

### Overview of Session 2

- Explaining and evaluating approaches for solving the Pool Border Problem
- Using a classroom video to analyze students' reasoning and teaching practices that establish an environment that nurtures mathematical practice
- Identifying the steps of the video workshop process

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### Discussion of solutions to the Pool Border Problem

How many square tiles does it take to build a border around a square "pool"?

Find a way to know the number of tiles it will take without having to count, for any size pool.



During the discussion, consider:

- Whether each approach will allow you to know the number of tiles for any size pool
- How solutions connect back to the problem (is the explanation complete?)
- How solutions/approaches map onto each other
- The language, representations, and logic used in each explanation

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### Considering explanations of the Pool Border Problem

How many square tiles does it take to build a border around a square "pool"?

Find a way to know the number of tiles it will take without having to count, for any size pool.



Focus questions:

- What features of the explanations supported your understanding?
- What features of different approaches to recording did you find helpful or not as helpful?
- What did you notice about the use of language, representations, and logic in the explanations?

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### Studying mathematics teaching

- Records of practice
- Close attention to talk, student thinking, teacher's moves and comments
- Detail and evidence
- Learning to see and hear practices of teaching

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### Context for the video

- Entering 5<sup>th</sup> graders (10-year olds)
- Two week summer program (8<sup>th</sup> class session out of 10)
  - Number theory, geometry, and pre-algebra
  - Combined work on missing skills and understanding with challenge and acceleration
  - Explicit work on reasoning, using representations, and using definitions
- Students came with a wide range of mathematical skills and varying degrees of interest in mathematics

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### Focus questions

- How are students reasoning about the problem?
- How are students supporting/explaining their approaches using words, drawings, or tools?
- What is the teacher doing to establish and maintain an environment that nurtures student reasoning practices?

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### Debriefing the discussion

- What information that was shared about the context seemed helpful in understanding the teaching? What additional information would have been useful? Why would that be important?
- How well did we focus on the main questions? What might help improve the focus?
- How well did we make use of specific instances in the video?

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### Using video to study and improve practice

In this module, you will:

- Engage in “video workshops”
- Learn process and principles for using video for professional learning

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### Video workshop – Before viewing

Before viewing a video:

- Situate the viewing by providing context for the video
  - Grade
  - Task
  - Lesson goal(s) and goal that is being worked on in the clip
  - Description of what happened immediately before the clip
- Provide documents that will support understanding of what is happening in the video
  - Copies of student work, transcript, etc.
- Provide a few questions to focus the viewing

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### Video workshop – After viewing

After viewing a video:

- Have an open discussion of something that each group member noticed in or wondered about the video
- Spend the majority of the time carefully considering the focus questions
  - Know a place or two in the video that connect really well to the focus questions
  - Close attention to talk, student thinking, teacher's moves and comments
  - Detail and evidence
- Debrief the process
  - Set up: What was it like setting up the video? What could be improved?
  - Focus: How well was the group able to stay focused on the main questions? What might help improve the focus?
  - Connection to video: Did the group focus on specific aspects of the video (as opposed to talking more generally, taking off from something in the video)? What might support closer work on the video itself?

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### Video workshop – While viewing

- Pay close attention to talk, student thinking, teacher's moves and comments
- Jot a few notes about instances in the video that relate to the focus questions
- Take note of other thought provoking parts of the video

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### Summary

In this session, you:

- Explained and evaluated methods and solutions to a mathematics problem
- Considered teaching practices relevant to teaching students to reason and explain
- Learned the steps of a video workshop process

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