Lens 2: Purposes for Using Argumentation Tasks to Support Student Learning

Here are some purposes or goals you might have as you use a task that prompts argumentation in your mathematics classroom. Alternatively, as you analyze tasks, you may notice different tasks are particularly well suited for different types of goals related to argumentation. There are additional goals you might pursue as well when using argumentation tasks, but these are some of the more common ones.

A. Goal: Students produce better arguments
- Support students to communicate their reasoning
- Critique the reasoning of others
- Revise one's approach
- Work towards clarity of explanations
- Attend to quality of warrants and evidence

B. Goal: Students develop conceptual understanding
- Dig deeply into mathematical concept
- Target misconceptions and common errors
- Analyze why a result holds, which reveals the underlying mathematics

C. Goal: Students mathematize problem situations and interpret meanings of solutions in context
- Work towards appropriately applying concepts and prior knowledge in new ways to problem contexts
- Support students to articulate the chain of logic that demonstrates their solution is correct and/or reasonable
- Consider justifications for: (a) the mathematical model used, (b) the correctness of the solution, and (c) how the solution responds to the contextualized situation

D. Goal: Students make sense of and compare across multiple approaches and multiple representations
- Support students to develop fluency with representations
- Make sense of representations (e.g., symbolic notation, graphs, verbal)
- Get many different ideas and approaches out on the table
- Draw connections between representations
- Support students to learn from the reasoning of others