



**Connecting the Math Practices  
A Closer Look at MP3 and MP7**

**Presenter:**

ARIZONA'S COLLEGE AND CAREER READY STANDARDS  
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*"In our fast-paced, technology-driven world and competitive global workplace environment, today's students--tomorrow's workers--must be able to reason, think, and figure out how to approach and solve problems they've never specifically learned how to solve.*

*If students leave school having learned mathematical content alone, without having learned these twenty-first-century skills, we will have woefully underprepared them for their future."*

*Smarter Than We Think, Cathy Seeley*



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**Mathematical Practice 7**

**Look for and make use of  
structure**



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### Look for and make use of structure

- What pattern might you see in this problem?
- How do you know you have not miscounted?
- How do you know you have counted all the different ways in which the houses might look?
- Did you discover the Fibonacci Sequence?
- Did you use combinations to solve it? Or solve a simpler problem?



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### Why Focus on Structure?

Many people see math as confusing, not always sure how the answers are achieved. There is structure in math that is quite predictable and people who see that structure find that math makes sense.

We apply what we know about the structure of math-it's patterns and properties-as we use math each day.



-Putting the Practices in Action p. 106

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### Table Talk

Besides properties and operations, where are other opportunities to explore structure in K-5 Mathematics?



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### Mathematical Practice 3

Construct Viable Arguments and Critique the Reasoning of Others



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### Viable Arguments

- How did **justifying** your strategy to others clarify your own thinking?
- Could you critique and/or explain the strategy used by **another** group member?
- Why is this **important** for students to be able to do this in today's classroom?



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### Using structure to construct arguments

As you watch the video, think about....

What does the teacher do to support and engage students in MP 7 & MP 3?

How does the teacher keep the focus on the structure and on constructing arguments?



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### What does the teacher do to support and engage students in MP 7 & MP 3?

- She doesn't stop at just noticing the pattern
- "Could you do something or show me something that could explain it better?"
- Set the focus on the structure, not the computation



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### How does the teacher keep the focus on the structure and on constructing arguments?

- All students represent what is happening
- "See what you notice about what's similar mathematically."
- Provides time for students to articulate their mathematical arguments.
- Extends their thinking through contrast with another operation



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Any questions, concerns, or comments???



Thank you for your time and participation!



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Thank you!

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