

Empowering Mathematical Understanding Through Empathic Listening

Monica Kendall & Diane Reynolds

NCTM 2019



Math Solutions®

FOUNDED BY MARILYN BURNS

Session Purpose

- To engage in strategies for empathic listening.
- To consider ways in which empathic listening can support students' understanding of mathematical ideas in the classroom.

Think Pair Share

“We ask...we listen...we learn.”

~ Marilyn Burns, Founder
Math Solutions

- How does this traditionally look/sound like in a secondary mathematics classroom?

Our Challenge as Teachers

- 70 – 90 % of students' time is spent listening to others, yet...
 - They remember only 25 % of what they hear, and...
 - The average adolescent attention span is only about 8 – 12 minutes!
 - ***Empathic*** listening is needed when working with others in collaborative ways.
- ~Julian Treasure (2011)

Listening with Empathy

When we listen with empathy, we –

- Find common ground.
- Make emotional connections.
- Build trust (especially necessary for adolescents).

~Jim Knight (2015). *Better Conversations*

Telling Stories

*When we share our stories,
what it does is
opens up our hearts for
other people to
share their stories.*

*And it gives us the sense that we
are not alone in this journey.*

*~Jeanine Shepherd,
Member of the Order of Australia*

The Story Behind the Story

Telling a story –

- Connects us.
- Gives insight into each other's thinking.
- Reminds us that there is something greater than ourselves.

~Jim Knight (2010). Unmistakable Impact: A Partnership Approach for Dramatically Improving Instruction.

The Story Behind the Story

Silent Think Time: Think back to an experience that ...

- Made you passionate about learning math
OR...

- Nearly turned you off of math altogether...

...and be ready to share your story.

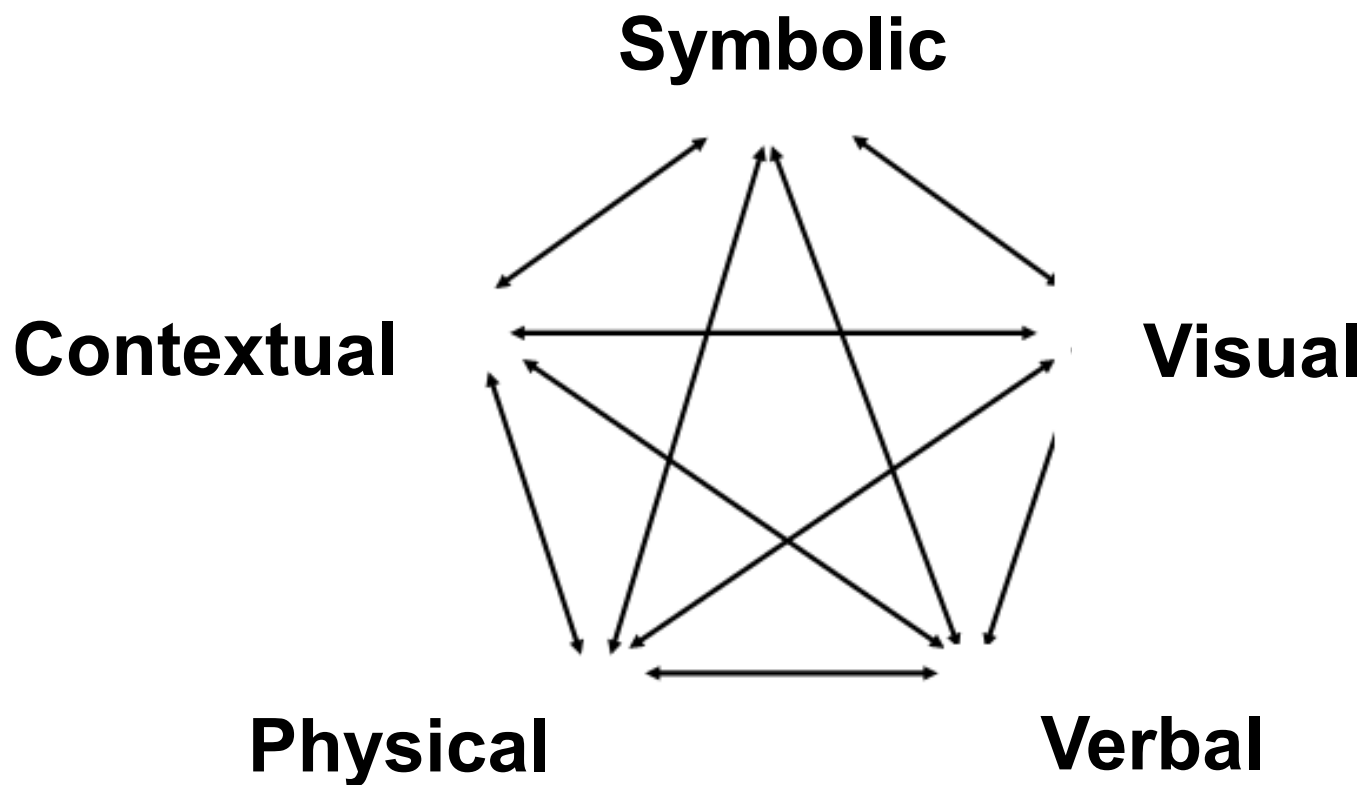
The Story Behind the Story

1. 1 minute: Partner A tells a story as Partner B listens with empathy for the “story behind the story.”
2. 30 seconds: Partner B paraphrases the story: “If I understand you correctly....”
3. Repeat, reversing roles.



The Windows Problem

Types of Representation

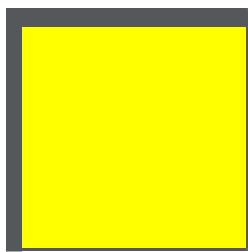


Adapted from *Beyond Constructivism: Models and Modeling Perspectives on Mathematics Problem Solving, Learning, and Teaching*, by Richard Lesh and Helen Doerr, eds.
Copyright © 2003 by Routledge. All rights reserved

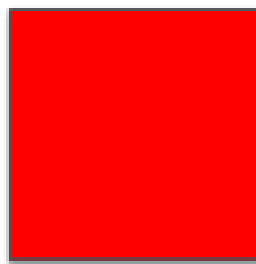
The Window Problem

The Peerless Window Company builds square windows with three kinds of panes. Each window must have 4 corner panes.

Task: With your partner, use the tiles as described below to build a 3 x 3 window.



**Corner
Pane**



**Interior
Pane**



**Edge
Pane**

Partner Discussion

- Silent Think Time: What do you notice? Wonder? Be ready to share with your partner when time is called.
- Partner B/A discussion:
 - Partner B: I noticed... and I wondered ...
 - Partner A: I heard you say ...and I would like to add on ...
 - Partner B: You said ... and one way we think alike is ...

Table Group

- 12 minutes: Complete the task on the handout.

Sentence Stems

Silent think time: What predictions can you make about

A) A window with 20 edge panes?

B) Another window with 36 center panes?

Sentence stems for Partner A/B:

- I predict ... because...
- I heard you say ... and I agree/disagree...
- When you said ... I think you were saying ... and I would like to add ...

Window Size $n \times n$	# Corner Panes	# Edge Panes	# Interior Panes	Total # Panes
2 x 2				
3 x 3				
4 x 4				
5 x 5				
6 x 6				
...				
$n \times n$				

Reflect and Share

*“When you listen,
it's amazing what you can
learn.”*

*When you act on
what you've learned,
it's amazing what you can change.”*

~ Audrey McLaughlin,
First Woman to Lead a Canadian Political Party

Thank You!

Dr. Monica H. Kendall

mkendall@mathsolutions.com

Diane Reynolds

dreynolds@mathsolutions.com

Math Solutions: www.mathsolutions.com

Houghton Mifflin Harcourt: www.hmhco.com

References

- Knight, J. (2010). *Unmistakable Impact: A Partnership Approach for Dramatically Improving Instruction*. Corwin: Thousand Oaks, CA.
- Knight, J. (2015). *Better Conversations: Coaching Ourselves to Be More Credible, Caring, and Connected*. Corwin: Thousand Oaks, CA.
- Treasure, J. (July 2011). *5 Ways to Listen Better*. TED presentation.