Empowering Mathematical Understanding Through Empathic Listening

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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 _____ % 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
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.

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 …
<table>
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<th>Window Size n x n</th>
<th># Corner Panes</th>
<th># Edge Panes</th>
<th># Interior Panes</th>
<th>Total # Panes</th>
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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!

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References

