

# LET'S ORCHESTRATE A CONVERSATION ABOUT MATH

## Explore

5 Practices for Orchestrating Productive Mathematical Discussions: Anticipate, Monitor, Select, Sequence, Connect



Better Lesson believes that teachers need to be equipped with strategies and routines to promote mathematical discourse in the classroom in order to support students to share ideas, clarify understandings, and learn to see things from other perspectives.

### TEACHER GOAL:

to facilitate mathematical discourse that helps students learn with and from each other.

### Blog Support:

Bankston, Krystal. Let's Talk About Math: 5 Tips For Facilitating Productive Student Discourse in Math Classrooms. November 13, 2018



# ANTICIPATE

## Teacher:

Ask Questions about the lesson before starting. Ask yourself what misconceptions might come up. Try the lesson and ask yourself where students might struggle. Ask yourself where in the lesson you might get students talking to one another.



## Strategy: Turn and Talk

Students turn and talk to a partner about a posed topic, problem, or question. They have a chance to explore and explain their own thinking



Turn and Talk  
Strategy

## Example:

In a lesson on addition of 3 numbers, you might have students turn and talk about the order they will use for the adding the numbers. Ask yourself if students will use their knowledge of 10s to rearrange the numbers.

# MONITOR

## Teacher:

Make Notes - circulate while students are working on a problem. Make notes of common mistakes. Decide which student work you might want to highlight to address common misunderstandings and good solution strategies.

## Strategy: Number Talks

Number talk is a relatively quick discussion activity that helps your students strengthen their number sense and computation skills. First, your students solve a problem mentally, using their mathematical knowledge and fluency skills. Then, they share their individual solutions to the problem, expressing and critiquing various approaches they used to solve the problem.

## Strategy: Discussion Supports

Plan and support student discussions about mathematical ideas, representations, content, and strategies

## Example:

Assign a subtraction word problem. Circulate around the room while students are working and note common misconceptions. Now provide an opportunity for students to share their responses. Note key terms, such as subtract, count back, and count up to support student conversation. Highlight problems that might help to clarify common mistakes.



Number Talks  
Strategy



Discussion  
Supports  
Strategy

# SELECT AND SEQUENCE

**Student:** Share work with the class

**Teacher:**

Decide what order to have students share out. Choose which work to highlight that will help students to better grasp the concept.

**Strategy:** Which One Doesn't Belong

To help students get started with sharing their thoughts mathematically, try a Which One Doesn't Belong. All 4 squares can have a reason for not belonging so students can all be successful talking about math.

**Strategy:** Notice and Wonder

Another good starter is Notice and Wonder. Try putting 2 student examples up and let students notice any differences or similarities



Which One Strategy



Notice and Wonder Strategy

**Example:**

In the box above students might note that  $3 + 9$  doesn't belong because it does not equal 10.  $5 + 5$  doesn't belong because it is a double.  $9 + 1$  doesn't belong because the lower number is first.  $2 + 8$  doesn't belong because both numbers are even.

$5+5$	$2+8$
$9+1$	$3+9$

# CONNECT

## Teacher:

Synthesize This is the synthesis step where you have orchestrated all of this planning into arriving at the intended learning. Teacher or Student may make the connections between the work that has been shared and the conversations around the math that they have engaged in.



## Strategy: Compare and Connect

This strategy encourages students to discuss, reflect on, and understand their peers' various approaches to problem solving and identify commonalities and differences between various problem solving approaches



Compare  
and Connect  
Strategy



Stronger and  
Clearer Each  
Time Strategy



Math Discourse  
Choice Board  
Strategy

## Strategy: Stronger and Clearer Each Time

Students complete the problem independently, share their work with one partner, revise their thinking, share with a second partner, and then revise their work.

## Example:

Students have shared several solutions for the double digit addition problem. Help students to notice the different ways that classmates approached the problem. Talk about why it is ok to have different ways to arrive at a solution.

# Template For Orchestrating Math Discourse

