should examine the mathematical tasks it uses to teach each lesson and classify the tasks as higher- or lower-level cognitive demand. Not all tasks need to be common across the team for every lesson within a unit; however, there needs to be consistency in the interpretation of the intended rigor of the essential learning standards and the expectations for student proficiency. Even though the specific tasks you and your colleagues choose may not match exactly, the level of rigor students experience from one teacher to the next should be consistent. Also, the types of strategies and tools (manipulatives, technology, and others) students might utilize throughout the unit should be consistent as well. This ensures every student has access to rigorous learning opportunities.

As a team, identify and commit to the use of higher- *and* lower-level cognitive-demand tasks on a consistent basis within your instruction. The *balance* of the types of tasks you choose should support student learning, encourage perseverance, and provide opportunities for you to respond to specific student needs during the lesson. How you select tasks and require students to engage in the tasks matters.

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