MONTANA
Office of Public Instruction
ELSIE ARNTZEN
State Superintendent

Montana OPI Math Standards Revision Task Force Virtual Meeting August 3, 2023

Present Math Task Force members:

Tom Redmon (Subcommitte report)
Amy Jones
Becky Berg
Beth Burroughs (Subcommitte report)
Javob Williams
Jenny Combs
Kayla Ryan
Nichole Casper
Fredrick Peck (Subcommitte report)
Janice Novotny
Shannon Carol
Eric Stiefvater
Lisa Smith
Pat Baltzely
Marrissa Greybill

OPI represenatives:

Marie Judisch
Michelle McCarthy
Matt Bell
Sheri Harlow

Jacob Williams welcomed and thank everyone for all the work already done.

- Review of the Process & Development Team Share Out
  - Grounding on Research
  - Indian Ed for All
  - Mathematical Practices
  - Structure/Formatting
  - Grade Band Priorities and Revisions

These three components are the Superintendents Visions of what was to be accomplished during this process .

1) **Simplicity:** Fewer standards with streamlining where possible/appropriate
2) **Practicality**: Each standard is focused on the learning goal specific to that domain
3) **Clarity**: Montana's standards are written to provide velar and concise language for students, parents/guardians, and educators.

Report from the Development Teams from K-2 Team: Tom Redman, Nichole Casper ; 3-5 Team: Beth Burrows; 6-8 Team: Eric Stiefvater; 9-12 Team: Marrisa Graybill, Fred Peck, Janic Novotney,

Breakout into K-5, 6-8 and 9-12 to review the Math Practices document comments recorded on worksheet

Introduction of Matt Bell, Language and Culture Specialist at OPI Tribal Student Achievement and Resilience Unit. He is here to put a mindful focus on the thoughtful integration of IEFA into Mathematics Practices.

Marie let everyone that #7 will be done by a subcommittee that has knowledge regarding IEFA.

Asked everyone to read the notes that the breakout teams had made comments on.
https://docs.google.com/spreadsheets/d/103Ytfq0lpfvNOhCHfi4AOIsAvdVXoh88YO0Wi6gG1c0/edit#gid=1615280812

CURRENT (Common Core) MT MPs	PROPOSED (draft 1) Montana MPs	NAEP
#1. Make sense of problems and persevere in solving them	1. Problem Solving and Perseverance	
#2. Reason abstractly and quantitatively	2. Abstracting and Generalizing	*
#7. Look for and make use of structure	*MP#7 is absorbed in NAEP#2*	
#8. Look for and express regularity in repeated reasoning	*MP#8 is absorbed in NAEP #2*	
#3. Construct viable arguments and critique the reasoning of others	3. Justifying and Proving	*
#6. Attend to Precision	*MP#6 is absorbed in NAEP #3*	
#4. Model with mathematics	4. Mathematical Modeling	*
NEW STANDARD – to be written	5. Representing (inserted)	
#5. Use appropriate tools strategically	*MP#5 is absorbed in NEW #5*	
	6. Collaborative Mathematics	*
NEW STANDARD – to be written	**7.** Culture (particularly IEFA)	

Review statement from the Subcommittee: Tom Redmon, Eric Stiefvater, and Fred Peck

Tom: The subcommittee was started because of having to have aa vote of keeping the practices the way they are because they have value or moving to the NAEP practices because they also have value. But in the end could not come up with result. The subcommittee was a valuable proves because we got lots of comments and insights out and where we landed was seeing value in the original practices but we appreciat4ed the more concise framework on the NAEP. We liked that they were not numbered and without emphasis on priority, one thing that the subcommittee discussed was the alignment between the common core math practices and what would be in the NAEP. We did a crosswalk and found that NAEP doesn't have problem solving and perseverance. So, we wanted to maintain that we saw value in maintaining those. The rest of the original math practices we saw fit into one or mor of the NAEP practices. Mathematical modeling mapped nicely and representing being different than modeling and critically important. So that means we will need to revise that representing NAEP standard to include using tools strategically. The collaborative math we all saw a lot of value and really liked that as one of the Five main standards. We had lots of conversations about how to integrate IEFA and thought that there should be a math practice intentionally considered culture and Montana American Indians, throughout our work with mathematics. This should be done by a team with more knowledge about these practices.

Marie stated that the development team was very intentional in not putting the verbiage together for practice number seven, because this should be done by the EFA team and include tribal members and educators so that their voice in part of the development of the practice.

Jacob W the core of the conversation around this and the debate wan not so much focused on the revision, but the hesitancy was always around implementation. That if the shift would impact implementation negatively. That's where the group ended up really coming together on the idea that improved set was to a great benefit. Everyone understanded how past practices integrate into this revised set would mitigate any implementation issues. So, people would clearly understand where the came from before and after. Giving them the opportunity for educators to dig deeper and then maybe gain understanding of the practices, that they did not have before.

Fred: One thing about the implementation is we were remindful that for one teacher's have already spent over a decade learning the common core math practices. Secondly many commercial curricula, have those math practices embedded, so they will be match them up. What we didn't want is to make it harder for teachers to implement math practices. For example, make their curriculum now not relevant to them. We really liked the NAEP practices for us it felt clearer and more implantable and then the idea about the crosswalk absorbing some of the math practices is there so the teachers know they are still doing a good math practice and it's still a Montana math practice. It's just part of abstracting and generalizing and it's not a separate standard.

Jacob: next step is to define them at a high level across all grade levels and then within each grade band/grade level then the would be uniquely defined to match what each practice looks like in that specific context. Nature of conversation was how to implement practices. They would like to move away for the wordiness.

Discussion amongst Group on proposed Math Practices:

Jenny Combs I was just curious that we've talked a lot about the elaboration document, and I was thinking about the science standards, how they also have assessment boundaries, I was wondering if that ever came up in your conversation. L, formal assessment boundaries, but did anyone talk about parameters.

Marie: It was definitely a though that we were talking about as we went through and you could kind of see n the regular standard regular content standards no seeing their practice up to a hundred but we're really testing or assessing to 20 at first grade for example and that might not be a line exactly with the content.

Tom: we talked about formal assessment boundaries we didn't talk about embedding formal assessment boundaries in the standards or decide what we're doing but we did talk about there being parameters that we want to stay with them and that often though different grade bands decided those should be come up different. If they should come in the elaborations or if they should be in the standard themselves.

Pat Baltzley: I like the thought that went into the math practices; kudos to the group. I really think that it is important that the crosswalk be out there for the teacher0 to be able to access. Number six I really like that attend precision was so strong out there and when it gets absorbed into justifying and proving I'm no familiar with so I get lost, so the idea of it being a crosswalk is good because of the simplicity. Thank you for absorbing 7&8 into abstracting and generalizing, and she really likes the new look. When you were talking about the elaborations, were you also talking about the elaborations for the math practices that include the more specific thinks about patterning, etc., that kind of come out in 7 & 8 might be good as well.

Becky Berg: it is important for teachers to see the connections between the current ones and what we're writing. I mean simple parentheses with MT on NP2 for example next to the new ones so they can see that connection right there because teachers also aren't going to look at a lot of different documents so if we could put it right therefore them to see that connection it would be key because it's all of our resources.

Michelle McCarthy: we had a lot of conversations about that, it centered around when teachers go to look for the standards what they find is the curriculum guides that have all the details. Where these components are going into the ARM. The teachers are not going to the ARM to find the standards.

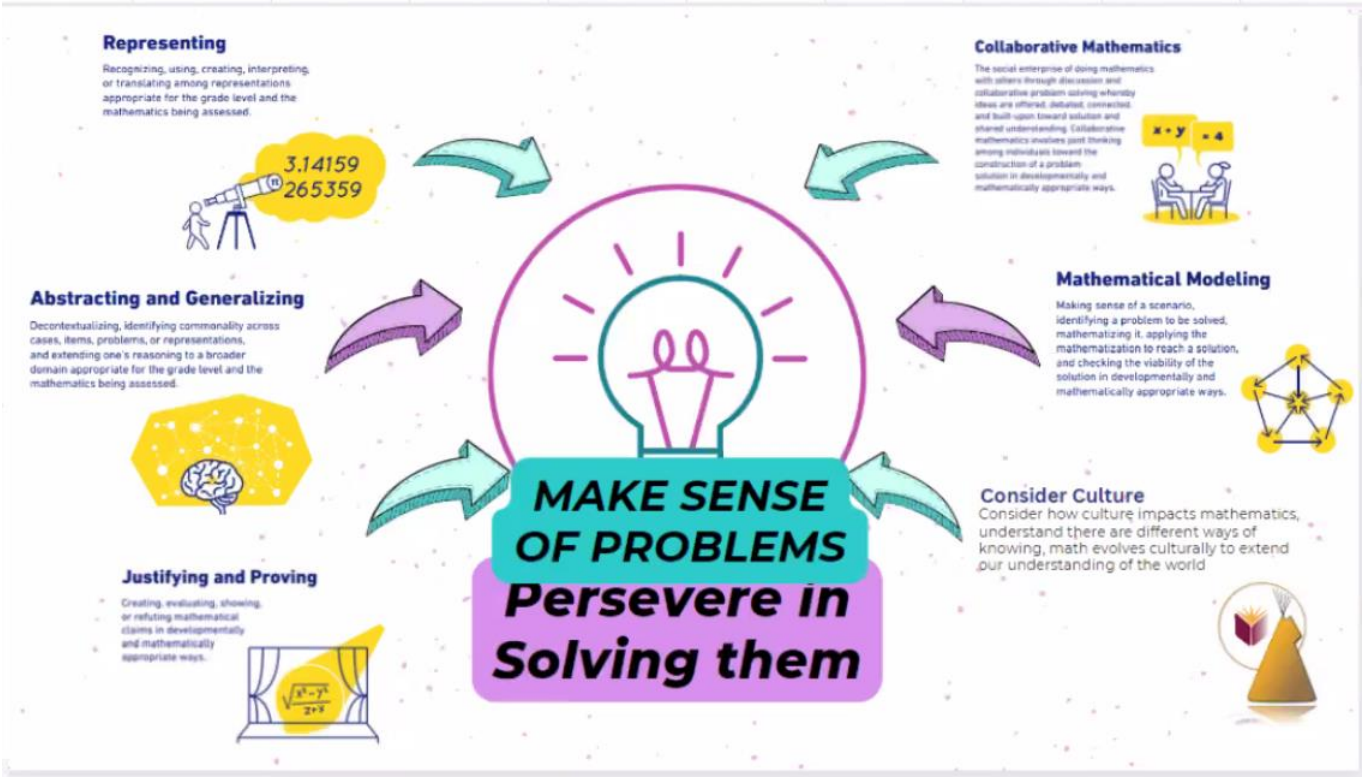
The curriculum guides that OPI (with assistance from everyone here) will provide everything teachers need and are not so overwhelming that teachers just shut down.

Marie: We talked about the number of practices and how if the were combined that none of us have eight and we rename them it will not be enough of a change for teachers to confidently go, wait that's a Montana number two, not the common core number two etc... If we just have eight and we change the eight, they're not going to know the difference in what we're trying to do, especially in adding that number seven. So, Lisa I like your suggestion on calling them a different name. We also talked about taking the numbers away.

Tom: said it was not decided yet that we should hear what Fred has to say about this. If we keep the eight practices, noting really changes like the teacher won't see it as a change and they'll just continue business as usual and then Fred had brought up Peter Lilydale's who philosophy.

Fred: I am wonder why we need the shorthand; this actually requires a lot of expertise on the part of teachers, It requires you to memorize a coding that I'm not sure we need to memorize that coding. For example, it's just as many syllables to say MP8 or almost as many as it is for MPB as it is to say abstracting and generalizing? Why not just justify and improving? So I think that some on the conversation that we had was part of the reason we love these standards. Because it just says representing and not use appropriate tools strategically. Representing this easy to say it's easy to understand if we take a clear thin like representing and turn it into something complicated like MP MPQ nobody knows what NPWQ means, but everybody knows what representing means. My argument is that these are easy to say they're easy to rate, short and simple and we should just leave them.

Marie: This is kind of the general idea and maybe it won't look exactly like this as we go through these different revision phases this is just an idea of what it could look like. One of the things that we need to bring in is those longer definitions of what they mean to us in Montana because we do not have those elaborations right now.



Sharon Carroll: Can we add an explanation to the public why we are changing to the NAEP and brought up the math practices and how it is evolving.

Fred: This came from the research group and documented that the progression of the math practices in standards documents the progression of math practices in standards documents framed the NAEP standards as being the next evolution. The fact is like these practices really spoke to us as being clear and simple, it's not so much where they came from.

Math Practices Review & feedback documented on the worksheet

- Review statement from the subcommittee.
- Discussion amongst group on proposed Math Practices.
- defining explanations of MPS results on worksheet

Grade Bank Work **-** Breakout rooms:

- Review of the Proposed Contend Standards Work
- Brain Storming document

Protocol

- Review questions asked by development team
- Shar information gathered from assigned chapters
- Review proposed standard revision top to bottom
- comment on simplicity, clarity, practicality of revision
- Make suggestions as needed
- If no suggestions are made, leave bland

K-5

Amy Jones
Becky Berg
Jacob Williams
Jenny Combs
Kayla Ryan
Marie Judisch

6-12

Erich Stiefvater
Lisa Smith
Matthew Bell
Michelle McCarthy
Pat Baltzley
Sharon Carrol

Lunch Break

Share out:

5-K -Feedback questions for team; noted in worksheet

- Fluency Definition
- IEFA Reference – within content standard or pull out of contend standards and keep in elaboration documents for both content and MPs
- Examples – use 3-5's

6-12 notes on worksheet

Continue breakout Grade Band Work

Review Team Recommendations and Next Steps

K-5 reported that they got through K-2, and that they focused on staying consistent, and that there was still concerns about examples.

Survey sent out to the K-5 team to see when they could meet prior to the Aug 10th meeting. https://doodle.com/meeting/participate/id/dPQ8o4ye

Please complete to see if we can check in together in the next week!

6-12 Reported that they had gotten all of it done, but stopped a geometry, great job by that team.

Same talk about consistency, impressed that the reviewing team made a lot of progress separating grade spans.

6th grade we had a lot of questions, they didn't really change but they simplified, still a lot of content, but it can be done.

Next Steps are:

1. Development Team on August 10th
    a. Review suggestions
    b. Continued work on standard revision
2. Return to Review Team – date TBD

Ideas of how we can finish this week since we will be going back to school.

- one suggestion is to do work in evenings
- Put limits on meetings of 45 minutes
- How can OPI help through the HUB?
- Yes, grade band work in subcommittees.
- Anyone wants to join Aug 10 from 1-2:30
- Marie will send out information, and firm up plans.

Marrie also wanted use to know that we are keeping task force work in the hub but making a Google Site for public viewing - removing those extra steps for transparency sake