Discourse Moves for Fostering Confident Math Learners

# We ALL speak math

North Carolina Collaborative for Mathematics Learning www.nc2ml.org

## Inviting Student Participation

### What is it?

Providing students with the opportunity to share their ideas, solutions, or strategies.

### Why do we use it?

Inviting students to participate not only serves to initiate a mathematical discussion, but also to elicit multiple student perspectives, encouraging students to listen, and respond to other's contributions. Who we invite to participate can also serve to diminish hierarchical status among students (i.e., perceptions of differences in smartness and ability to participate).

## When Inviting Participation...

### Teachers are...

- asking questions that invite sharing from the whole class as well as specific individuals watching and listening for a variety of ideas, solutions, or strategies
- inviting students to add on to other's ideas, solutions, or strategies
- attending to who is being invited to share and how often

### Students are...

- thinking about how to explain their ideas, solutions, or strategies
- learning to listen
- seeing their ideas as valued contributions seeing their peers' ideas as valued contributions
- making connections between their ideas and other's

**What are you thinking?**

**Who is ready to share their thinking?**

**What do you notice? What do you wonder?**

**Tell us about this (pointing to an idea recorded on the board).**

**Does anyone else want to add on?**

This work was supported by the National Science Foundation under grant DRL - 2100895 awarded to East Carolina University, DRL-2100903 awarded UNC Greensboro, DRL - 2100947 awarded UNC Charlotte, and DRL - 2100833 awarded to Appalachian State University. Any opinions, findings, and conclusions or recommendations expressed herein are those of the principal investigators and do not necessarily reflect the views of the National Science Foundation. Prior related work was supported by the NC Department of Public Instruction.

## Discourse Move: Inviting Student Participation

**It is important to give students the space and time to work through the problem, to guide their thinking while entrusting their ability to find the solution. That starts with inviting students to participate and share their thinking.**

# Support for Administrators

### NC Professional Teaching Standards

**Inviting student participation aligns to Standard 2 and Standard 4.**

**2a.** Teachers encourage an environment that is inviting.

**2c.** Teachers appreciate the differences and value contributions of each student by building positive, appropriate relationships.

**2d.** Teachers engage students to ensure that their needs are met.

**4b.** Teachers engage students in the learning process.

### NC Portrait of a Graduate

**Inviting Student Participation aligns to the Critical Thinking, Communication, and Empathy competencies.**

- Analyze, assess, and reconstruct personal thought processes.
- Articulate thoughts and ideas effectively using oral and written skills.
- Foster belonging and trust through mutual respect and dialogue.

### Standards of Mathematical Practice (SMP)

**SMP1 –** Make sense of problems and persevere in solving them.

- Understand the approaches of others to solving complex problems.

**SMP3 –** Construct viable arguments and critique the reasoning of others.

- Understand and use stated assumptions, definitions, and previously established results in constructing arguments; make conjectures and build a logical progression of statements to explore the truth of their conjectures.

## COACHING UP

**When working with a teacher, here are some questions to help coach the teacher to implement the discourse move of Inviting Student Participation in their classroom.**

### Clarifying Questions...

- How do you create an inviting environment where students feel comfortable to share their thinking with others? How do you engage students to ensure that their individual needs are met?
- How do you support students in articulating their thoughts and ideas effectively using oral and written skills?

### Digging Deeper for Discourse

- How might you use inviting students as a discourse move to help students appreciate and value the differences among their contributions, while building positive and appropriate relationships?
- In the process of engaging students in the learning process, how do you intentionally invite students to analyze, assess, and reconstruct personal thought processes?

**Note:** This resource is being co-designed by the NC math education community. We welcome feedback to inform its refinement at https://forms.gle/8PBWGsvqJQzcdtCF8 Check the website (nc2ml.org/high-school-teachers) for the most up to date resources.