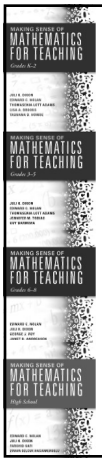

Amplifying Students' Mathematical Brilliance: Infusing Literacy in Problem Solving Through Spatial Reasoning

High School

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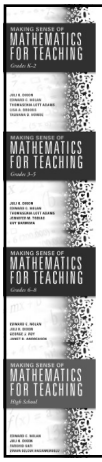
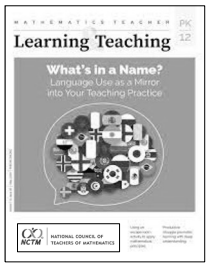


Session Goals

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

Smiles Task



Smiles: A Strengths-Based On-Ramp Mathematics Task

Use this activity to support students in working together, recognizing one another's contributions, and leveraging their mathematical strengths to solve challenging problems.

Dorothy Y. White

White, D. Y. (2022). Smiles: A strength-based on-ramp mathematics task. *Mathematics Teacher: Learning and Teaching PK-12, 115*(1), 49-55.

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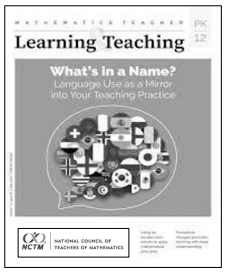
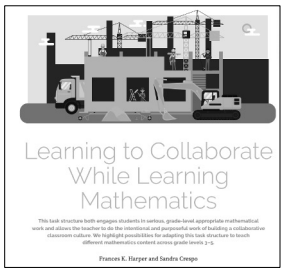
Master Designer Task





Harper, F. K., & Crespo, S. (2020). Learning to collaborate while learning mathematics. *Mathematics Teacher: Learning and Teaching PK-12, 113*(10), 800-811.

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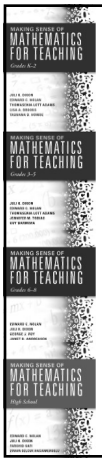
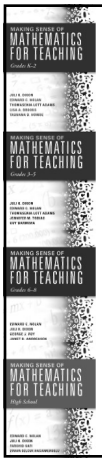


Plan & Reflect with the TQE Process in Mind

Tasks

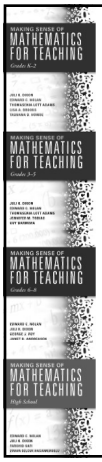
- Identify the learning goals.
- Select tasks to support the learning goals.
- Select tasks that will help uncover students' misconceptions.
- Show variation of cognitive demand among tasks.



Plan & Reflect with the TQE Process in Mind

Questions

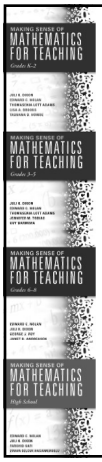
- Identify mathematical practices addressed within each topic.
- Anticipate students' misconceptions. Prepare potential questions to be posed during instruction and anticipate students' responses.



Plan & Reflect with the TQE Process in Mind

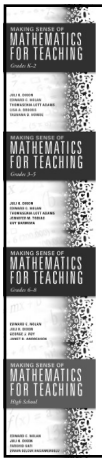
Evidence

- 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.



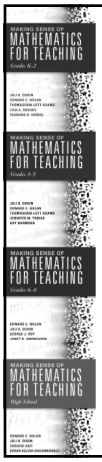
Literacy & Mathematics

How can we infuse literacy in mathematics teaching and learning?

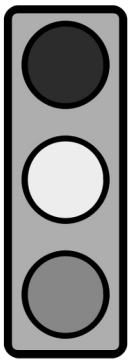


Anchor Standards for Literacy

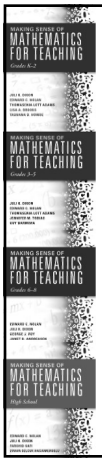
Reading	Writing	Speaking & Listening
• Key Ideas and Details • Craft and Structure • Integration of Knowledge and Ideas • Range of Reading and Level of Text Complexity	• Text Types and Purposes • Production and Distribution of Writing • Research to Build and Present Knowledge • Range of Writing	• Comprehension and Collaboration • Presentation of Knowledge and Ideas



Traffic Light Reflections



- Stop
- (Re)design
- Continue



Revisit 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 visual and spatial reasoning.
- Reflect on (re)designing tasks to promote and support learners' opportunities to access and engage in mathematics discourse.