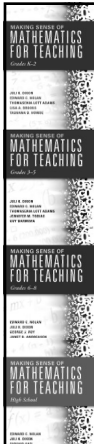


Amplifying Students' Mathematical Brilliance: Infusing Literacy in Problem Solving Through Algebraic Reasoning

High School

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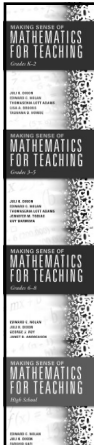
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Session Goals

- Continue developing a shared understanding of what literacy means in the context of mathematics learning.
- Practice infusing literacy strategies while engaging students in algebraic reasoning.
- Reflect on (re)designing tasks to promote and support learners' opportunities to access and engage in mathematics discourse.

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What is a Variable?

1. $y = 4x - 6$
2. $a(b + c) = ab + ac$
3. $A = \pi r^2$
4. $y = mx + b$
5. $3f = 1y$
6. $e = mc^2$
7. $12 + n = 15$

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Consider...

How can we help students to translate word problems and situations into algebraic expressions with variables?

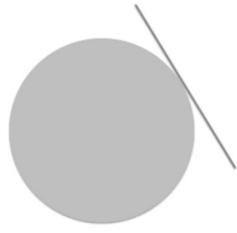
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Three Reads: Chocolate Bars



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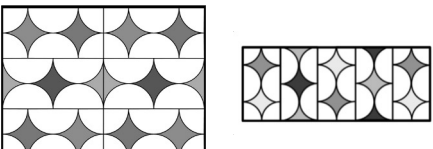
Three Reads: Circles



Citation: National Council of Teachers of Mathematics (2019).
May Calendar. *Mathematics Teacher*, 112(7), 520-525.


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Three Reads: Stain Glass



Citation: Illustrative Mathematics, Lesson 11: Stained-Glass Windows.
<https://curriculum.illustrativemathematics.org/MS/teachers/2/3/11/creation.html>
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Plan & Reflect with the TQE Process in Mind




Tasks

- Identify the learning goals.
- Select tasks to support the learning goals.
- Select tasks that will help uncover students' misconceptions.
- Show variation of cognitive demand among tasks.

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Plan & Reflect with the TQE Process in Mind



Questions

- Identify mathematical practices addressed within each topic.
- Anticipate students' misconceptions. Prepare potential questions to be posed during instruction and anticipate students' responses.

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Plan & Reflect with the TQE Process in Mind



Evidence

- List potential evidence (e.g., written work, demonstration, oral responses) of student learning.
- Consider how to adjust instruction for students who do or do not understand.

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Literacy & Mathematics

How can we infuse literacy in mathematics teaching and learning?

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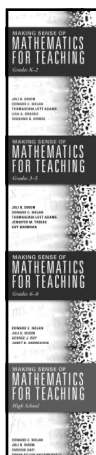
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Anchor Standards for Literacy

Reading	Writing	Speaking & Listening
<ul style="list-style-type: none"> Key Ideas and Details Craft and Structure Integration of Knowledge and Ideas Range of Reading and Level of Text Complexity 	<ul style="list-style-type: none"> Text Types and Purposes Production and Distribution of Writing Research to Build and Present Knowledge Range of Writing 	<ul style="list-style-type: none"> Comprehension and Collaboration Presentation of Knowledge and Ideas

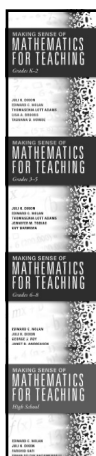
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You Try!

1. Look through your curriculum materials find a problem/task that would be good to try out a three reads protocol.
2. Engage in teaching rehearsals in your small groups.
3. Create student-centered reflection questions. Consider developing and/or using sentence stems/frames.

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Revisit Session Goals

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