

Instructional Routines to Nurture Opportunities for All Students



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Learning Goals

- Develop a deeper understanding of various math instructional routines and their application in the classroom.
- Have additional resources to create a supportive and inclusive classroom environment that fosters opportunities for all students to shine in math.
- Experience how to nurture opportunities for all students to build a positive math identity.



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How We'll Learn Together

Collaborate

- Independent think time
- Pair shares
- Whole group discussion

Experience

We will experience instructional routines together with both a learner and an educator lens.

Reflect on:

- Instructional practices
- Our own experiences
- Application for ALL learners



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IM Vision Statement

“A world where all learners know, use and enjoy mathematics.”

- Illustrative Math



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Introduction: Engaging ALL Math Students

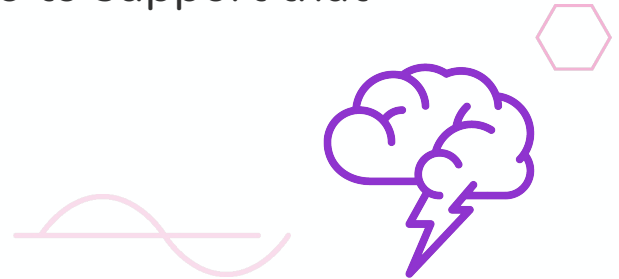


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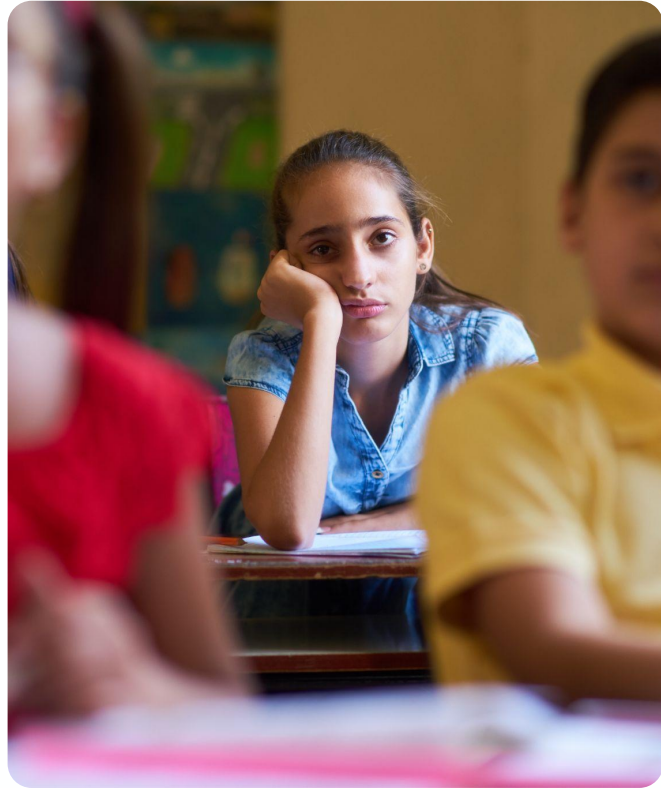
Journal Prompt:

Think about a time when a student (or perhaps yourself as a student) were enjoying math. What did they enjoy? Why? What did you do to help facilitate that moment?

Now let's think of the other side of the coin. Think of a time a student didn't enjoy math. Why didn't they enjoy it? What did you do to support that student?



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Have you experienced
this?



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Math Identity

“We define mathematical identity as the dispositions and deeply held beliefs that students develop about their ability to participate and perform effectively in mathematical contexts and to use mathematics in powerful ways across their lives.

Depending on the context, a mathematics identity may reflect a sense of oneself as a competent performer who is able to do mathematics or as the kind of person who is unable to do mathematics.”

Aguirre, J., Mayfield-Ingram, K., & Martin, D. B. (2013).

Share out a word or phrase that resonates with you.



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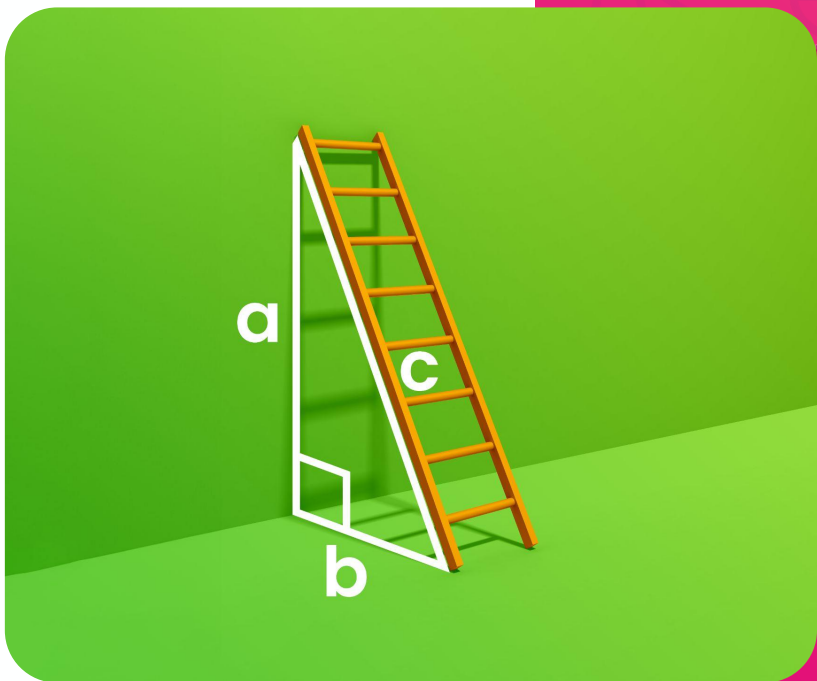
The Role of Educators

What is the educator's role in our students building strong math identities? (Turn and Talk)

- Importance of inclusive and supportive learning environments
- Emphasize understanding and problem-solving
- Celebrate diverse mathematical thinking



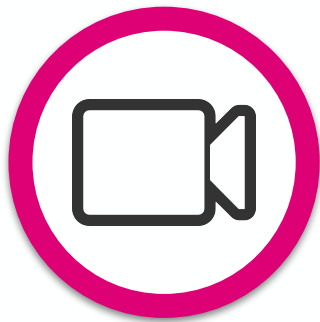
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The Power of Instructional Routines

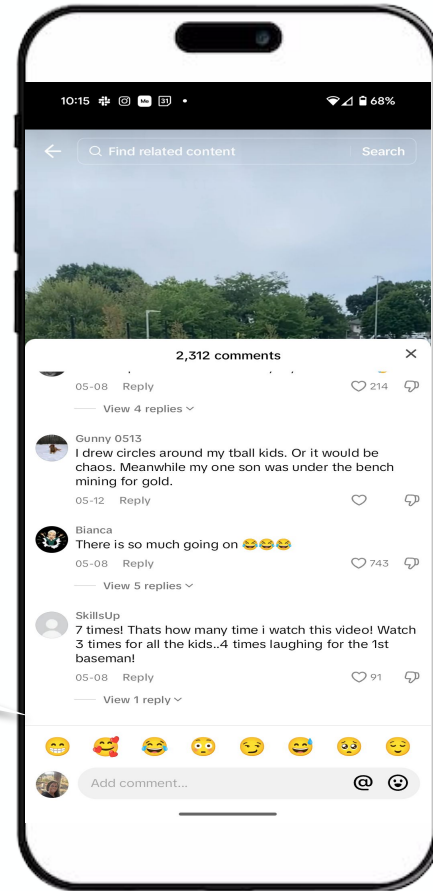
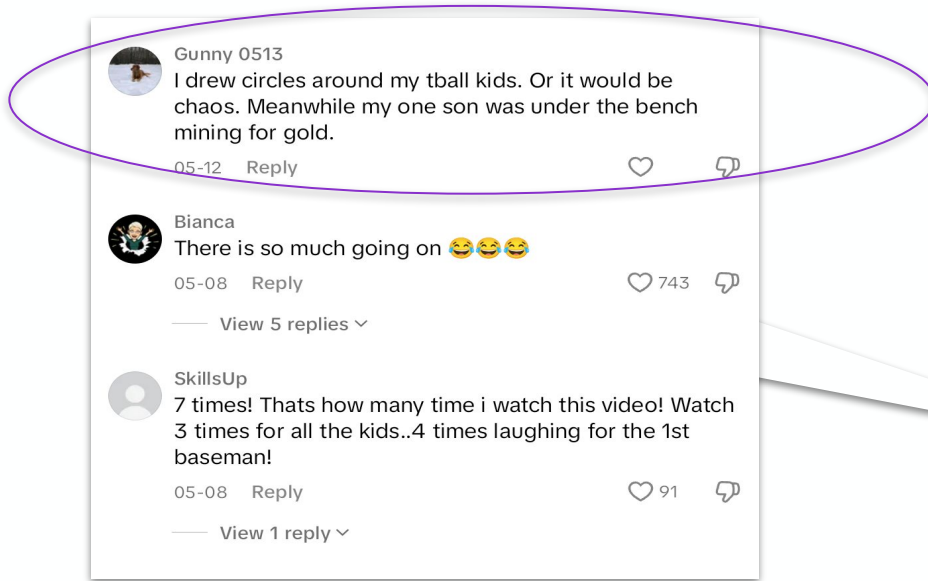


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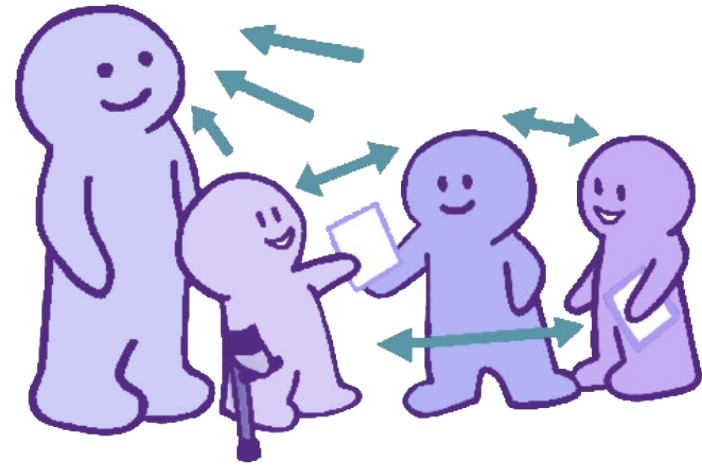
To the comments...



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Instructional Routines...what are they???

Instructional routines are specific and repeatable designs for learning that support both the teacher and students in the classroom... enabling all students to engage more fully in learning opportunities while building crucial mathematical thinking habits. (Kelemanik, Lucenta, & Creighton, 2016).



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Why are they important



Promote Deep Learning



Enhance Student Confidence



Encourage Reflective Practices



Build Foundation for Lifelong Learning




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IM Instructional Routines



Warm Up Routines

- Which Three Go Together 
- Math Talk
- Notice and Wonder
- True or False

Math Language Routines

- MLR1: Stronger and Clearer
- MLR2: Collect and Display
- MLR3: Critique, Correct, Clarify
- MLR4: Information Gap
- MLR5: Co-Craft Questions
- MLR6: Three Reads
- MLR7: Compare and Connect
- MLR8: Discussion Supports



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Warm Up Routine

Which Three Go Together?



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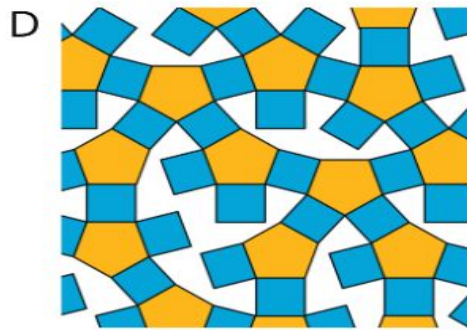
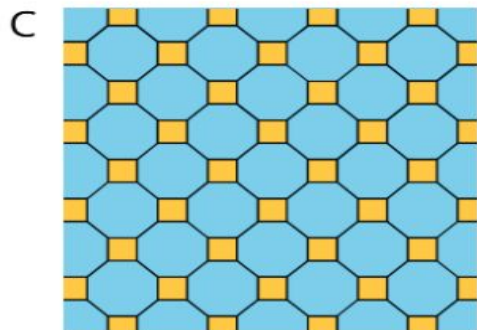
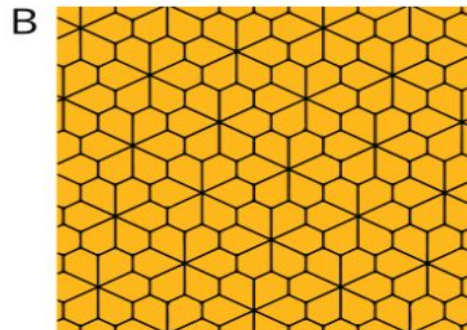
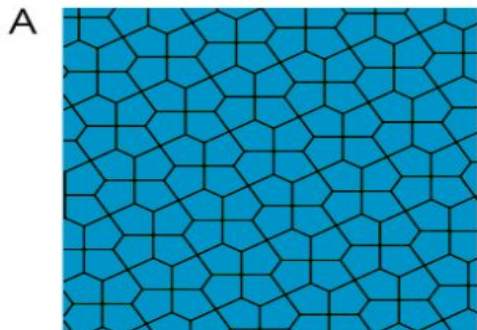
Inviting Students into the learning with Warm Up Routines

- **Purpose**
 - Prepare students for the day's lesson
 - Opportunity to strengthen number sense or fluency
- **Four Warm Up Routines**
 - Which Three Go Together
 - Math Talk
 - Notice and Wonder
 - True or False
- **Timing: 10 minutes**



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Which three go together? Why do they go together?

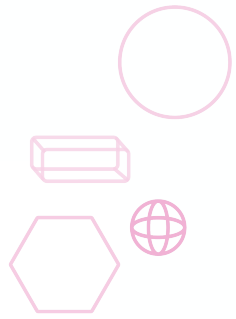


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Best Practices (Think - Pair - Share)

What are some best practices you observed as you participated in the WTGT Instructional Routine?

What are the implications for teaching and learning when using this instructional routine? Take 2 minutes of quiet think time and write your response on a sticky note.



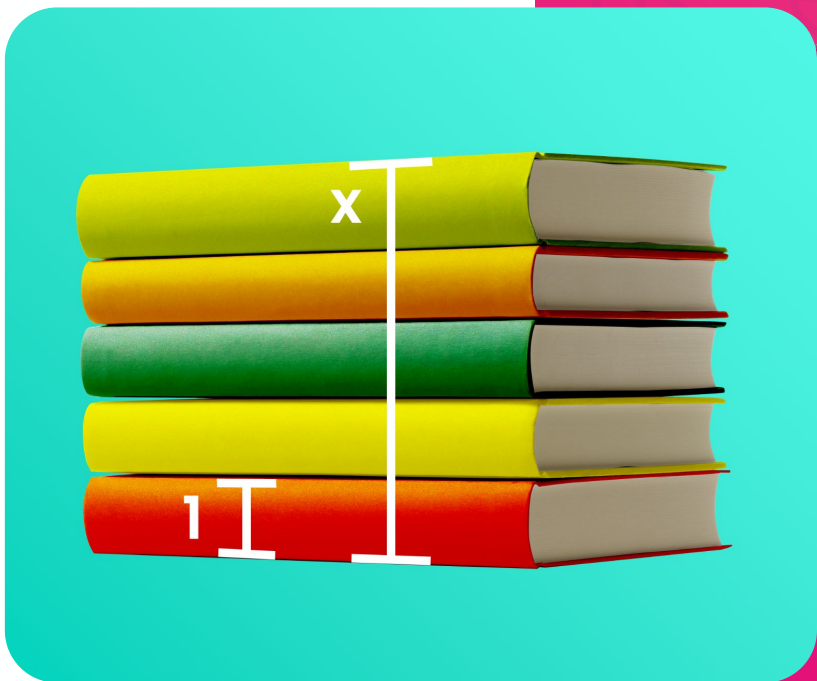
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Routine Purpose

The *Which Three Go Together?* routine fosters a need for students to identify defining attributes and use language precisely in order to compare and contrast a carefully chosen group of geometric figures, images, or other mathematical representations (MP6).



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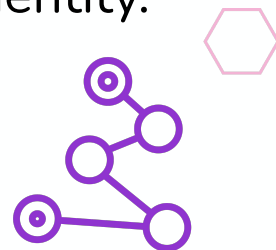
Math Language Routines



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Deepening Language and Learning

- MLRs provide structured yet adaptable formats for amplifying, assessing, and developing students' language.
- Math classrooms are language-rich environments.
- This is a lift for all students, especially those students who are multilingual learners, students with disabilities, or students who haven't yet had the opportunities to build a strong math identity.
 - Reference: IM Course Guide on MLRs.



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How do MLRs deepen language learning?

Design Principles

Principle 1: Support sense-making

Principle 2: Optimize Output

Principle 3: Cultivate Conversation

Principle 4: Maximize linguistic and cognitive meta-awareness



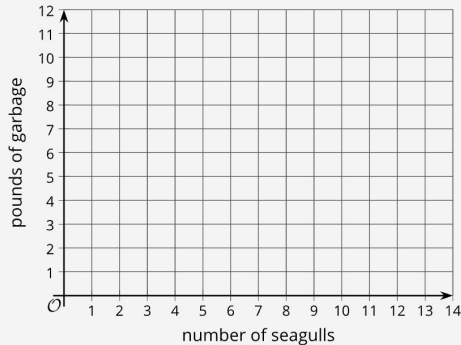
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Student Task Statement

4 seagulls ate 10 pounds of garbage. Assume this information describes a proportional relationship.

1. Plot a point that shows the number of seagulls and the amount of garbage they ate.
2. Use a straightedge to draw a line through this point and $(0, 0)$.
3. Plot the point $(1, k)$ on the line. What is the value of k ? What does the value of k tell you about this context?



Seagulls Eat What?

- Grade 7 Unit 2 Lesson 11,
*Interpreting Graphs of
Proportional Relationships*



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MLR 1: Stronger and Clearer Each Time

First Draft

What is the value of k ?

What does the value of k tell you about this context?

From the Student Activity

Meet with a partner (2 cycles)

Take turns at playing the roles of the speaker, who shares their ideas, and the listener, who asks clarifying questions and gives feedback.

2–3 minutes

* Be sure to jot down words or phrases that you think you could make your draft **stronger and clearer**.

Final Draft

Write a final draft that is **stronger** (showing evidence of incorporating or addressing new ideas, examples, and reasoning) **and clearer** (showing evidence of greater precision, organization, and refinement of language).

2–3 minutes



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Best Practices (Think - Pair - Share)

What are some best practices you observed as you participated in MLR 1 Stronger and Clearer Each Time?

What are the implications for teaching and learning when using this Math Language Routine? Take 2 minutes of quiet think time and write your response on a sticky note.



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Call To Action



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Recap

- ...develop a deeper understanding of various math instructional routines and their application in the classroom.
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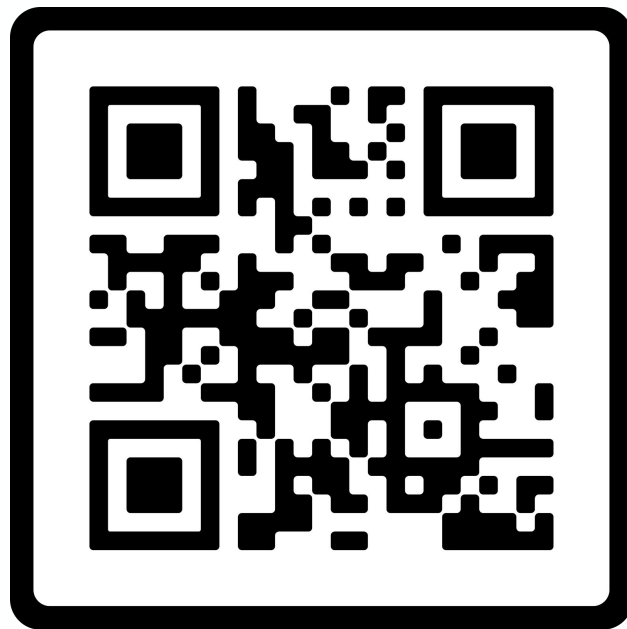
Apply to Your Practice

Try out one of these routines in your next lesson!

Start small—integrate a warm-up routine like Which Three Go Together? or use the Stronger and Clearer Each Time MLR to enhance student discussions.

Choose a routine, implement it, and watch your students shine in ways you haven't seen before.

Check out the [instructional routines](#) on accessim.org



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“Transforming these identities took time, focus, trust, and intentionality. By leaning into warm-up instructional routines and creating space for collaboration, students built on their own thinking by borrowing their peers’ strategies, words, and ideas.”

- Tori Cole



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Thank You



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