Meaningful Mathematical Communication in the Classroom while Engaging Children with Literature

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Agenda

- Overview of “5 Practices for Orchestrating Production Mathematics Discussions”
- Story Time – “The Wishing Club: A Story About Fractions” by Donna Jo Napoli and Anna Currey
- Solving the Problem
- Sharing and Discussing
- Conclusion
- Additional Stories

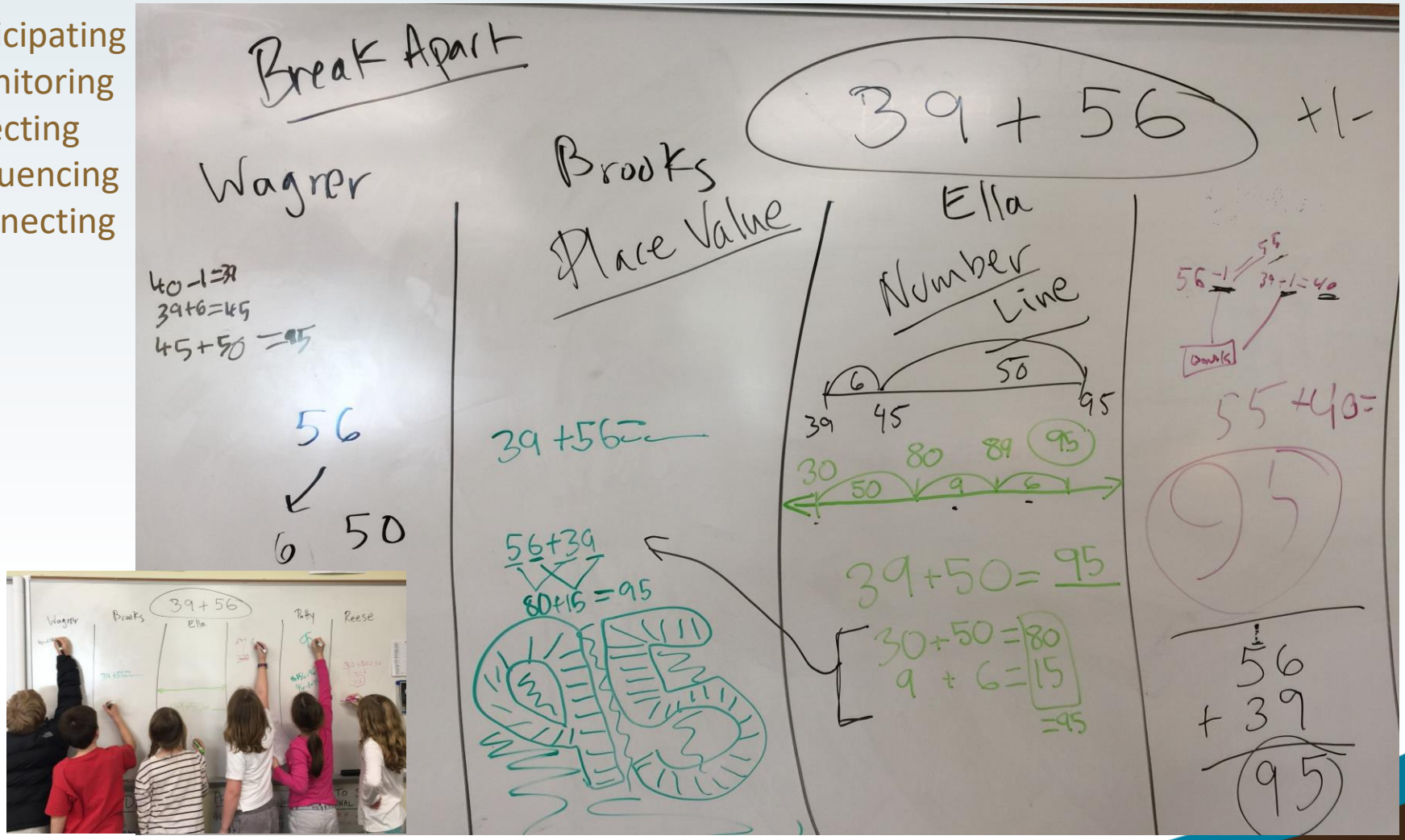
Overview of "5 Practices"

- Anticipating – determining and exploring the approaches students are likely to employ
- Monitoring – intentionally watching and listening while students grapple with the problem
- Selecting – purposefully choosing particular approaches to share with the whole group
- Sequencing – purposefully planning an order in which to share approaches selected
- Connecting – making ties between different approaches and with key mathematics in the problem

Smith, M. S., & Stein, M. K. (2018). *5 Practices for orchestrating productive mathematics discussions* (2nd ed.). Reston, VA: The National Council of Teachers of Mathematics, Inc.

Example of "5 Practices" with **39+56**

- Anticipating
- Monitoring
- Selecting
- Sequencing
- Connecting



Student work courtesy of The Hill School, Middleburg, VA.

Story Time

- *The Wishing Club: A Story About Fractions* by Donna Jo Napoli and Anna Currey

Monitoring, Selecting, & Sequencing Worksheet

Strategy	Who and What	Order
Fraction equation – solving with common denominators		
Fraction bars		
Fraction circles		
Measuring cups		
Measuring with rulers		
Graph Paper		
Other		

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Conclusion – *Wishing Club*

- Connecting – what are some of the ways we did or could connect the strategies shared? How are these connected with the key mathematical ideas from the problem?
- What ideas do you have for extending the *Wishing Club* problem?

More Story Time

- *A Remainder of One* by Elinor J. Pinczes

Anticipating

- Take 2 minutes to think of how your students might approach solving this problem
- At your table, work on the practice of "anticipating" together
- Make a list of the methods your students might use to solve the problem and water materials/supplies you could have available

Other Types of Stories

- Some stories do not contain an actual problem, but help you set up a problem – *Two of Everything* by Lily Toy Hong
  - The class wants to have a pizza party that will cost $85. A purse has $5 in it. How can they use the doubling pot to produce enough money for the party? (Scale the problem by changing the item.)

Additional Stories

- Use guidance from books about children's literature – *Numbers & Stories: Using Children's Literature to Teach Young Children Number Sense* by Rita Janes & Elizabeth Strong
- Check NCTM journals for literature ideas

Closing Thoughts

- How can you use the *5 Practices* in your classroom?
- What are some stories you already read in your classroom that could be transformed into engaging mathematics activities?

Thank you for participating today!

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Available at the NCTM Bookstore:

Smith, M. S., & Stein, M. K. (2018). *5 Practices for orchestrating productive mathematics discussions* (2nd ed.). Reston, VA: The National Council of Teachers of Mathematics, Inc.

Available from Amazon.com or other book sellers:

Napoli, D. J., & Currey, A. (2007). *The wishing club: A story about fractions.* New York: Henry Holt & Co., Inc.