i-Ready Classroom

## Teacher Moves and Routines That Promote Math Discourse:

What to Do When Students Have That "Deer-in-the-Headlights" Look


## Get Your Students to Do the Talking in Math Class

Math class sure looks different now! Whether you're teaching remotely, in person, or in a hybrid model, getting your students engaged can be a challenge.

Has this ever happened to you? You've just asked your class a question about a problem in the book, and you hear back . . . crickets. Several students look down to avoid making eye contact, several turn off their webcam, and several give you the "deer-in-the-headlights" look. What can you do to support students without just giving them the answer? Move your lesson forward with one of these tried-and-true teacher moves or routines.

## What Are Teacher Moves and Routines?

Strategic teachers are constantly adjusting instruction to meet the needs of their classroom. The term "teacher moves" in this eBook refers to the different ways to:

Probe and strengthen students' reasoning
Keep their ideas moving forward
Keep students listening and talking with one another

Think of these moves and routines as a toolkit of strategies you can use to engage students in thinking and talking mathematically.

On any given day in any given classroom, a strategic teacher employs a variety of teacher moveswhether with the whole class, a small group, or just one student.

We will cover eight effective teacher moves and routines here, though the list of teacher moves is endless.

## Tips before Learning New Teacher Moves and Routines

- Choose one teacher move or routine and get comfortable with it before taking on another one.
- Plan on enacting the teacher move that you pick at least four or five times over a relatively brief time frame. Some may be used multiple times in a day and others may only occur a few times in a week.
- Once teacher moves and routines have been established, implementing additional ones will be easier.


## Quick Start Guide

- Choose a teacher move or routine.
- Decide on a lesson to practice the teacher move or routine.
- Decide when within the lesson you will use the teacher move or routine. Work through any problems beforehand and anticipate student thinking and responses to questions.

i-Ready Classroom Mathematics is a comprehensive K-8 core mathematics program that uses these teacher moves and routines to promote mathematical discourse and deepen student understanding.
Visit ReadyClassroomMathematics.com/LearnMore

Teacher Moves


## Routines

Say It Another Way

Three Reads

Co-craft Questions and Problems

Compare and Connect

Collect and Display

## Teacher Move:

## Individual Think Time

What? Time for students to think or work privately before discussing with a partner, a small group, or the whole class

Why? To allow students to make sense of the question or problem, begin to gather their thoughts and questions, and significantly increase both the quantity and quality of student talk and engagement in their thinking

## How?

- Explicitly prompt Individual Think Time: Say to students that you will give them a specified amount of time to think quietly about a question or problem.
- Time Individual Think Time purposefully: You may want to use a timer to ensure you provide enough time for students to reflect on your prompt.


## When?

- When the teacher places another student's work under a document camera
- When the teacher poses a question to the whole class
- Before students work with partners to discuss a problem



## Teacher Move:

## Turn and Talk

What? An opportunity for students to work out mathematical ideas and language together
Why? Allows every student an opportunity to speak and develop language and thinking. It also allows the teacher to listen in on many conversations and informally assess students' understanding.

How? Provide students with a purpose, prompt, and product. Follow these steps to make it happen:

1. (8)

Pose (and possibly record or project) a clear question or prompt.
2.


Provide a sentence frame or starter to prompt partner talk.
3.


Provide a time estimate (that you may adjust as you listen to students).
4. (1) (1)

Listen to students as they discuss, select, and sequence responses.
5.Reconvene the class and remind them of the prompt.
6. $\mathrm{N}_{\mathrm{m}} \mathrm{m} / \mathrm{m}$

Purposefully call on students to share their thinking and transition back to a full group discussion.

## When?

- When teachers want students to process an idea and language before a full group conversation
- When no student offers to share an idea during whole class discussion
- When teachers need more time to make instructional decisions in the moment
- When every student is eager to share an idea


## How to do this in a remote or hybrid setting:

- Have student turn and talk to a parent, sibling, or a stuffed animal
- Use breakout rooms in Zoom ${ }^{\text {™ }}$
- Use Jamboard ${ }^{\circledR}$ for remote student collaboration
- Send sentence stems home to support students and families

[^0] Video Communications, Inc. Jamboard ${ }^{\circledR}$ is a distinctive brand feature of Google, Inc

## What? Repeat, Rephrase, Reword, Record

Why? To help students process and refine mathematical ideas and language while engaging all students in thinking and talking mathematically

## How?

- Prompt students to Repeat, Rephrase, or Reword with statements like:

- Can you say what you just said using the new math words we just learned?
- Ask several students to either repeat, rephrase, or reword key ideas to engage multiple students in the conversation.
- Record important language and ideas on the board so students have a visual of the ideas, words, or images being discussed.


## When?

- Repeat: Ask a student to repeat what was just said if not everyone was able to hear the response.
- Rephrase: Ask a student to say what was just said in a different way if the idea is a key part of the lesson, you want to check to see if students understand what was said, or if you as a teacher are unsure of what a student said.
- Reword: Ask a student to use more precise language to describe an idea if there is a more sophisticated way to precisely express the idea.
- Record: Write down important ideas, words, or images that are being shared if students would benefit from seeing the information recorded.

What? A "talk move" used to help students make sense of unfamiliar written or spoken language. This talk move is similar to Rephrase and Reword from the 4 Rs teacher move because we are asking students to restate what was just said during a class discussion.

Why? When Say It Another Way is an established classroom routine, students know they are expected to listen actively and reflect on their classmates' deliberations, as they are expected to regularly restate their classmates' discussion points. The routine also serves to help students gain a clearer understanding of potentially misperceived concepts as students clarify peer language and contribute to mathematical discourse.

How? As students share their ideas in whole class or small group discussions, the teacher regularly asks for other students to "say it another way." Students must use their own words to reproduce and/or clarify the idea. The teacher asks the original speaker to decide whether the restatement is accurate or to work collaboratively to come up with an accurate restatement.

When? Use Say It Another Way if the language being used is complex or ambiguous, or the notion presented during the discussion is incomplete.


What? A routine that guides students though negotiating the language in mathematical problems. A problem is read three times, each with a specific focus, to ensure that students fully understand what is being asked of them.

Why? The opportunity to read a problem more than once gives students the time to reason through language, clarify vocabulary, and interpret information presented in a problem before undertaking the mathematics.

How? With each read, the teacher records student responses.

- Read 1: The focus is on comprehending the text. The teacher reads the problem aloud while the students consider the focus question, "What is this problem about?" and prepare to respond to it.
- Read 2: The focus is on discerning what question is being asked. A student reads the problem aloud while the others listen and think, "What are we trying to find out?" Students focus on connecting the language to the mathematics as they describe what the problem is asking.
- Read 3: The focus is on analyzing the important information given in the problem. The problem is read aloud chorally by the entire class or in pairs where one partner reads to another. This time students listen and think, "What are the important quantities and relationships in the problem?"

When? When introducing a problem or example to the class, use Three Reads to help students make sense of the problem.

What? This routine provides an alternative to the Three Reads routine. It provides the opportunity for students to think about the mathematical implications of a context before solving it by removing the question or asking students to create a question from the information presented. Additionally, it gives students the chance to explore mathematical relationships within that context, helping them to better understand the problem and take the time to analyze the quantities and relationships before jumping to solve the problem without thinking.

Why? When given the time and space to "mathematize" a situation, students extend their understanding of the context and potentially uncover implicit relationships among quantities. This, in turn, encourages students to generate their own questions, which results in a more complete grasp of the context. It also offers multiple points of entry into the problem for students.

How? The teacher presents a problem situation with no specific question offered or provides a mathematical representation with no context. Students work independently or in small groups to develop questions or problems that could be answered or represented by the information, with a focus on connecting the language to the mathematics.

When? When introducing a problem or example to the class, use Co-crafted Questions and Problems to help students make sense of the problem.

What? A routine to identify, compare, and contrast mathematical language, representations, models, and approaches

Why? This routine allows students to compare and make connections between strategies and concepts and reflect on mathematical ideas. In doing so, students increase their meta-awareness and solidify their understanding, resulting in improved mathematical discourse.

How? The teacher carefully selects and sequences student strategies and representations. Students have time to process and discuss similarities and differences in pairs, small groups, and in whole class discussions. The teacher asks specific questions to help students recognize connections between the strategies and formulate important generalizations.

When? After students have attempted a problem on their own and have had a chance to discuss with a partner, use Compare and Connect for a whole class discussion. This allows students to see multiple approaches to the problem and deepen their understanding of the mathematics.


## 폽 <br> Routine: <br> Collect and Display

What? A routine that enables teachers to collect and organize students' oral language in order to increase sense making and support academic language development

Why? When teachers record student language and facilitate connection-making, students develop precise academic vocabulary. The display that is created becomes a reference for students to turn to when they talk or write about mathematics in the future.

How? The teacher collects students' informal oral language during partner, small group, and whole class discussions. They organize the words and key phrases, add diagrams or pictures where necessary, and help students explicitly connect those words and pictures to academic language. The teacher displays collected outputs for future reference, and updates and revises them as needed.

When? Use this routine during whole class discussion time when students are making connections between their preconceptions and the new material being learned in the lesson.


## Summary

These strategies will engage all students in owning their learning, processing mathematical concepts and problems, and participating in partner and whole class discussions. Add these to your toolkit of teacher moves and routines to help your students become more independent thinkers and retain more of what they learn.


Are you looking for a comprehensive K-8 core mathematics program that seamlessly incorporates teacher moves and routines like these into its instructional design?
Check out ReadyClassroomMathematics.com/LearnMore


[^0]:    Zoom ${ }^{\text {TM }}$ is a trademark of Zoom

