

MDE Math Sense-Making Series: Culture & the MCA

With the addition of the mathematical practices (MP) in the future 2022 math standards MDE started a webinar series around sense-making (MP1) that educators may find helpful. We have put a [google document](#) together as well as a [folder of resources](#). But, for fun...

Why did you open this article?

- [I want to know about sense-making culture.](#)
- [I am thinking about the MCA.](#)
- [I want to know more about MP1 \(sense making\) in general.](#)
- [I want to contact the MDE math team!](#)

If you selected “a”: [Creating a Culture of Sense-Making](#)

You might be wondering what actions mathematics educators can take to create a culture of sense-making. In this webinar, MDE starts the discussion and investigation of student sense-making as it relates to standards, instruction and assessment in math classrooms around Minnesota. Go through this [ready-made PLC activity on Mathematical Sense Making](#) with other math teachers.



MDE Sense-Making Part 1
Creating a Culture of Sense-...

Major take away: *A culture of sense making in the classroom is not only possible, it is necessary.*

If you selected “b”: [Sense making in Assessments](#)

You might be wondering what student success on the MCA look like through the lens of mathematical sense-making. How can we ensure students are ready to show their year-long learning of the academic standards?



MDE Sense-Making Part 2
Sense Making in Assessment

The MDE math team will share 3 specific ways that Minnesota math educators can use the MCA grade 3-HS [Minnesota Questions Tool](#) items that center students as reasoners of mathematics will be modeled and discussed. Exemplars will be shared that can be adapted to any grade level or other standardized assessments. Preparing for the Math assessment does not need to last weeks and weeks and involve packets of problems. It is possible to be efficient and still support their efforts on the MCA when we center students as mathematical reasoners.

Major take away: *It isn't about doing a lot of practice problems but doing just a few tasks really well.*

If you selected “c”: [I want to know more about MP1 \(sense making\)](#)

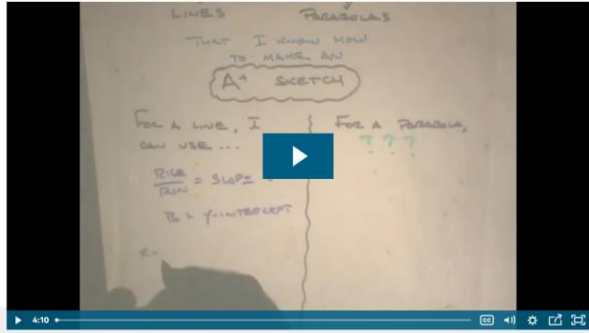
In addition to the [Sense Making video series](#) referenced in “a” and “b” please consider the following resources:

[The Dana Center](#) has a short explanation of MP1 and then ~30 video clips with examples. There is at least one video for every grade (1-12th).



Lesson
Standard 1: Make Sense of Problems & Persevere in Solving Them
Standard 1: Making Sense and Perseverance Graphing Quadratics Part 1

Clip 29/29: Standard 1: Making Sense and Perseverance Graphing Quadratics Part 1



Engaging the SMPs: Look-fors & Question stems

Standard for Mathematical Practice 1: Make sense of problems and persevere in solving them.		
Possible Student Actions: Students are...	Possible Teacher Actions: Teachers are...	Possible Questions to Promote: Teachers ask...
<ul style="list-style-type: none"> <input type="checkbox"/> Working and reading rich problems carefully. <input type="checkbox"/> Analyzing information (givens, constraints, relationships, goals). <input type="checkbox"/> Drawing pictures, diagrams, tables, or using objects to make sense of the problem. <input type="checkbox"/> Discussing the meaning of the problem with classmates. <input type="checkbox"/> Making choices about which solution path to take. <input type="checkbox"/> Trying out potential solution paths and making changes as needed. <input type="checkbox"/> Checking answers and making sure solutions are reasonable and make sense. <input type="checkbox"/> Exploring other ways to solve problems. <input type="checkbox"/> Persisting in efforts to solve challenging problems, even after reaching a point of frustration. <input type="checkbox"/> Relating current situations to concepts or skills previously learned and connect mathematical ideas to one another. <p>Comments:</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Providing rich problems aligned to the standards. <input type="checkbox"/> Providing appropriate time for students to engage in the productive struggle of problem solving. <input type="checkbox"/> Providing opportunities for students to solve problems that have multiple solutions. <p>Comments:</p>	<ul style="list-style-type: none"> <input type="checkbox"/> What information do you have? <input type="checkbox"/> What do you need to find out? <input type="checkbox"/> What do you think the answer might be? <input type="checkbox"/> Can you draw a picture? <input type="checkbox"/> How could you make this problem easier to solve? <input type="checkbox"/> Have you compared your work with anyone else? <input type="checkbox"/> How is ___'s way of solving the problem like/different from yours? <input type="checkbox"/> Does your plan make sense? Why or why not? <input type="checkbox"/> What tools/manipulatives might help you? <input type="checkbox"/> What are you having trouble with? <input type="checkbox"/> How can you check this? <input type="checkbox"/> What do you think about what ___ said? Do you agree? Why or why not? <input type="checkbox"/> How might you use one of your previous problems to help you begin? <input type="checkbox"/> What are some other problem that are similar to this one? <p>Comments:</p>

**This document is an adaptation based on resources from Mathleadership.com, work from Math Specialists.org, work from the Georgia Department of Education (accessed [here](#)) and work from the National Council of Teachers of Mathematics (NCTM) Principles to Action Toolkit (accessed [here](#)).

[Engaging the MP1s: Look-fors & Question stems](#)

These lists of example ideas are an adaptation based on resources from Mathleadership.com, work from Math Specialists.org, work from the Georgia Department of Education and work from the National Council of Teachers of Mathematics (NCTM) Principles to Action Toolkit.

Achieve the Core – Sense Making

Check out [this article](#) about implementing sense making at various grade levels K-12. They reference information that starts on page 4 of the [Common Core State Standards for Mathematics](#). This article is one in a [multipart series](#) about the mathematical practices.

PART 2
SMP 1: Make Sense of Problems & Persevere in Solving Them
Well-designed materials help students tackle challenging math problems

Major take away: *There is quite a bit of information out there and just 3-5 minutes at a time will get you there sooner or later.*

If you selected “d”: I want to contact the MDE math team!

We welcome all questions, so please contact us if any arise. Thank you!

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