Name	City	Which group do you represent? Check all that apply	Please use the space below to provide comment on the proposed South Dakota Mathematics Standards. Please include the specific standard that you are referencing.
Shana Ward	Rapid City	K-12 Math Educator	Equations and Inequalities 8.A.1 Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solution. Maybe reword "give examples"..... to IDENTIFY or make it like 8.A.6 KNOW THAT... : 8.A.6 Know that a system of two linear equations can have one solution, infinitely many solutions, or no solution. Will they actually have to "give examples" .... make up there own equations on an assessment? Or will they just identify equations that are of one solution, no solution, infinite solutions.
Karla Dieterle	Rapid City	K-12 Math Educator, Parent/Guardian	A2.QF.1 Solve quadratic equations with complex number solutions. I have issues with this standard. Why are we only focusing only complex numbers (imaginary numbers)? Shouldn't we also solve quadratics involve in real life. I know you have it in Algebra 1 but I have been teaching for 19 years and I can tell you the students still need to learn how to solve quadratics with real numbers as it is on ACT test and college entrance exams. If they only see it in Algebra 1 you are setting the students up for failure. Are you guys even thinking about the students?
Karla Dieterle	Rapid City	K-12 Math Educator, Parent/Guardian	I noticed there is no 4th year math section. What about the schools that offer 4th year classes to prepare students for college? Why again are you setting the students up for failure by not preparing them for college? You need to think about all students not just the ones not going to college. We have always had 4th year math standards, why all of a sudden are you not looking at 4th year math standards. You never addressed that in your changes.
Sharon Vestal	Brookings	Higher Education Professional	I noticed that the 8 Standards for Mathematical Practice were completely removed from the proposed math standards. These are a roadmap for high-quality math instruction, so it upsets me that these were removed. In the list of changes, it says that they are woven throughout the standards, but I don't really see that. Would the board consider adding in some practice standards? The recently adopted Computer Science standards have practices listed, and the Science standards list science and engineering practices. It would be beneficial for some best practices to be included in the proposed math standards.
Kevin Smith	Brookings	Higher Education Professional	My main concern is not having the Standards for Mathematical Practice listed. I worked with preservice teachers and the MP standards are a critical part of learning to be a good math teacher. They serve as a reminder for the habits that we should be working to instill in our students across all grade levels. I like that you've thought about how to embed them in the content standards, but I think you should also have them listed separately with an explanation about what they are.
Cindy Kroon	Hartford	K-12 Math Educator, Grandparent	I am concerned about the impact of the changes on school curriculum. Publishers write for large markets, and concentrate on covering the Common Core standards because that is their largest market. The current SD standards were originally adopted and updated with this in mind. Where will we find curriculum that matches the new standards? The SD market is much too small for any publisher to be interested in writing to our custom standards. If adopted, these standards will require SD teachers to basically write their own textbooks adapted to these non-standard standards. SD teachers do not have time to do such extensive curriculum adaptation and supplementation in addition to their already heavy workloads.
Jessica Klimisch	Vermillion	Higher Education Professional, K-8 Math Preservice Teachers Instructor	Standard 2.N.3 includes two separate skills - being able to count by 2s to 50 AND identifying whether the number is odd or even. It may be beneficial to separate these into two separate standards.

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Shana Ward	Rapid City	K-12 Math Educator	8.A.3 Analyze and solve one-variable linear inequalities with rational coefficients. This standard is new to 8th grade. Concern: text books that have been adopted do not have this standard aligned with 8th grade and do not include it. It is a high school standard for Algebra 1. Why add a standard? It is already difficult enough to cover all the standards. 8.A.4 Understand a system of linear equations to be a set of two or more equations. 8.A.5 Know that the solution to a system of two linear equations is an ordered pair that makes both the equations true. 8.A.6 Know that a system of two linear equations can have one solution, infinitely many solutions, or no solution. 8.A.7 Solve real-world and mathematical problems involving leading to two linear equations in one and/or two variables. Are 8th graders not required to solve a system of linear equations? But only to look at a system and understand if there is one, none, or infinite solutions from a graph or from equations?
Kelly Coates	Rapid City/Box Elde	K-12 Math Educator	Positives: More concise and LOVE that the HS standards are more in line with traditional classes as opposed to the more varied old set (building functions, seeing structure, ect.) Dislike: Trying to integrate the mathematical practices was only partially successful. The previous format of those was very clear, much to students' benefit in my opinion. I think we lose something worthwhile by cutting/changing those mathematical practices. Other notes: I know there was a lot of public backlash over the Common Core standards of two rounds of updates ago. I understand partially drifting from those for the sake of public sentiment, but going to a SD exclusive set of standards also makes it more difficult to find curriculum materials from national publishers in direct line with SD standards. We are still mostly in line with national traditions, but it seems unlikely that many publishers will create materials directly in line with our new standards. That creates more work for cross referencing/supplementing for busy teachers. Not sure what I would propose as a fix for that, but thought it was of note.
Nicole Swanson	Brookings	K-12 Math Educator, Student	The 7th grade mathematical standards are missing a lot in the algebra section. I am concerned by the lack of standards on solving equations. Where did these go? Students need to have a grasp of how to solve equations if they are going to move onto the algebra standards that are given them in the 8th grade content. Also do 7th graders need to be able to solve equations from word problems or why isn't this included in the standards. Overall, I missed some of the examples and clarifications that the old standards have. The new ones are shorter to read but not as clear due to this.
Michael Amolins	Harrisburg	K-12 Administrator, K-12 Retired Teacher	A quick guide to major instructional shifts would be extremely helpful for teachers as they review the proposed math standards. For example, shifting matrices into Algebra 2 when previously taught in "4th year math" at the high school level, the addition of measurement standards in middle school, etc. With respect to specific commentary at this time -- there is no mention of long division in the standards until Algebra 2 (Standard A2.PR.11), where the standard states that a student should use long division to divide polynomials. It seems appropriate that students in upper elementary and middle school would first be required to learn long division at a foundational level prior to application in a complex calculation such as this.

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Shaun Groen	Sioux Falls	K-12 Math Educator	7.G.1, 7.G.2, & 7.G.3 Circles have 3 standards now (originally only 1) - SA, V now only have 1 - Should a more detailed concept have more areas of measure? 7.A.1 is the exact same as 6.A.10 - usually they change from grade to grade 7.A.4 is the exact same as 6.A.11 - usually they change from grade to grade 7.A.3 nothing about solving 2 step (or multistep) equations in 7th grade 7.G.6 & 7.RP.3 removed the word equation from the standard (in multiple examples) 7.SP.1 box plots were only in 6th and Alg 1 and labeling quartiles and outliers is new to 7th grade 7.G.3 there are two of these, the numbering is off 7.SP.5 there is a type of medium when should say median 7.SP The new SP seems simpler to understand b/c more broken down. 7.A.3 used the word "create" where everything else is write 7.NS.A.2 (old standard reference) In the new standards, 7.A.2, does not use the words distributive property or combine like terms now, but they do in 6th and 8th grade. Describe, calculate, identify (academic language) is missing in current and more prevalent in new standards.
Stephanie Higdon	Rapid City	Concerned citizen/facilitator of K-12 STEM professional learning	I am concerned about many of the standards that have been proposed and the representation of the state of South Dakota in the development of these standards. In the past review over 40 school districts/community members/and/or professional entities were represented, including four high education institutions, and special education teachers. Additionally educators reviewed one grade level standard, in which they taught, or were considered an expert. In this review process there were 18 school districts/and/or professional entities (there are no community members listed, only one higher education institution and no special education teachers). In this recent review process, it is my understanding that educators reviewed grade level bands (K-2, 3-5, 6-8 and high school) in a very short time frame. The Department of Education website indicates there are 217 schools/districts in South Dakota, to include public, private, Tribal and SD special schools. Limiting the number of voices at the table to review these standards only limits opportunities for ALL students in South Dakota to become learners and doers of mathematics. I have talked to several educators who applied to be on this review board. They were told a small advisory board would give comments to the the standards, and be made aware when the standards would be reviewed. This did not happen. Not only were these educators also not made aware when the standards were reviewed, they were also only made aware the proposed standards were completed through a mass communication from the DOE one week after they were posted. To best serve all students in South Dakota, I recommend, that as changes and edits are made to the proposed standards throughout the hearings, more voices are invited to table. Discussions regarding these changes need to include those teaching in a variety of schools and who teach multiple levels of mathematics throughout South Dakota. Additionally more time needs to be provided to ensure the best changes are made for the students to learn mathematics at a deep level. Another recommendation would be to pause this process, and take the time to reevaluate the Department of Education practice to have small, select advisory boards review multiple grade level standards, in a very small amount of time, that impact all of the teachers and students across our state.
Stephanie Higdon	Rapid City	Concerned citizen/Facilitator of K-12 STEM professional learning	I am concerned about the vertical alignment of standards from kindergarten through high school. In the 2017 adopted standards a standard with the numbering system K.G.A.1 or 8.G.A.1 the "G" indicates the same domain, Geometry. This is true kindergarten through high school. In the proposed standards the standard named K.A.1 in kindergarten indicates Arithmetic, whereas in grades 6-12 the "A" in 6.A.1 now indicates Algebra. The same is true for Fractions in grades 2-5 and Functions in grade 8 - high school. Additionally, I wonder why function types have been provided with their own domain, Linear, Exponential and Quadratic. All functions can be interpreted and evaluated similarly. Separating functions into types is disjointed, also taking away previous learning progressions. Vertical alignment of the standards from kindergarten through the high school is important for both teachers and students, so that they can see mathematical progression. Changing these letters causes for confusion and a break in progression.

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Melanie Jacobson	Aberdeen	K-12 Math Educator, Higher Education Professional, Parent/Guardian	Good day! I teach high school and college level mathematics in South Dakota and have three children of my own in elementary school and younger. I write to you today with suggestions regarding the measurement and geometry domains of the proposed math standards for grades K-2: K.M.1 Students should not necessarily have to look at an object to describe its measurable traits (think of houses, buildings, and structures out of sight). Perhaps phrasing this standard as "Describe measurable traits of an object such as length, weight, or size." would be more direct. K.M.4 and K.M.5 These standards use "know" as the verb and seem vague/difficult to assess. It seems that kindergarten students are not expected to tell time (because that standard appears in later grades), but this standard begins with "knowing" about a clock. Perhaps these could be re-written to indicate that students can "Identify a clock as a tool that measures time of day," and "Identify a calendar as a tool that organizes days, weeks, months, and years," or "Identify a calendar as a tool that records days, weeks, months, and years." K.G.3 The phrase "in a variety of orientations" should not be parenthetical. Re-write this standard as "Identify and draw two-dimensional shapes (circles, triangles, squares, rectangles, rhombuses, and trapezoids) in a variety of orientations." 1.M.2 This standard would be more clear and concise if it used the word "length." Re-write this standard as "Measure length of an object by lining up same-size units with no gaps or overlaps and counting the number of units." 1.G.1 This standard was more clear in the previous standards. "Distinguish" is a more measurable verb than "understand," and examples of defining and non-defining attributes are helpful. Re-write this standard as "Distinguish between defining attributes (such as triangles are three-sided) and non-defining attributes (such as color, orientation, or size)." 1.G.3 This standard needs to define which regular and irregular two-dimensional shapes are appropriate for this grade. In mathematics, a regular pentagon is different than an irregular pentagon, but I sense this is not the intent of the standard in grade 1. Perhaps phrasing this standard as "Compose and identify two-dimensional shapes including triangles, squares, rectangles, rhombuses, trapezoids, circles, half-circles, and quarter-circles" would be more precise. 1.G.4 This standard needs to be re-written or eliminated. As a high school geometry teacher, I don't know why students in grade 1 need a standard that is specific to the description of a trapezoid and not other two-dimensional shapes such as rectangles. If South Dakota keeps this standard, then please use the correct terminology and define a trapezoid as having four sides with one pair of parallel sides. "Sides that go in the same direction" does not mean parallel. "Sides that go in the same direction" could be taken to mean lines that would eventually meet at a common point. If students are not ready to learn about parallel sides, then please eliminate this standard. 1.G.5 This standard could use a better verb than "understand." Perhaps we want students in grade 1 to be able to "Identify right rectangular prisms (three-dimensional solids with rectangular faces)." 1.G.6 This standard should read, "Partition circles and rectangles into two and four equal parts and describe the parts using the words halves and fourths." 2.G.1 This standard is too generic. I do not know what students can do after reading the text of this standard, nor how I would assess if a student has met the standard. Perhaps phrasing this standard as "Recognize, identify, and describe attributes (such as number of angles and number of sides) of polygons including triangles, quadrilaterals, pentagons, hexagons, and octagons." 2.G.2 This standard has some redundancy. It could be more clear and concise if it was written as, "Describe the differences between quadrilaterals (including squares, rectangles, rhombuses, and trapezoids) using attributes (such as congruent sides, parallel sides, and right angles)." 2.G.3 This is a duplicate of standard 1.G.3 except 1.G.3 expects students in grade 1 to "compose and identify" while students in grade 2 are only expected to "identify." See my comments on 1.G.3 and then determine which grade level is most appropriate for this standard. 2.M.3 This standard needs to be revised so that it is consistent and coordinates with the other measurement standards 2.M.2, 2.M.5, and 2.M.6. 2.M.3 should be re-written to include units of measure instead of tools. 2.M.3 should state, "Measure the length of objects using inches, feet, and yards." Please consider my suggestions and revise these proposed standards before approving them. Thank you for your consideration of my ideas and your work on this project.

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Erin Lehmann	Rapid City	Higher Education Professional, Parent/Guardian, Consultant	I have significant concerns about the current draft and its potential impact on teaching and learning in our state. The proposed standards eliminate explicit references to the Standards for Mathematical Practice, claiming they are “embedded.” Yet nowhere in the document are practices such as perseverance in solving problems, constructing arguments, critiquing reasoning, or attending to precision identified or described. These practices are essential to developing mathematical thinking, not optional add-ons. Removing them reduces mathematics to procedural tasks rather than conceptual understanding and problem solving. If they are truly embedded, they should be clearly visible and referenced, not implied. Many of the standards rely primarily on procedural verbs like “solve,” “add,” “identify,” or “compare,” with no expectation for students to explain, justify, model, reason, or communicate mathematical ideas. This lowers instructional expectations and encourages shallow learning. Rigor requires a balance of procedural fluency, conceptual understanding, and application; a balance missing from the current draft. Key ideas (like fractions, ratio reasoning, functions) are fragmented or mis-sequenced. This contradicts research on learning progressions critical to math understanding. Also, many standards are so broad they cannot be assessed. For example, “Add and subtract fractions” – but no conditions, no complexity, no expectations. When compared to the previous standards, “Add and subtract fractions with unlike denominators by replacing given fractions with equivalent fractions…” This gives clarity and rigor. By doing this, SD wording lowers expectations statewide. Where is the cognitive rigor? These standards lack verbs and expectations of conceptual understanding. There are only “do-level” verbs. This will promote rote learning and reduce math to procedural skills. Big ideas are not referenced: equality as balance, structure of number systems,and function relationships. Without explicit connections, learning stays isolated and superficial. All of this will make it nearly impossible for school districts to adopt curriculum because publishers do not align to these stripped-down standards. For these reasons, I respectfully request that the Board revise the standards to restore cognitive rigor, algin with best practices and research from NCTM, NCSM, NAEP, and ACT to prepare South Dakota students for future success. South Dakota students deserve mathematics standards that prepare them to think, reason, and thrive, not just compute.
Michelle Azar	Huron	K-12 Math Educator, Parent/Guardian	I believe that 5.A.4 - 5.A.7 should be “to the thousandths place” not “to the hundredths place” for adding, subtracting, multiplying, and dividing. I make it a big deal how they get to have the awesome responsibility of knowing one new place in 5th grade for standard form, word form, and expanded form as well as for ordering and comparing, so it seems anticlimactic to only have to operate to the hundredths place.

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Melanie Jacobson	Aberdeen	K-12 Math Educator, Higher Education Professional, Parent/Guardian	Good day! I teach high school and college level mathematics in South Dakota and have three children of my own in elementary school and younger. I write to you today with suggestions regarding the measurement and geometry domains of the proposed math standards for grades 3-5: As a matter of consistency and to help with vertical alignment, I notice the Grade 3 standards on area and perimeter (3.M.1 – 3.M.10) are listed in the measurement domain whereas the comparable Grade 5 standards on volume are listed in the geometry domain (5.G.1 – 5.G.8). I feel proposed standards 3.M.1 – 3.M.10 would be more accurately classified as Geometry standards instead of Measurement standards. It would help with vertical alignment to consistently place these area, perimeter and volume standards in the same domain, regardless of grade level. 3.M.4 Remove the word “lengths” from this standard. Units of length are one-dimensional such as cm, inches, feet, and meters. Units of area are two-dimensional such as square cm, square inches, square feet, and square meters. Standard 3.M.4 should read, “Measure areas in square units,” and length should not be used as a description of units of area. 3.M.5 It seems this standard was shortened for clarity, but to me some of the meaning was lost. What corresponding operation is this standard referring to? This standard could be re-written to directly refer to the corresponding operation as multiplication like this: “Find the area of rectangles by tiling and relate area to the multiplication of side lengths.” 4.M.1 This standard has an unusual use of the word “from.” Perhaps it would be more clear to say, “Measure length, weight, mass, and capacity using U.S. customary and metric systems of measurement.” 4.G.1 and 4.G.2 are both about the measurement of angles and in my opinion could be more clearly separated into measurement and classification. For instance, 4.G.1 could focus on angle measurement by stating, “Measure angles in degrees using a protractor and understand a degree as 1/360 of a circle.” Then 4.G.2. could focus on angle classification by stating, “Classify angles as right, acute, obtuse, or straight. Draw right, acute, obtuse, and straight angles.” 4.G.3 Remove the word “angles” from this standard. Angles cannot be equilateral or scalene. These classifications are reserved for triangles. This standard could be written as: “Identify, describe, and draw equilateral, isosceles, scalene, right, acute, and obtuse triangles.” This standard would fit in better if it was re-numbered to be near standard 4.G.8 in the “shapes” category. 4.G.5 This standard is well written, although perhaps it should be listed first, before the angle measurement standard. It would make more sense to me to have 4.G.1 define an angle, then 4.G.2 measure an angle, and finally 4.G.3 classify an angle. 5.G.2 This standard needs the variable n as it was written in the previous standards. This standard should read, “Understand an object has a volume of n cubic units if it can be filled with n unit cubes without gaps or overlaps.” 5.G.4 is a generic category standard and 5.G.5 – 5.G.8 are sub-standards that fall under the category of relating volume to operations of multiplication and addition. Because 5.G.5 – 5.G.8 are the specific ways we expect students to relate volume to operations of multiplication and addition, I suggest omitting 5.G.4. It is redundant and achieved by the other standards. The first 5.G.11 is a duplicate of 4.G.3 and is better written than 4.G.3. I have suggestions for improving 4.G.3 above, although upon reflection I believe it may be better to omit 4.G.3 entirely and leave this standard to Grade 5. That way, students develop the concept of angle classification in Grade 4 and review angle classification as they learn to classify triangles by angle measure in Grade 5. There are two standards numbered 5.G.11. 5.G.14 This standard has a typo. In both instances, the standard needs to refer to “an ordered pair” instead of “the order pair.” The correct terminology is “ordered pair.” Please consider my suggestions and revise these proposed standards before approving them. Thank you for your consideration of my ideas and your work on this project.
Becky Larson	Mitchell	K-12 Math Educator	After reading through the proposed standards, I like the changes. I especially like the simplicity and directness of the language. The standards written this way make sense to me, which will assist in having a better understanding of what is expected in my teaching and in my students' learning.
Kenedy Koepsell	Mitchell	K-12 Math Educator	As a first year teacher I do not have much input on these changes. I have only worked with the original standards for a few weeks, so I do not have much to reference as of now. I did look through the 7th grade standards changes since that is what I currently teach and I think the changes align well and are effective as compared to some of the old standards. Thank you!
lee white	mitchell	K-12 Math Educator	Look good to me.
Jennifer Weber	Yankton	Higher Education Professional	It seems to me the loss of the standards for mathematical practice contribute to the fact that the lack of precision of language could be a problem. For example, "numbers within ten" or "go the same direction (parallel)" are not precise and while it might give a language for teachers to use when communicating with parents, I don't believe it captures the absolutes and truth that math should provide.

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Sharon Vestal	Brookings	President, South Dakota Council of Teachers of Mathematics	With the huge amount of data that is generated all the time in all areas of our lives, I feel like there needs to be more included in the domain(s) of Data Analysis, Statistics, and Probability. Some of the data standards are still in K - 5, but they are under Measurement and I think that Data Analysis and Statistics deserves its own domain. This is particularly important as we prepare our students for future careers, some of which don't even exist yet. Here is a recent article about the importance of Data Literacy in high school, https://www.the74million.org/article/is-calculus-overrated-some-reasons-to-rethink-how-schools-offer-advanced-math/ and here is a link to statistics standards guidelines from the American Statistical Association, https://www.amstat.org/education/guidelines-for-assessment-and-instruction-in-statistics-education-(gaise)-reports. Some of this information should be included in the new standards.
Sharon Vestal	Brookings	President, SDCTM	In the proposed standards you say that they are vertically aligned, but the domains are confusing. For example, in grades K - 5, A represents Arithmetic, but in grades 6 - 8, A represents Algebra, and there is no A in grades 9 - 12, where there are two algebra classes. In grades K - 5, F stands for Fractions, but in 6 - 8 and 9 - 12 F stands for functions. Why can't we just keep the same domains that we had previously. There are so many domains in 9 - 12 and it is confusing.
Keri Tisher	Watertown	K-12 Math Educator	I am a first grade teacher and I appreciate the change in standards to make them easier to understand. I have looked through the proposed standards and I am comfortable with all of the standards that are proposed with the exception of two. 1.A.5 Add a two digit and one digit number (with or without regrouping) using multiple strategies that reflect an understanding of place value. 1.A.6 Subtract a two digit and one digit number (with or without borrowing) using multiple strategies that reflect an understanding of place value. We have been introducing regrouping and borrowing at the end of first grade which I think is beneficial and good to introduce to first graders. However, having regrouping and borrowing as part of the standard it requires that all my first graders can master these skills. I do not feel that developmentally an average first grader is ready to master this skill. My higher level students may be able to do this but not all my first graders.
Megan	Box Elder	Instructional coach	-What happened to the “by memory within 20” standard in mathematical fluency in 2nd grade 2.M.4? We want to keep vertical alignment coordinated as K and 1st have solid pre-requisites. We'd like to keep within 20 with automaticity (memory) there in 2nd grade. -Check the standards about 2.N.5 and 2.N.6 -should it state to 1,000 vs. to 100 per our current mathematical standards and proposed includes 1st grade to 100.
Kate DeVelder	Box Elder	K-12 Math Educator	--What happened to the “by memory within 20” standard in mathematical fluency? --should 2.N.6 say within 1000, as currently the first grade standard that is similar says to 100, if the 1st grade standard says to 100 to be vertically aligned 2nd grade should be to 1000
Meggie Bennett	Box Elder	K-12 Math Educator	What happened t the "by memory within 20" standard in mathematical fluency standards that spiral from K-2? Check 2.N.6 should it say to 1,000 not 100?
Courtney	Box Elder	K-12 Math Educator	What happened to the “by memory within 20” standard in mathematical fluency? We would like it added back in as 1st grade has a standard of memory within 10. This would help with vertical alignment. Also, is 2.N.5 supposed to be within 1000? It is currently written within 100, but 1st grade's standard is within 100, so it would make sense vertically for 2nd grade to work within 1,000.

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Melanie Jacobson	Aberdeen	K-12 Math Educator, Higher Education Professional, Parent/Guardian	Hello again! I teach high school and college level mathematics in South Dakota and have three children of my own in elementary school and younger. I write to you today with suggestions regarding the geometry and statistics and probability domains of the proposed math standards for grades 6-8: 6.G.2 needs to be corrected. The word “tiling” should be changed to “filling” or “packing.” This standard is for finding volume, and volume is three-dimensional. The proposed standard erroneously uses the word “tiling” which describes two-dimensional area. 6.SP.1 and 6.SP.2 are too generic to be helpful. Standard 6.SP.1 is a definition of statistics. Do we really need a standard for the definition of statistics? Standard 6.SP.2 would be clearer if it used “data sets” instead of just “data.” 6.SP.8 seems strange to me. I wonder why students need to pick one measure of variation as “more appropriate” than another. Both range and IQR can contribute to a more complete understanding of the variation in a data set, so I don’t feel students need to pick one as better than the other. Instead, they should understand the advantages and disadvantages of each measure of variation. I also dislike the use of the word “shape” in this standard. Perhaps it would be clearer to say, “shape of the data distribution.” The 7th Grade Geometry standards are mis-numbered with two standards listed as 7.G.3. 8.G.9 The “(proportional)” parenthetical seems out of place. Similar figures have proportional side lengths, so it seems that is referring to the part of the standard that describes “different sizes.” Regardless, perhaps this standard could be rewritten with more precise language that describes similar figures as having congruent angle measures and proportional side lengths. Please consider my suggestions and revise these proposed standards before approving them. Thank you for your consideration of my ideas and your work on this project.
Allison Schmitz	Aberdeen	K-12 Math Educator, Parent/Guardian	Standard 1.G.4 changes the definition of trapezoid to "at least" 1 parallel side instead of our current definition of "exactly." I understand that both definitions are widely used, but this is a major change and will change how middle and high school teachers teach quadrilateral properties and proofs. Additionally, in our current standards, it isn't taught until 5th grade. Why the 4 year difference?
Allison Schmitz	Aberdeen	K-12 Math Educator, Parent/Guardian	These new standards are being labled as helping parents help kids with math. Supposedly we are "bringing back the standard algorithms." They were never taken away! Current standard 4.NBT.4 says students will be able to fluently add, subtract, and multiply using the standard algorithm. Division with different strategies is mentioned in 5th grades, but by seventh grade there is no question that students are expected to use long division (6.NS.1 "standard algorithm" AND 7.NS.2 "long division") However, the proposed standards do not mention the standard algorithms even once. A document search shows that the words "algorithm" or "long division" never show up in the document. If the new standards bring back the standard algorithms why does it only ever say "various methods?" Where is the list of methods teachers are required to teach? If it isn't in the standards, it isn't required!
Allison Schmitz	Aberdeen	K-12 Math Educator, Parent/Guardian	Our current standards have a list of helpful terms on the summary for each grade level. If we are working on defining fluency for each grade level, I would like to see a list of terms and/or notation that each grade level should be able to use fluently. I understand why we want to simplify the language of the standards, but the language of math isn't going to change. The new SS standards have standards that state a list of items students should be able to map and a list of people/events/etc. That students should know. I would like something similar for math For example 4.G.1-3 and 5-8 4.A.10, 4.F.11, 4.M.1 are all about terms that 4th graders should be able to define. A similar list could be made for formulas, properties, and/or algorithms that should be memorized. If we are trying to make standards that are easier to understand, I think having a list of these things instead of multiple standards would make implementing much easier. After the standards are adopted, a supplement could be made with the official definitions similar to what the Virginia DOE has avaliable https://www.doe.virginia.gov/teaching-learning-assessment/k-12-standards-instruction/mathematics/instructional-resources/mathematics-vocabulary-word-wall-cards
Allison Schmitz	Aberdeen	K-12 Math Educator, Parent/Guardian	There seems to be some content/rigor missing in the new standards: Comparing new 8.F.2 comparing proportional relationships to current 8.F.2 comparing two functions- we are no longer going to compare anything other than proportional relationships. Comparing new 8.F.9 understand a line to have the equation y=mx+b to current 8.F.3 defining y=mx+b AND 8.F.4 construct a function- we are no longer asking 8th graders to write equations for lines. Also a change in wording was made that made functions less clear instead of more clear. Comparing new 8.F.4 functions are an EQUATION OR RULE to current 8.F.4 functions are a RULE- why did we add the word equation? Students have a hard enough time understanding that relations don't have to have equations to be functions. It should say "Functions are a RELATION where each input has exactly one output" as that is the official definition.

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Allison Schmitz	Aberdeen	K-12 Math Educator, Parent/Guardian	I don't understand the new naming system and why it's better than the old system. It seems the same to me other than we changed all the letters. 8.A.1 is 8th grade Algebra in both. I see that we regrouped things, so new letters were needed, but I'm not sure how to do any vertical alignment because the grade levels change domains. For example- algebra 1 has EF for exponential functions but Algebra 2 has EL because it includes logarithms. It should still vertically align though so why cant we call it EL for both? Same with RT and TG- trig is trig. Why is there no MF for middle school? Do we not have anything to be fluent in? In elementary, there are data standards but they are under M- measurement. Shouldn't we have SP in elementary for data? Even if we aren't teaching full statistics and probability those are what the data standards align with.
Sharon Vestal	Brookings	South Dakota Council of Teachers of Mathematics	The following current standards seem to be missing from the proposed high school geometry standards or modified so they are not as rigorous. Many of these focused on proofs, which is essential in building critical thinkers. “G.CO.3: Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and/or reflections that map the figure onto itself.” “G.CO.C.10: Prove theorems about triangles.” Proposed standards just say “apply theorems about triangles” and left out the word prove. “G.CO.C.11: Prove theorems about parallelograms.” Proposed standards say “apply theorems about quadrilaterals.” “G.CO.D.13: Construct an equilateral triangle, a square, and a regular hexagon.” “G.SRT.A: Understand similarity in terms of similarity transformations. 1.Verify experimentally and apply the properties of dilations as determined by a center and scale factor. 3.Use the properties of similarity transformations to establish similarity theorems. Theorems must include AA, SAS, and SSS.” “G.SRT.B.4: Prove theorems about triangles involving similarity. Theorems must include but not limited to: a line parallel to one side of a triangle divides the other two proportionally, and its converse; the Pythagorean Theorem proved using triangle similarity.” “G.GPE.A.1: Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.” “G.GPE.B.4: Use coordinates to prove geometric relationships algebraically. For example, determine whether a figure defined by four given points in the coordinate plane is a rectangle;…” “G.GMD.A.1: Give an informal argument for the formulas for the volume of a cylinder, pyramid, sphere, and cone. Use dissection arguments, and informal limit arguments.” “S.CP.A.4: Construct and interpret two-way frequency tables of data. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities…” “S.CP.A.5: Recognize and explain the concepts of conditional probability and independence in everyday language and situations.”

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Kevin Smith	Brookings	Higher Education Professional	I did a deep dive analysis of 4th grade using ChatGPT. You might want to utilize AI to help do some of the analysis as well. It uncovered some important things to consider. Here are a few things to look at: Depth vs Breadth If the proposed standards include every topic under measurement, geometry, data, arithmetic, fractions, decimals, etc., there is a risk of breadth overwhelming depth (i.e., many topics but less time per topic). This doesn't necessarily mean they are misaligned, but they may not reflect the "fewer, deeper" guiding idea fully. Conceptual Understanding Some of the proposed standards use simplified language which may reduce explicit mention of estimating, understanding why algorithms work, or exploring multiple representations. If key phrases like "explain why" or "make sense of" are missing, the conceptual depth could lag. - Using simplified language is fine if it is mathematically correct. - I want to make sure we're emphasizing conceptual understanding in addition to procedural fluency. - Let's be careful not to add more standards because things need to be "covered". Students need depth on topics to truly retain the info and be able to apply it in other situations.
Stephanie Lettau	Sioux Falls	K-12 Math Educator	First off, I am very disappointed in the standards committee. I'm not sure why we chose to go with a smaller standards writing committee that did not include any of the teachers from the bigger east side schools. I know it was certainly not for a lack of applicants. It is alarming that there were only three high school math teachers, and we don't even know what content areas they teach. In regards to the standards, they lack rigor. I do not feel these standards are any more challenging than our current ones. Additionally, in an attempt to clarify standards, they just became less clear. There is additionally wording that does not add to the standard such as Geometry standards G.RT.3. Also, we took what was one standard and made it into 5+ (see Geometry standards G.GF.1 through G.GF. 7). If we are truly trying to improve our standards because we think our students need to be doing better, then let's make sure our standards reflect that. These standards do not scream excellence. They read mediocre and "good enough." Arkansas has test scores that are decreasing yearly...I'm not sure why that should make us adopt their standards. We have exceptional educators in the state of South Dakota, and we should use them. Incorporate more people than just those who won't push back or will agree with whatever is said. If we truly want to improve the mathematical understanding of our students in the state, we have to make sure our standards support that. These standards are just another list.

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Emily Harms	Sioux Falls	K-12 Math Educator	The proposed rewrite of the South Dakota math standards raises serious concerns about clarity, rigor, and preparation for higher-level math. One glaring issue is the inconsistent use of domain codes—such as "F" representing Fractions in K–5 but Functions in middle and high school—which makes cross-grade referencing and curriculum mapping confusing for teachers and districts. The draft also drastically reduces the document from roughly 91 pages to 43, consolidating many items under the guise of "streamlining," which leaves educators questioning which standards were removed or weakened. Additionally, the proposed rewrite reduces the contributors list from over two and a half pages to about half a page, with fewer than half representing actual classroom teachers. Feedback from high school teachers, particularly from the state's largest district, Sioux Falls, suggests the committee may not be representative of the majority of South Dakota educators, and the standards do not reflect the variety of courses taught or the needs of schools. A major concern is the omission of 4th-year or advanced high school standards. The current standards explicitly include a 4th-year section with (+) standards for topics like limits, polar coordinates, conics, and permutations/combinations, as well as accelerated Precalculus content, providing essential preparation for STEM majors and Opportunity and Build Dakota scholarships. The proposed rewrite removes these entirely, leaving districts to handle advanced courses locally and offering no accelerated Precalculus standards, which constitutes a substantive loss of statewide guidance. The draft overuses vague verbs such as understand and know, which reduces cognitive demand and clarity, making it difficult for teachers to design assessments that encourage critical thinking. For example, 8th-grade standard 8.G.1 says "Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems," which implies memorization rather than conceptual understanding. Similarly, 7.G.2 states "Understand pi to be the proportional relationship between the circumference and diameter of a circle," instead of encouraging students to analyze and apply the proportional relationships of pi in problem solving. Overall, the proposed standards do not require students to think deeply or engage in higher-level reasoning. Other issues include the removal of real-world applications in 6th-grade geometry, the loss of definitions for mathematical fluency, and the elimination of examples that help elementary teachers know exactly what to teach. Teachers have also flagged potential problems aligning textbooks and other instructional materials with the new structure, which could have both budgetary and classroom impacts. Without an unpacked standards document like the current version and a glossary of key terms to clarify vague language, implementation will likely be inconsistent and confusing. The 8 Mathematical Practices, which are critical for guiding instruction and developing student reasoning, are also missing from the draft. Despite these concerns, some positive aspects of the proposed rewrite include the clearer naming of standards and improved organization, which makes the document easier to navigate. However, without restoring rigor, explicit examples, higher-order verbs, 4th-year and accelerated standards, and representative teacher input, the rewrite sacrifices clarity, coherence, and student learning opportunities for brevity, putting South Dakota students and teachers at a disadvantage.

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Heidi Dykstra	Sioux Falls	K-12 Math Educator	As a high school teacher, I am concerned about the broad and fragmented approach to mathematics in the proposed standards. Mathematics is a beautiful and interconnected discipline, and students gain the most understanding when it is presented as a cohesive whole rather than in isolated, choppy sections. The proposed standards treat topics as basic, separate units, which misses the opportunity to show students the patterns, connections, and relationships that exist across different areas of math. This fragmented approach risks diminishing both student engagement and deeper conceptual understanding. I am also concerned about the lack of precise terminology and vocabulary in the proposed South Dakota mathematics standards. Clear and accurate mathematical language is essential for students to develop a deep understanding and to communicate their reasoning effectively. Without consistent use of correct terms, students may develop misconceptions or struggle to connect concepts across different areas of mathematics. The proposed standards also need to include clear expectations for a high school 4th course. All students should be held to high standards, and the current draft sends the message that advanced math in a fourth year of high school is unnecessary. Students are capable of meeting rigorous expectations, and it is our responsibility to prepare them fully for college and future careers. Including standards for the 4th course would ensure students have the opportunity to develop higher-level thinking, problem-solving skills, and a deeper understanding of mathematics before graduation. The proposed mathematics standards need to be re-written to present mathematics as a unified, coherent discipline rather than a series of choppy, disconnected topics. The writing committee should ensure that correct terminology and precise vocabulary are consistently used throughout—from kindergarten standards all the way through high school 4th course standards. In the current draft, the mathematical practice of communicating ideas using accurate language has been largely lost. It feels as though the standards were written to appease non-mathematical adults, which has resulted in many key concepts being underdeveloped or missing entirely.
Alison Bowers	Chamberlain	K-12 Non-Math Educator	As a science teacher, it is incredibly helpful that the SD Science Standards are "NGSS-alike." I can review curriculum, resources, and lesson plans from a variety of sources and know that they are aligned to my content area standards. This saves an enormous amount of time for teachers AND allows us to access free, high-quality resources that we may have to use to supplement existing curriculum or lack of curriculum. As the sole science teacher in a small district, this is critical for me. I am concerned that the proposed standards will be unique enough that schools will struggle to find curriculum and resources (which many schools are already struggling with re: the new social studies standards). I'm also concerned that many of these standards could use an "unpacking." Is the DOE going to bring together a workgroup to do such work? This is another super helpful resource that NGSS already has for our NGSS-alike science standards. Finally, I'm concerned that these standards focus on the use of mathematical algorithms, rather than developing students' actual number sense and mathematical reasoning. My students' base math skills impact their success in high school science classes.

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Amy Schander	Yankton	K-12 Math Educator, Parent/Guardian	So far, I have reviewed the Algebra I standards and have found multiple examples where changes in wording have made the standards difficult to understand and/or mathematically incorrect. Here are a couple of examples: #1 Current Standard: Identify the effect on the graph of f(x) (linear, exponential, quadratic) replaced with f(x) + k, kf(x), f(kx), and f(x + k) for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with contrasting cases and illustrate an explanation of the effects on the graph using technology. Proposed: Graph and generalize the effect of transformations on linear, absolute value, and quadratic functions including stretches, compressions, vertical, and horizontal, with and without technology. The current standard clearly describes the depth to which transformations should be taught: vertical/horizontal translations, vertical/horizontal reflections, and vertical/horizontal stretches/compressions. The proposed standard ambiguously says “vertical and horizontal”. I’m not sure what this means. Is it referring to stretches/compressions only since they are mentioned previously in the standards? I couldn’t find another standard that mentions transformations. #2 Current Standard: Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data. Proposed Summarize data from two categorical variables in a frequency table; interpret relative frequencies in the context of the data, recognizing data trends and associations. The proposed standard changes “two-way frequency tables” into “frequency table.” A frequency table and a two-way frequency table are two different things. Two-way frequency tables are used for two categories, while frequency tables are used for one category. It is unclear if the proposed standard is trying to change this to “one categorical variable in a frequency table” or if it should be “two categorical variables in a two-way frequency table.”

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Stephanie Higdon	Rapid City	concerned citizen	In previous comments and testimony it has been stated that there is a concern in the vertical alignment of the domains in the standards- and how a change in letters from Arithmetic to Algebra causes confusion, and loses the alignment between the standards from one grade to the next. I would like to argue that changing the letter system and keeping the standards as they are written will not rectify the loss of vertical alignment. For this comment, I would like to highlight the loss of alignment within algebraic thinking from K-12 in the proposed standards. In the current standards- as early as Kindergarten students are learning algebraic thinking and reasoning. On page 9 of the SD Math standards- there is a table that demonstrates three problem types that equate to algebra, result unknown, change unknown and start unknown. Additionally, this table provides clear examples of each- thinking at this level is not included in the proposed standards- rather students are expected to only represent addition and subtraction using an equation. There is no expectation for them to begin their algebraic understanding. This understanding misses the mark in the proposed 1st grade standards as well- taking out language about the location of the unknown. In the current standards it is stated clearly that students need to solve word problems with the unknown in "all positions" and represent this unknown in an equation using a symbol (3+x=10 OR x+3=10 OR 7+3=x), clearly demonstrating algebraic thinking. The proposed standards it is not stated that this unknown amount could be in more than one position. This language of the unknown amount in all positions continues into 2nd grade in the current standards, but is again missing in the proposed standards. I propose that mathematics algebraic reasoning and thinking begin in Kindergarten, to demonstrate that students make meaning of parts unknown in this early grade, and that this learning builds up through the middle grades and into high school. In the proposed standards this is lost. This is only one example of how the vertical alignment of learning math has been lost in the proposed standards.

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Dr. Kiki Nelsen	Sioux Falls	K-12 Math Educator, Higher Education Professional, HS Math Instructional Coach	Hello Council, As a High School Math Instructional Coach, I've reviewed the proposed math standards and compiled feedback from myself and other educators. Overall, our concerns fall into three main categories: the process used to develop the standards, the substance of the standards themselves (including clarity and rigor), and inconsistencies in the chosen organizational structure. Concerns Regarding the Development Process The process by which these standards were developed raises several significant questions that impact the perceived legitimacy and breadth of expertise involved: Limited Teacher Involvement: A core concern is the lack of broad teacher representation in the curriculum writing and review process. We must ask: * Why were more practicing classroom teachers not involved in the initial conversation and drafting? * How many qualified teachers applied but were not selected for the committee? Committee Demographics: Transparency regarding the makeup of the writing council is essential. We need to know the demographic breakdown of the individuals involved, including their geographic location (urban/rural), school size, and specific teaching area/grade level. A balanced representation is crucial for standards that must serve all students and districts in South Dakota. Source Selection Justification: Clarification is needed on the decision to examine specific states' standards and external organizations' work: * What was the rationale for the specific groupings of standards that were considered? * Given negative data regarding student outcomes, why were Arkansas's standards chosen for consideration? * Is there any incentivization or non-objective reason for the inclusion of work by the Hillsdale professor's Archimedes group? Critiques on the Clarity and Substance of the Standards The proposed standards present significant issues related to rigor, clarity, and completeness: Lack of Clarity and Rigor in Language Decreased Mathematical Precision: Attempts to simplify language have, in many cases, decreased proper mathematical language, which will harm students' long-term academic growth. Examples include: * Using non-academic terms like "unlike fractions" instead of "fractions with unlike denominators." * Describing parallel lines as "lines going the same direction." * We strongly recommend including a glossary of academic vocabulary within the document instead of removing essential terms. Overuse of "Understand": The term "understand" is vague and is often considered low on Bloom's Taxonomy. It does not clearly define what a student must do to demonstrate mastery. Recommendation: Standards should be written using action verbs that indicate application or demonstration of knowledge (e.g., "apply understanding by analyzing..." or "construct an argument to justify..."). Incomplete Course Offerings Missing 4th-Year and Alternative Course Standards: Deleting 4th-year course standards (e.g., Pre-Calculus, Calculus, Statistics) is a significant oversight and, frankly, a cop-out. These courses are vital for college and career readiness. Ironically, most of the states' standards that were used in this revision have 4th year and even specific course standards beyond Algebra II themselves. The council should have added standards for alternative 3rd-year courses (like Technical Math or Quantitative Reasoning), similar to the models used by North Dakota and South Carolina. These courses are essential for students pursuing non-STEM or technical pathways. Inconsistency in Domain Coding A major structural issue that will cause confusion across grade bands is the inconsistency in domain codes used throughout the K-12 standards: |A| Arithmetic or Algebra depending on the grade band. |F| Fractions or Functions depending on the grade band. |PR| Proportional Relationships (MS), Polynomial, Rational, and Other Functions and Equations (HS) These shifts in meaning are confusing and will hinder curriculum alignment efforts between elementary, middle, and high school teachers. Codes should remain consistent across all grade levels to represent the same mathematical domain (e.g., a "F" code should consistently indicate either Fractions or Functions, but not both). Models for Consideration I recommend revisiting models like North Dakota and South Carolina for structural improvements:

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Keith Moe	Humboldt	K-12 Math Educator	The current 5th grade standard of 5.NF.A.1 states that students don't need to simplify the sum or difference when adding or subtracting fractions. The similar proposed standard of 5.F.1 does not specify whether or not students need to simplify their sum or difference. Considering how finding equivalent fractions is a 4th grade standard (4.NF.A.1), I believe that students simplifying their sum or difference should be apart of the proposed 5.F.1. Either way, wether or not simplifying fractions is part of the new standard, it needs to be clarified if it is necessary or not.
Lindsey Tellinghuise	Willow Lake	K-12 Math Educator, Parent/Guar	Looking from 3rd grade to 4th grade specifically, in the area of fractions, there is not a specific set of denominators listed. In the current standards, grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8. These denominators are used because they work well together and help build a strong foundation when understand fraction equivalence. Why is this not mentioned in the new standards? The heading listed in the new standards is just fractions, but decimals are also under this heading but not always named as decimal fractions. Current standard: C. Generate and analyze patterns. 5. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule "Add 3" and the starting number is 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way. This standard gives the teacher an example of what a student should be able to do. Proposed standard: 4.OA.11 Generate a number or shape pattern that follows a given rule, identifying apparent features of the pattern that are not explicit in the rule itself. What is the reasoning for not giving teachers an example of what the standard looks like. This is true for many standards - why not provide teachers with an example of what the standard looks like in the classroom? Finally, why are we outsourcing to an out of state entity? The state spent millions of dollars on ELA PD to be created by Board of Regents universities to keep the money within the state. Why aren't we doing the same for other subject areas? Why is Hillsdale the "chosen one"?
Haley Dressler	Rapid City	K-12 Math Educator	1.MF.3 Recall from memory addition facts within 10. 1.MF.4 Recall from memory subtraction facts within 10. These standards are not developmentally appropriate. Standards should define what fluency is to ensure consistency across classrooms. 1.MF.1 Fluently add within 20. 1.MF.2 Fluently subtract within 20. This is a large jump for students given kindergarten is fluent within 5.
Crystal Wagner	Black Hawk	K-12 Math Educator	Define what fluent is, for consistency across grade levels. Recall is not appropriate for first grade. I appreciate the wording, it feels direct and easy to follow.

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John Mead	Olympia	K-12 Math Educator	This feedback has been uploaded to my google drive and shared as a pdf for ease of reading at https://tinyurl.com/SDFeedbackMead The feedback and suggestions in this document are made in reference to the November 10, 2025 draft of Mathematics Standards posted at https://doe.sd.gov/contentstandards/documents/Math-Proposed-25.pdf K.OA.8 – The CCSS standard K.NBT.1 specifically refers to teen numbers as being composed of ten ones and more ones. Is this standard intended to move the concept of a "ten" as a bundle of 10 ones from Grade 1 (1.NBT.2)? I note that the Grade 1 standards which align with understandings under 1.NBT.2 no longer explicitly defines a ten. K.M.6 – Does the elimination of the penny as minted coinage impact this standard? K.M.3 – Out of sequence K.G.3 – Some of the shapes listed in parentheses are plural, others are singular. 1.OA.6 – Why is the term "borrowing" here instead of regrouping? 1.OA.9 – Restricted to equations of what form? What range of values? 1.G.5 – It appears the word "Partition" at the end of 1.G.5 should be the first word of 1.G.6 2.N.5 – Same question as at K.OA.8. Is the concept of a "hundred" as 10 tens, and of a "thousand" as 10 hundreds implicit within this standard? 2.G.2 – Concepts of parallel lines, angle measure, and congruence have not yet been formally defined. (They are defined in grades 4 and 8.) This standard and 2.G.3 would need to be developed based on informal notions of these concepts. This seems like it would be a stretch. 3.OA.2 – The objects are not split into equal groups, a set of objects is split. 3.OA.8 – The range stated here is for the factor, not the product, correct? 3.F.1 – This standard undoes a lot of the work that the CCSS did to emphasize the fact that fractions are numbers that may represent parts of a whole. There is a reason that the Fraction cluster at Grade 3 is titled "Develop understanding of fractions as numbers." 3.M.1 – Area is a number that represents the amount of space inside a 2-dimensional shape. 3.M.7 – The distributive property is not a property of multiplication, but rather of the relationship between addition and multiplication. (See, for example, Table 3 in the CCSS) 3.M.9 – "distance around" is sloppy. 3.M.16 – Why is decimal notation being introduced here if decimal notation in general is not introduced until Grade 4? 4.OA.1 – missing a word 4.F.1 – Fractions have not yet been linked to division. Here, numerator and denominator should be used in place of divisor and dividend. 5.F.1 – How is this different from 4.F.3 and 4.F.5? 5.F.2 – The phrase "referring to the same whole" is omitted vs the CCSS version of this standard. Is this intentional? 5.G.6 – "Threefold whole number products of volume" is phrased oddly. "Use volume, represented by a product of three whole numbers, to represent …" 5.G.7 – Why the change from "edge lengths" to "side lengths"? 5.G.14 – distance from an axis, not movement. 6.NC.1 – Why "comparison" and not "relationship" here? So far comparison has only been used to refer to numerical comparisons. 6.NC.2 – "fractions, mixed numbers, and decimals" is redundant and actually possibly incorrect. (pi is a decimal, but not rational) I'd just leave it as "fractions" 6.NC.13 – using their GCF 6.PR.1 – Why the distinction between ratios and rates? 6.A.6 through 6.A.11 – These standards omit the major understanding from CCSS 6.EE.5 about what it means to solve an equation. Is this addressed elsewhere? 6.G.6 – Ordered pairs 6.SP.1 – "statistics [is] a branch of mathematics" may be the most controversial statement in the whole document. 6.SP.5, 6.SP.6 – Mode is not a measure of center and should not be listed here. 7.G.2 – pi is a number, not a proportional relationship. It is equal to the unit rate associated with that relationship, which is distinct

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Crystal McMachen	Rapid City	K-12 Math Educator, Parent/Guar	8.NC.10 Write numbers in scientific notation using positive and negative exponents. I did a search to see where students learn how to add/subtract/multiply/divide using scientific notation and it seems that it was completely removed from the standards. One argument maybe that you can use a calculator for that. However, if you know and understand how to do it, it is much faster than typing it into a calculator.
Crystal McMachen	Rapid City	K-12 Math Educator, Parent/Guar	I am concentrating on the 8th grade standards because that is where I have spent the last ten years of my 25 years of teaching. As I read through the standards, many start with the word "Understand." My first thought was, "How do you measure 'Understand'" because that seems very vague. Then as I read and looked more closely, the standards that start with the word "Understand" sound more like definitions. For example: 8.RF.4 Understand a function to be an equation or rule that assigns to each input (independent value) exactly one output (dependent value). 8.RF.5 Understand the domain as the set of inputs accepted by the function. 8.RF.6 Understand the range as the set of outputs produced by the function. Is this important for a student to know... definitely! But I am not sure it counts as a standard. What are they to do with this information? How deeply do they need to "understand" this definition? When a standard sounds like a definition to memorize, I think it waters down the intentions of what we want our students to know and be able to do.
Sarah Sever	Rapid City	K-12 Math Educator	3.MF.4 Fluently add and subtract multi-digit whole numbers using various strategies. I wish the 3rd grade standard above was written like the 2nd grade standards listed below, but within 1000. The standard above is exactly the same as the 4th grade standard, but 3rd grade should bridge 2nd to 4th. Proposed Change: Fluently add within 1000. Fluently subtract within 1000. 2.MF.1 Fluently add within 100. 2.MF.2 Fluently subtract within 100
Haylie Young	Brookings	K-12 Math Educator	I am referencing the proposed standard 4.F.3. Add and subtract fractions with an unlike denominator using a common denominator. This compares to the original standard of adding and subtracting fractions with a like denominator. This new standard is proposing that students further extend their knowledge of fractions by demonstrating the knowledge of knowing fractions need a like denominator to be added and subtracted, changing the denominator, and then solving the equation like in the current standards. This is adding on multiple steps for the students. Adding and subtracting fractions and working with fractions is a skill that is first introduced to students in the fourth grade, which is the grade that the change is proposed for. Adding on multiple new steps for students may make their knowledge of fractions more confusing and may lead to difficulty when moving on to multiplication. In my opinion, I think the change would cause confusion for fourth grade students and adding and subtracting fractions with unlike denominators should be a skill that is learned in the fifth grade where they have more practice with factors and more previous knowledge that gives them the skills to change the denominators to be common. There is a benefit for this proposed standard, where students will have more background knowledge on fractions when it comes time to work with them more in fifth grade. However, the amount of steps would most likely cause confusion when the main goal in 4th grade is for the students to understand the basics on adding and subtracting fractions giving them a foundation to build off of.
Courtney	Box Elder	Instructional Leader	2.N.6 now has 2nd graders decomposing 4-digit numbers into the thousands. Previously this standard was only up to 1,000. We would like to see it as "Compose and decompose 3-digit numbers into hundreds, tens, and ones." 2.MF.4 has students recalling from memory subtraction facts within 20. We would like this removed as this is not developmentally appropriate for second graders. If students are able to recall their addition facts within 20 from memory, we would rather them work on strategies to leverage their memorized addition facts to figure out their subtraction facts. Keep 2.MF.3 as written.

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Meggie Bennett	Box Elder	K-12 Math Educator	2.N.6 now has 2nd graders decomposing 4-digit numbers into the thousands. Previously this standard was only up to 1,000. We would like to see it as "Compose and decompose 3-digit numbers into hundreds, tens, and ones." 2.MF.4 has students recalling from memory subtraction facts within 20. We would like this removed as this is not developmentally appropriate for second graders. If students are able to recall their addition facts within 20 from memory, we would rather them work on strategies to leverage their memorized addition facts to figure out their subtraction facts. Keep 2.MF.3 as written.
Kate	Box Elder	K-12 Math Educator	2.N.6 now has 2nd graders decomposing 4-digit numbers into the thousands. Previously this standard was only up to 1,000. We would like to see it as "Compose and decompose 3-digit numbers into hundreds, tens, and ones." 2.MF.4 has students recalling from memory subtraction facts within 20. We would like this removed as this is not developmentally appropriate for second graders. If students are able to recall their addition facts within 20 from memory, we would rather them work on strategies to leverage their memorized addition facts to figure out their subtraction facts. Keep 2.MF.3 as written.
Megan	Box Elder	K-12 Math Educator,	2.N.6 now has 2nd graders decomposing 4-digit numbers into the thousands. Previously this standard was only up to 1,000. We would like to see it as "Compose and decompose 3-digit numbers into hundreds, tens, and ones." 2.MF.4 has students recalling from memory subtraction facts within 20. We would like this removed as this is not developmentally appropriate for second graders. If students are able to recall their addition facts within 20 from memory, we would rather them work on strategies to leverage their memorized addition facts to figure out their subtraction facts. Keep 2.MF.3 as written.
Michelle Stumpf	Belle Fourche	K-12 Math Educator	5.F.4. and 5.F.6. - #4 states multiplying fraction and whole number by a fraction --- does this strand include multiplication of mixed numbers and improper fractions or is it just 2/3 x 2 and 2/3 x 3/4? The addition and subtraction standard specifically states mixed numbers and improper fractions while the multiplication standard does not specify. #6 states solving real world multiplication problems with fractions and mixed numbers. Is multiplication of mixed numbers just introduced in story problem format in 5th grade? 5.OA.7 Divide decimals to the hundredths I need clarification on this one please, it was even unclear with the previous standards. When dividing decimals, is that only decimals in the dividend (to the hundredths) for 5th grade or does it also include a decimal value in the divisor?
Shaun Groen	Sioux Falls	K-12 Math Educator	8.N(C).11 is missing from the proposed math standards that were presented in July to the ones that are posted now for review. It was, "Solve real-world & mathematical problems by performing operations with numbers written in standard and scientific notation." Was it removed intentionally?
Sherwin Gilbert	Hartford	Parent/Guardian	Health Standards: -more accurately define 'health risk.'What one person perceives as a 'health risk may not be seen as a health risk by another. ---this ambiguity leaves far too much interpretation to the teacher and not enough guidance to ensure consistent education. Math Standards: -how will these changes affect the curriculum's districts are currently using? -how much will these changes cost the DOE / each district? -NAEP 2024 shows average math scores for SD 4th graders and 8th graders with only one year of data trending down over the past 3 years; we look to be leveling out - is the revision is standards necessary?
Averie Georgas	Rapid City	K-12 Math Educator	In 4th grade, we are concerned that we no longer measure or change unit conversions with time, but are expected to solve story problems involving time.

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Amber Grenz	Rapid City	K-12 Math Educator, Parent/Guar	As a first-grade teacher, I respectfully disagree with standards 1.MF.3 and 1.MF.4. I do not believe these expectations are developmentally appropriate for first-grade students. These standards closely resemble the second-grade standard 2.OA.B, which previously required students to have addition facts memorized only within 10. Despite our school's strong math performance, many of our second-grade students already struggle to meet that standard. Moving these expectations to first grade—and expanding them to include both addition and subtraction fact fluency—places an even greater burden on younger learners. I ask that you please reconsider this change. If we want our students to be successful, we must ensure that standards are aligned with their developmental readiness and set them up for success rather than frustration or failure. Thank you for your time and consideration.
Kristi Tlustos	Rapid City	K-12 Math Educator	Hi! I'd like to propose that 1.OA.6 be removed from first grade. This is more of a 2nd grade standard, and adds more than we previously had in first grade. We currently cover larger numbers with addition, but not subtraction. Thank you!!
Jodi Neuharth	Freeman	K-12 Math Educator	My biggest concern with the proposed standards is that separating math fluency into its own category risks a return to the old "drill and kill" approach—an approach that caused many students to dislike math due to an emphasis on speed and competition, such as games like Around the World. While I do believe that students should develop math fact fluency, the way these standards are currently proposed encourages memorization rather than number sense and conceptual understanding. A significant shift in my own teaching occurred when Common Core was adopted. I shifted from merely teaching the lessons to helping students understand the math and make connections. I started focusing on number sense and number relationships instead of rote memorization. For example, when students understand double facts, they can easily derive related facts such as doubles plus one (e.g., 5 + 5 = 10, so 5 + 6 = 11). Ten bonds are another powerful tool for developing fact fluency. When students learn the different ways to make ten, they begin to recognize and solve other facts more efficiently. Rather than memorizing every fact, students learn the ten facts (1/9, 2/8, 3/7, 4/6, 5/5), which support flexible thinking. If a student knows that 7 + 3 = 10, they can reason that 7 + 4 = 11. I have witnessed firsthand how students successfully learn math facts by developing number sense through strategies such as subitizing, ten frames, rekenreks, number strings, and other hands-on approaches. These methods help students see numbers differently and understand how they relate to one another. My concern is that an increased focus on memorization will diminish these hands-on experiences, weaken core understandings, increase math anxiety, and ultimately lead more students to dislike math. I am also concerned that by "simplifying" the standards, the depth of learning is being sacrificed. Although I teach lower elementary grades, I take great pride in deeply understanding my standards, as this allows me to teach them thoughtfully and effectively. The current standards are intentionally interconnected, supporting conceptual understanding through rich language and rigor at every level. When students are not appropriately challenged, they cannot reach their full potential. Simplified language risks losing the emphasis on problem-solving and critical thinking—skills we want all students to develop. These skills begin in the earliest grades and grow throughout a student's education. While the proposed standards may use simpler language, they reduce rigor and begin to feel like a checklist. I worry that this may lead teachers to teach a concept once, check it off, and move on, rather than intentionally building on prior learning and preparing students for future learning. I teach the youngest learners at the very start of their formal education, a responsibility I do not take lightly. I am committed to building a strong foundation that supports many years of positive learning experiences. I am hopeful that before these standards are adopted, the rich language, mathematical processes, and coherence across grade levels will be restored.

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Susan Gilkerson	Rutland	K-12 Math Educator	In the 8th grade section under Numbers Concepts and Computations, 8.NC.5, should have the words "with variables." Much of this concept is lost without this. In the 8th grade section under Number Concepts and Computations, we are completely missing the operations with Scientific Notation. That needs to be added back in. In the 8th grade standards under Relationships and Functions, 8.RF.3. the phrase "or non-horizontal line" is included. This contradicts the second part of the second where we are describing the horizontal or zero slope. That phrase should be taken out. A line can be horizontal.
Ann Noyes	Pierre	K-12 Math Educator	I was a member of the 2025 math standards revision committee. I am a 5th grade math teacher with 28 years of teaching experience and am National Board certified in Early Adolescence Mathematics. I have concerns about the proposed standards and the process that has been taken to revise them. It would be my recommendation to keep the 2018 standards instead of adopting the newly proposed standards due to oversimplification. Much of the mathematical precision and intent from the 2018 standards has been lost in an effort to make the standards “easier for parents to read.” Teachers are trained professionals who understand and can interpret the technical language of the standards, especially with the support of the unpacked standards documents. By simplifying them so much, the standards lost their clarity and rigor. A more effective approach would have been to create a separate, parent-friendly version, while maintaining precise mathematical language for the official teacher standards, just as the medical field maintains professional standards and protocols written in technical language for doctors, not patients. While there have been some changes that have been made, from the October proposed standards to the current proposed standards (Feb 2026) that makes them better, they are still very simple in the language which makes it very difficult to know at what level they will be assessed. In the proposed standard 5.G.14, the last part of the standard should read “and the y-coordinate in an ordered pair…” I cannot support the proposed standards or the revision process that produced them. Statements have been made suggesting that these proposed standards will lead to improved state test results, but in reality, test scores will not improve simply by changing the standards. I believe that improved progress will come from revising the way those standards are assessed.
Maranda Johnson	Box Elder	K-12 Math Educator	Previous standard 5.NF stated it is not necessary at this grade level to simplify the sum or difference. The new proposed standard is now saying to simplify. Keep not simplifying.
Jamie Williams	Box Elder	K-12 Math Educator	5.NF.1 previously said "It is not necessary at this grade level to simplify the sum or difference." THIS NEEDS TO STAY!!! I do not like that in the new proposed standards that they are saying they want to add it in.
Samantha Brewer	Box Elder	K-12 Math Educator	In 5th grade adding and subtracting fractions the original standard specifically says it is not necessary at this grade level to simplify the sum or difference. This needs to stary the same. In the new proposed standard in red you have adding simplify the sum or difference. This adds to the rigor of this standard and it makes it too many steps for this new concept for 5th graders.

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Tricia Walker	Watertown	K-12 Administrator	1. Thank you for considering public comments-- the revisions are much appreciated! 2. Standard 5.MF.1 says: Fluently multiply multi-digit whole numbers using an algorithm, including but not limited to the standard algorithm. There is no corresponding division expectation. Fourth grade is to recall division 0-10 from memory, but division does not reach the fluency stage as the other three operations do. Is this intentional? 3. Please consider creating a crosswalk between old and new standards that is consistent across the state. Because this lettering/naming convention does not align with any publishers or any purchased materials, support materials will be challenging to find. We cannot search for a specific skill using standard notation. It is extremely time consuming to do such work, and each district then is duplicating those efforts, which will not be consistent. 4. When standards are finalized, please release a spreadsheet version of the approved standards, with separate columns for the domain, the number, the standard, etc. The way they are currently published makes it challenging to put the into working documents because the text doesn't wrap and the alignment is off. We often want to paste standards into curriculum maps and pacing guides, so this would be helpful. 5. When will upacked math standards be released, so we can see how skills progress between the grades? With the changes in depth and application, these documents will be essential to tracing student learning. These documents are important to alignment work within a district. Thank you.

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Cecile O'Neill	Rapid City	K-12 Math Educator	I appreciate the thoughtful work that has gone into developing the proposed high school Algebra standards. However, I have concerns that certain components may unintentionally prioritize representational fluency and procedural transformation over conceptual mastery and long-term mathematical literacy. The proposed standards include: A1.LF.10 — Translating between equivalent forms of linear functions (standard, point-slope, and slope-intercept) and recognizing contextual features revealed by each representation. A1.QF.3 — Graphing quadratic functions in both standard and vertex form. While multiple representations can deepen understanding when used strategically, research in mathematics education cautions against overemphasizing symbolic manipulation at the expense of conceptual development. The National Research Council emphasizes that mathematical proficiency consists of five interwoven strands: conceptual understanding, procedural fluency, strategic competence, adaptive reasoning, and productive disposition (National Research Council [NRC], 2001). When curriculum prioritizes repeated translation among equivalent symbolic forms, instruction may shift toward procedural recall rather than adaptive reasoning. International assessment research also provides insight. Findings from the Program for International Student Assessment (PISA) indicate that higher-performing education systems tend to emphasize mathematical modeling, problem solving, and conceptual transfer over repetitive symbolic practice (Organisation for Economic Co-operation and Development [OECD], 2019). These systems often cover fewer topics in greater depth, supporting stronger transfer of learning. In addition, adult skills research from the Organisation for Economic Co-operation and Development suggests that the mathematics most frequently used in postsecondary life and work involves quantitative reasoning, proportional thinking, and data interpretation rather than routine algebraic form manipulation (OECD, 2013). This raises an important curriculum design question: To what extent should standards emphasize multiple symbolic forms of the same function if those distinctions are rarely applied outside academic settings? Research on curriculum coherence further suggests that systems emphasizing depth and focus produce stronger long-term understanding (Schmidt, Houang, & Cogan, 2002). Overextension of representational requirements may increase cognitive load and reduce opportunities for students to internalize foundational structures of linear and quadratic relationships. From a curricular efficiency standpoint, it may be sufficient for students to develop strong fluency in slope-intercept form for linear functions and standard form for quadratic functions, while cultivating the algebraic reasoning necessary to transform unfamiliar forms into familiar ones. Emphasizing transformation as a reasoning process, rather than mastery of every named representation, may better promote adaptability. My perspective is influenced by teaching in an alternative educational setting, where cognitive overload can significantly hinder engagement, as well as by personal experience learning mathematics in Belgium, where instruction traditionally emphasized deep mastery of foundational principles before expanding into multiple symbolic representations. I respectfully encourage the committee to consider balancing representational fluency with conceptual depth and transferability. A standards framework that prioritizes adaptable reasoning, modeling, and foundational structure may better prepare students for long-term quantitative literacy. References (APA 7th Edition) National Research Council. (2001). Adding it up: Helping children learn mathematics. National Academy Press. Organisation for Economic Co-operation and Development. (2013). OECD skills outlook 2013: First results from the survey of adult skills. OECD Publishing. Organisation for Economic Co-operation and Development. (2019). PISA 2018 results (Volume I): What students know and can do. OECD Publishing.

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Jennifer Shortbull	Rapid City	K-12 Math Educator	K.N.3 says read, write, and identify numbers from 2. What should the 2 actually be? K.N.6. Given a number within 2, identify one more. What should the 2 actually be? Neither of these are correct as 2 would be a low number for kindergarten.
Rachel Carroll	Rapid City	K-12 Math Educator	These comments for the standards for Algebra 2: The sections titles "Linear Functions, Equations and Inequalities" and "Quadratic Functions, Equations, and Inequalities" do not reference anything regarding inequalities. Will Algebra 2 still be covering two variable systems of linear and linear/quadratic inequalities? A2.PR.2 and A2.PR.3 feel like Algebra 1 standards. Is there a specific way they should be extended on for Algebra 2? A2.SP.1 Bivariate data (Scatterplots, line of regression, etc.) have previously been covered in Algebra 1.
Courtney Justice	Rapid City	K-12 Math Educator	I am wondering if the standards 3.M.1 and 3.M.4 are truly different standards or the same standard? The difference between the two is not clear to me. Is 3.M.8 supposed to be a standard on finding irregular area? If so, it may need some language clarification. Does 3.MF.1 need to include the word mentally, as we are building their conceptual understanding? Is it enough for them to have an efficient strategy or does it have to be a mental strategy?
Sam Caillier	Rapid City	K-12 Math Educator	I currently teach 2nd grade. I appreciate the change in language in some of the standards so it is clear what is expected from students (know from memory vs fluency, etc). All 2nd grade standards appear to be developmentally appropriate in my opinion.
Alli Williams	Rapid City	K-12 Math Educator	Good Afternoon, I am writing to see about possible changes to the standards 1.MF.3 & 1.MF.4. Currently, recalling facts from memory is a 2nd grade standard. I have concerns with introducing recall from memory into 1st grade standards. I feel like this will take away from the conceptual understanding needed to develop overall math understanding in the younger grades and promote math understanding at higher grades. This could start flash card learning and stepping away from the understanding of addition and subtraction at a conceptual level. However, if recall from memory is a skill that we want to introduce I think having students learn to recall "Ways to make 10 and Doubles facts" would be two standards that would help students use the more efficient strategies that are taught in 1st grade. This would allow for students to start being held accountable for recalling some facts from memory in a quick fashion without being overwhelming. These are also skills that greatly affect how efficiently students are able to solve addition and subtraction problems within 20 and the numbers of strategies they can access to become more efficient in solving higher level addition and subtraction equations. Thank you for your consideration in this matter! Alli Williams
Darcy Vincent	Brookings	K-12 Math Educator	5.nf.5, 6, and 8 seem redundant. Student are asked to interpret and solve quotient for 5NF.5 and 5NF.6 and then the same is addressed in 5 NF.8. I also think the NF standards need to be sorted in progression that makes sense adding and subtracting first then multiplying then dividing fractions. These all seem to be mixed up and not in any sequential order. As a fifth grade math educator for almost 20 years, I find there are just way too many standards and way too much for students to try to understand at fifth grade. In sixth grade they get the aid of a calculator to help with any sort of assessment and in fifth grade their brains just aren't mature enough to understand and retain this much information I would have loved to have participated in the standard work unfortunately it did not work out.

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Sharon Vestal	Brookings	President, SDCTM	This standard needs to be fixed. 5.G.14 Understand the x-coordinate in an ordered pair is the horizontal movement and the y-coordinate in an order pair is the vertical movement. In both instances, it should say "ordered pair." Also, I don't think that horizontal movement and vertical movement are good ways to describe the x- and y-coordinates because an ordered pair represents a location in the plane. My suggestion is for the standard to say: 5.G.14 Understand the x-coordinate in an ordered pair represents the location in the coordinate plane in relation to the y-axis (the line x = 0), and the y-coordinate in an ordered pair represents the location in the coordinate plane in relation to the x-axis (the line y = 0).
Crystal McMachen	Rapid City	K-12 Math Educator, Parent/Guar	8.RF.2 and 8.RF.12 are the exact same standard. (I looked on 4/10/2026). Are these standards going to be approved on May 4th without someone making sure there aren't errors like this? When I can find an error like this, I am not confident there aren't more errors when I have only looked over my grade level. How do we know that these standards have been looked over for coherence vertically? As for vertically aligned, for example there are 48 standards in 6th grade, 35 standards in 7th grade and 50 in 8th grade. How is that equitable distribution vertically? I really believe these are not ready to be our PUBLISHED standards.
Danyelle Brown	Sioux Falls	K-12 Administrator	In comparing the standards, the elementary standard have crossed out fractions being part of a whole. This is essential to understanding fractions and is built upon later in math curriculum. I do not see that added in anywhere. I also see that real life % calculations are no longer a part of the standards these are also life application. Both fractions and percentages are on the ACT which is the new state accountability test.

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Melanie Jacobson	Aberdeen	K-12 Math Educator, Higher Educa	Good day! I teach high school and college level mathematics in South Dakota and have three children of my own in elementary school and younger. I write to you today to share my disappointment in the process of reviewing and approving the proposed mathematics content standards as well as my disapproval of the proposed Geometry, Algebra 2, and Pre-Calculus Standards. 1. The proposed standards draft seems to have been written too hastily without input from enough stakeholders. Many edits and revisions have been suggested, and this does not reflect well on the quality of the originally proposed standards. 2. The proposed standards have been edited and revised between public meetings. As a teacher that wishes to review the proposed standards, this has created a feeling of shifting sand. If I print the proposed standards with the intent of reviewing them as time allows, I return to the DOE website to find that the draft I am reviewing is no longer under consideration. I am on the DOE math teachers' listserv and have not received updates about the proposed standards through that avenue. 3. I first became aware that a 4th year of high school standards, Pre-Calculus standards, were now part of the proposed content standards on April 7, 2026. The South Dakota Board of Education Standards Notice of Public Hearing Regarding Academic Content Standards states that the May 4, 2026 hearing will be the fourth of four public hearings regarding the mathematics content standards, but this is simply not true considering the substantial revisions that have occurred throughout this process. The Pre-Calculus standards have not been part of the proposed standards at any meeting prior to this fourth and final meeting. The Board should not approve what has become a rapidly evolving set of proposed standards at this fourth meeting. Adding a 4th year of high school standards is not a minor edit. Please allow more time for South Dakota to get these standards right instead of approving what has become a moving target in rough draft form to be used as South Dakota's content standards for the next seven years. Next, please let me share my comments on the proposed high school standards: 1. It has been stated that South Dakota is replacing its current standards with standards that are easier for parents and teachers to understand. As a teacher, I do not always find these shortened standards more useful. For example, HS Geometry standard G.GF.3 states "Apply and prove theorems about quadrilaterals included but not limited." I do not know what standard my students will be measured against when it comes to applying or proving theorems about quadrilaterals. As another example, HS Algebra 2 standard A2. El.2 reads, "Interpret the solution of a logarithmic equation as reasonable or unreasonable in context." Is this referring to the domain of a logarithmic function or real-world applications? The intent of this standard is unclear to me without more detail. 2. Mathematics education in the U.S. is widely criticized for prioritizing breadth over depth, and these proposed standards seem to be another step in the wrong direction. The current mathematics standards have THREE HS Geometry standards related to trigonometric ratios and right triangles. The proposed standards have SIX such standards, now including secant, cosecant, cotangent, the Law of Sines, and the Law of Cosines as geometry standards. Those topics would be more appropriately reserved for a Pre-Calculus course. While it is not accurate to assume that each standard takes a uniform length of time to teach, there are currently 46 standards in HS Geometry and the proposed standards expand this to 51 standards. There are only 37 weeks in most school calendars, and I would prefer the standards authors help us focus our time on depth of learning rather than breadth. 3. A review of the proposed Algebra 2 standards shows another shift toward breadth rather than depth. There are currently 36 standards in HS Algebra 2 and the proposed standards expand this to 56 standards. Adding more standards to Algebra 2 does not serve our students well. Although perhaps the standards authors are aware that not all 56 proposed Algebra 2 standards will be learned at the necessary depth because several proposed Algebra 2 standards are repeated in the now drafted Pre-Calculus standards. Why? If the standards are meant to guide teachers across the state on what should be taught in each course, let's use our mathematics standards revision process to agree on what should be taught in Algebra 2 and what should be taught in Pre-Calculus. Our current mathematics standards acknowledge there are shared standards between Algebra 1 and Algebra 2 "where one part of the standard is taught in Algebra 1 and then the concepts are extended and/or applied in Algebra 2. When this occurs, the standard has been split to clarify which parts of the standards are to be learned in each course." In the current standards, "shared standards are indicated by (i) for Algebra 1 and (ii) for Algebra 2." Can we please do this with the overlap between Algebra 2 and Pre-Calculus in the newly proposed standards? If we intend to replace our current mathematics standards with something more unique to South Dakota, then we should replace them with standards that are well-designed and a research-based improvement. The proposed standards seem to be neither. They have required too many edits and revisions to be considered well-designed, and the Board minutes do not include research that more standards written in simpler language will improve learning. Please do not approve these standards in their current form. Let's take the time to get them right. Thank you for your consideration.
Kelsey Heinert	Sioux Falls	K-12 Math Educator, Parent/Guar	Proposed HS Geometry Standards G.SC.2 and G.SC.4 are identical.

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Kelsey Heinert	Sioux Falls	K-12 Math Educator, Parent/Guar	G.SC.8 - we do not need to use "rigid motion transformations" to prove that two triangles are similar.
Liz Pettit	Sioux Falls	K-12 Math Educator	There is no standard on piecewise functions. In our current standards, there is this standard: "A2.F.IF.C.7b Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions." This would be a great standard to add back in to Algebra 2 and Pre-Calculus Standards.
Liz Pettit	Sioux Falls	K-12 Math Educator	In PC.FR.6 the word "intercepts" is listed multiple times.
Liz Pettit	Sioux Falls	K-12 Math Educator	In an effort to give guidance to teachers, there should be alternative third year standards for students who are not taking Algebra 2 or are not taking Geometry. Per state graduation requirements they aren't required to take those two classes, but there is little guidance for schools and teachers for what those students are being taught. Ex: For Consumer Math, the following guidance is given "Consumer Mathematics courses reinforce general mathematics topics (such as arithmetic using rational numbers, measurement, ratio and proportion, and basic statistics) and apply these skills to consumer problems and situations. Applications typically include budgeting, taxation, credit, banking services, insurance, buying and selling products and services, home and/or car ownership and rental, managing personal income, and investment."

Watertown Public Comment

5th MATH STANDARDS Current Standards		2025 Proposed Standards			Suggestion/ Consideration	Rationale
Operations and Algebraic Thinking 5.OA						
A. Write and interpret numerical expressions.						
A. Write and interpret numerical expressions.	1. Use and explain parentheses, in numerical expressions, and evaluate expressions with these symbols.	5.OA.1	Write and evaluate numerical expressions with parentheses or brackets using the order of operations.		ADDED. The expectation of brackets is an expansion of expectation. Please clarify: Are both parentheses and brackets expected to be taught/learned (but not braces)?	
	a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form,	5.N.3	Read and write decimal numbers to the thousandths place using standard form, word form and expanded form.		Please include the examples: e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000).	It is necessary to clarify what these terms are with examples. Expanded form can mean different things to different teachers.
	4. Use place value understanding to round decimals to any place.	5.N.5	Apply place value understanding to round decimals to any decimal place up to the thousandths place.		Change "thousandths place" to "hundredths place".	5th graders are expected to read and write to the thousandths place, so would only be able to round numbers to the hundredths place.
B. Perform operations with multi-digit whole number and with decimals to hundredths.						
	5. Fluently multiply multi-digit whole numbers using an algorithm, including but not limited to the standard algorithm.	5.MF.1	Fluently multiply multi- digit whole numbers using various strategies.		ADD: "including but not limited to the standard algorithm."	It is helpful to know the expectation of multiple strategies, and that the standard algorithm is one of multiple strategies expected. It is necessary to clarify WHEN the standard algorith is expected through the grade levels.

	6. Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Explain the calculation by using equations, rectangular arrays, illustrations, area models, or other representations based on place value.	5.OA.3	Calculate whole number quotients of whole numbers with up to four - digit dividends and two-digit divisors.		ADD: Explain the calculation by using equations, rectangular arrays, illustrations, area models, or other representations based on place value.	Without these examples, students are allowed to get an answer without working through conceptual understanding. It is not helpful to simply calculate/compute an answer, it is necessary to utilize multiple methods to understand the mathematical work.
	a. Add and subtract decimals	5.OA.4	Add decimals to the hundreds place using various strategies.		ADD: including concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between operations.	We like the separation of the skills, but need the details of HOW to do this for each operation.
		5.OA.5	Subtract decimals to the hundredths place using various strategies.		ADD: including concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between operations.	We like the separation of the skills, but need the details of HOW to do this for each operation.
	b. Multiply and divide decimals.	5.OA.6	Multiply decimals to the hundredths place using various strategies.		ADD: including concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between operations.	We like the separation of the skills, but need the details of HOW to do this for each operation.
		5.OA.7	Divide decimals to the hundredths place using various strategies.		ADD: including concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between operations.	We like the separation of the skills, but need the details of HOW to do this for each operation.
Number and Operations—Fractions 5 5.NF						
A. Use equivalent fractions as a strategy to add and subtract fractions.						

	1. Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference with a like denominator. It is not necessary at this grade level to simplify the sum or difference. For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, a/b + c/d = (ad + bc)/bd.)	5.F.1	Add and subtract fractions, unlike fractions, mixed numbers, and improper fractions.		"Unlike factions" should be "fractions with unlike denominators" We need to keep "by replacing given fractions with equivalent fractions" This standard needs to explicitly indicate that it is not necessary to simplify the sum or difference. QUESTION: Does this align with SBAC expectations for grade 5?	This is mathematically accurate language. Without clarification about the need to simplify fractions, teachers may have inconsistent expectations and students may miss important skills.
2. Solve word problems involving addition and subtraction of fractions.	a. Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem.	5.F.2	Solve word problems using addition and subtraction of fractions, unlike fractions, mixed numbers , and improper fractions.		"Unlike fractions" should be "fractions with unlike denominators" Need to add: "by using visual fraction models or equations ."	This is mathematically accurate language. This provides conceptual bridge for understanding. Jumping to the end goal will not help them long term.
	b. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2.		MISSING		Please add standard: Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.	The concept of benchmark fractions is foundational undertsanding for future learning and connecting concepts.
B. Apply and extend previous understandings of multiplication and division to multiply and divide fractions.						

	3. Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. For example, interpret 3/4 as the result of dividing 3 by 4, noting that 3/4 multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size 3/4. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?	5.F.3	Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers.		*We appreciate this simplified example, but would still like a reminder of the "visual fraction models" terminology to allow conceptual understanding.	New to the profession/grade teachers have to be reminded that this skill is conceptual. We cannot just reference the end goal or we will miss long term understanding.
	4. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.	5.F.4	Multiply a fraction or whole number by a fraction.		This stanard is too simplified to cover a and b as well.	
	a. Interpret the product (a/b) × q as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations a × q ÷ b. For example, use a visual fraction model to show (2/3) × 4 = 8/3, and create a story context for this equation. Do the same with (2/3) × (4/5) = 8/15. (In general, (a/b) × (c/d) = ac/bd.)					

	b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.				We would like to see square units/cubic units called out, rather than assuming teachers will know to include these examples. Area and modeling needs to be called out. Area is in SBAC.	
	5. Interpret multiplication as scaling (resizing), by:				Include a standard about scaling.	This is an important concept that has been left out. The concept of scaling is expected math vocabulary.
	a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.					
	b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence a/b = (n×a)/(n×b) to the effect of multiplying a/b by 1.				Please include this expectation.	This standards is foundational (and included in the Smarter Balanced assessment). The example is important to understanding.

	7. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.	5.F.5	Divide unit fractions by whole numbers and whole numbers by unit fractions.		MISSING. This standard does not include any examples indicating the progression of this skill. Students need to be able to use visual models and tape diagrams to understand division of fractions. If we added "use visual models" it would make eliminating a and b acceptable. Models are used in SBAC and the most appropriate for this grade level, so it must be explicitly stated.	These steps (former subpoint a and b) develop the conceptual understanding necessary.
	a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context for (1/3) ÷ 4, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that (1/3) ÷ 4 = 1/12 because (1/12) × 4	missing			This concept is missing.	
	b. Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for 4 ÷ (1/5), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that 4 ÷ (1/5) = 20 because 20 × (1/5) = 4.	missing			This concept is missing.	
B. Represent and interpret data.						
	2. Make a line plot to display a data set.	5.M.2	Create and use a line plot to display a data set of measurements to solve real world problems involving information presented.		This is a great change.	

		5.G.6	Use threefold whole-number products of volume to represent the associative property of multiplication		This is confusing terminology - what are threefold whole-number products? Should it have been factors?	
		5.G.7	Solve real world problems by applying formulas (V=l • w • h, V=B • h) for rectangular prisms to find the volume of right rectangular prisms with whole number side lengths.		This is a new expectation?	
Geometry 5.G						
A. Graph points on the coordinate plane to solve real-world and mathematical problems.						
	1. Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).	5.G.12	Understand a coordinate plane to be a diagram for graphing two related pieces of information with two perpendicular number lines.			
		5.G.13	Identify the origin, x-axis, and y-axis on the coordinate plane.		This is repeated twice in the standards draft.	

		5.G.14	Understand the x-coordinate in an ordered pair is the horizontal movement and the y-coordinate in the ordered pair is the vertical movement.			
	2. Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.	5.G.15	Represent real -world and mathematical problems by graphing points in the first quadrant on a coordinate plane .		Include "and interpret"	This is the application expected.
		5.G.11	Identify and draw triangles based on their attributes (side lengths and angle measures). Understand that triangles can be classified into categories (such as equilateral, isosceles, scalene, acute, right, and obtuse), and that these categories can overlap.		This is a new expectation.	
		5.MF.1	Fluently multiply multi-digit whole numbers using various strategies.		Are we removing the expectation for standard algorithm for multiplication? What is 6th's requirement for fluency?	It is important to identify the expectation for the use of standard algorithm.
6th MATH STANDARDS Current Standards		**2025 Proposed Standards**			**Suggestion/ Consideration**	**Rationale**
Ratios and Proportional Relationships 6.RP						
A. Understand ratio concepts and use ratio reasoning to solve problems.						
	3. Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.	6.PR.2	Use ratio and rate reasoning to solve real -world and mathematical problems including making ratio tables, solving unit rate problems, and using percentages.		Oversimplification of the subpoints below 3. Please see suggestions. The specificity matters in student success in future grade.	

	a. Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.					
	b. Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?				MISSING. Add language: "Solve unit rate problems including those involving unit pricing and constant speed."	Students need to solve these specific types of problems, so teachers need standards to expect this inclusion.
	c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.				MISSING. Add language: "Find a percent of a quantity as a rate per 100."	Students need to solve these specific types of problems, so teachers need standards to expect this inclusion.
	d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.	6.M.1	Use ratio reasoning to convert measurement units within the U.S. customary and metric measuring systems.		This is a good change. This says "within" the system, so does that mean that students do not need to convert between the two systems?	QUESTION: We believe that the proposed standards do not ever expect students to convert from one system to another. Is this the intent? This is an important distiction that may not be clear.
The Number System 6. NS						
A. Apply and extend previous understandings of multiplication and division to divide fractions by fractions.						

	1. Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. For example, create a story context for (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (c/d) = ad/bc.) How much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 3/4-cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length 3/4 mi and area 1/2 square mi?	6.NC.7	Know that dividing by a fraction is equivalent to multiplying by its reciprocal (multiplicative inverse).		We appreciate that this specifically calls for students to "multiply by the reciprocal". This inclusion bridges the visual models to algorithm, which is essential to conceptual understanding.	QUESTION: What is the expectation with mixed numbers- where are they found?
		6.NC.8	Divide fractions by fractions.		ADD: by using visual fraction models and equations to represent the problem.	
B. Compute fluently with multi-digit numbers and find common factors and multiples.						
	2. Fluently divide multi-digit numbers using an algorithm including but not limited to the standard algorithm.	6.NC.14	Fluently divide multi- digit numbers using various strategies.		Standard algorithm needs to be called out here as it is the end goal. If you keep it too broad, new teachers will not know the end goal.	
C. Apply and extend previous understands of numbers to the system of rational numbers.						

	5. Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.	6.NC.3	Explain positive and negative integers as being opposite (inverse) values or directions from zero. Also, explain zero as its own opposite.		We like that "inverse" is called out as a specific vocabulary term. The real-world examples are helpful to understanding the expectation. We suggest including them.	
		6.NC.2	Know that the set of rational numbers includes, positive integers, negative integers, zero, fractions, mixed numbers, and decimals.		NEW	
		6.NC.4	Understand the meaning of zero in a real-world context.		Examples to understand this expectation would be helpful.	
	a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., –(–3) = 3, and that 0 is its own opposite.	6.NC.6	Determine the absolute value of a rational number by finding its distance from zero on a number line in real-world situations.		The concept of "opposite of the opposite" seems to be missing?	This is an important conceptual understanding.
	b. Write, interpret, and explain statements of order for rational numbers in real-world contexts.				MISSING. Suggested language: Write, interpret, and explain statements of order for rational numbers in real-world contexts.	This clarification is necessary and will be overlooked without the explicit clarification.

	c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.	6.NC.5	Understand the absolute value of rational numbers to be its distance from zero on the number line.		The term "magnitude" is missing.	
	8. Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.	6.G.6	Find and graph pairs of rational numbers in all four quadrants of the coordinate plane in real-world and mathematical problems.		Does not include "real world".	Ths is important for application.
Expressions and Equations 6.EE						
A. Apply and extend previous understandings of numbers to the system of rational numbers.						
	1. Write and evaluate numerical expressions involving whole-number exponents (e.g. parentheses, brackets, or braces).	6.A.1	Write and evaluate numerical expressions involving whole-number exponents.		Include example of parentheses.	It is important to clearly teach parentheses before their introduction to brackets and braces in 7th-8th Grade.
	6. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.	6.A.2	Read and write expressions in real -world and mathematical problems in which letters represent numbers.		Suggested language: change "letters" to "variables"	"unknown number" is important terminology "variable" is important, accurate terminology
		6.A.9	Understand an equation with two variables to be a statement expressing a relationship		Functions needs to be included in the standard to clarify expectations.	

		6.A.11	Describe the relationship between the dependent and independent variables in an equation using tables and graphs, relating these to the equation.		Describe is a over simplification over analyze. Maybe the word "find"?	
Geometry 6.G						
A. Solve real-world and mathematical problems involved area, surface area, and volume.						
	2. Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas V = lwh and V = Bh where B is the area of the base to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real world and mathematical problems.	6.G.2	Find the volume of right rectangular prisms with fractional edge lengths by tiling and relate it to multiplication .		Is the point of this standard: *How many fractional cubes can fit in a box? or *How much volume does this rectangular prism (with fractional side lengths) contain? The rewording changes the standard's intent.	
Statistics and Probability 6.SP						
A. Develop understanding of statistical variability.						
	1. Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.	**6.SP.1**	Understand statistics to be a branch of mathematics that involves the collection, representation, and analysis of quantitative data.		This rewording lost the meaning of original SP.1 - it needs to include recognizing a statistical question, not just what is statistics.	

	3. Recognize that a measure of center (mean and/or median) for a numerical data set summarizes all of its values with a single number, while a measure of variation (such as mean absolute deviation and/or range) summarizes data points' distances from the mean or each other.	6.SP.5	Distinguish between a measure of center (mean, median, and mode) and measure of variation (range).		*Mean absolute deviation needs to be accounted for somewhere. 7th would be the suggestion. It is not currently able to be found in the drafts of standards at all, but it is necessary.	
B. Summarize and describe distributions						
	4. Display numerical data in plots on a number line, including dot plots, histograms, and box plots	6.SP.3	Represent numberical data on a number line, histogram, and box plot.			
		6.SP.4	Interpret a box plot to answer statistical questions about a data set.		Why is this only box plot?	
	c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.	6.SP.8	Determine which measure of variation (range or interquartile range (IQR) is more appropriate to describe the shape; justify the choice.		"striking deviations" or "patterns" isn't here at all. They use these concepts to analyze data. "absolute deviation" is missing entirely - needs to happen in some grade - preferably 7th	
7th MATH STANDARDS Current Standards		**2025 Pro**	**Standard Description**		**Suggestion/ Consideration**	**Rationale**
Ratios and Proportional Relationships 7.RP						
A. Analyze proportional relationships and use them to solve real-world and mathematical problems.						

	a. Decide whether two quantities are in a proportional relationship. For example, by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.	7.PR.4	Determine whether two quantities are in a proportional relationship using tables, graphs, equations, diagrams, and verbal descriptions.		Insert after "relationship"- "By determining if each have a constant rate of change that starts at (0,0)".	
	b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.	7.PR.2	Determine the unit rate (constant of proportionality) from tables, graphs, equations, diagrams, or verbal descriptions of proportional relationships.		Add in y=kx	???- Giving a specific equation for all educators to follow helps to follow a guaranteed and viable curriculum.
	3. Use proportional relationships to solve multistep ratio and percent problems. For example, simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.	7.PR.3	Use proportional relationships to solve multi-step ratio and percent problems.		MISSING: Add back examples to the end of this standard: For example, simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.	This helps to clarify this expectation.
	3. Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.	7.G.4	Describe the two-dimensional figure that results from slicing a three-dimensional figure including right rectangular prisms, triangular prisms, and cylinders.		ADDED: cylinders and triangular prisms.	Are these in current instruction? Have they been removed from another grade?
7th MATH STANDARDS		oposed St	Standard Description		**Suggestion/ Consideration**	**Rationale**
Ratios and Proportional Relationships 7.RP						
A. Analyze proportional relationships and use them to solve real-world and mathematical problems.						

	a. Decide whether two quantities are in a proportional relationship. For example, by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.	7.PR.4	Determine whether two quantities are in a proportional relationship using tables, graphs, equations, diagrams, and verbal descriptions.		Insert after "relationship"- "By determining if each have a constant rate of change that starts at (0,0)".	Has to start at the origin for it to be proportional. Clarity.
	b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.	7.PR.2	Determine the unit rate (constant of proportionality) from tables, graphs, equations, diagrams, or verbal descriptions of proportional relationships.		Add in y=kx	???- Giving a specific equation for all educators to follow helps to follow a guaranteed and viable curriculum.
	3. Use proportional relationships to solve multistep ratio and percent problems. For example, simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.	7.PR.3	Use proportional relationships to solve multi-step ratio and percent problems.		MISSING: Add back examples to the end of this standard: For example, simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.	This helps to clarify this expectation.
The Number System 7.NS						
A. Apply and extend previous understandings of operations with fractions to add, subtract, multiply and divide rational numbers.						
	1. Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.	7.NC.5	Add and subtract rational numbers; represent those operations on a number line.		Include horizontal and vertical as the standard is currently.	Students really benefit from the vertical number lines. Including this in the standard reminds educators to include this in instruction.
	a. Describe situations in which opposite quantities combine to make 0. For example, if you get paid $5 for babysitting but you owe your friend $5, you have $0.	7.NC.1	Model and describe additive inverse in real-world situations to show opposite quantities combine to make zero.		Good. Maybe include in parentheses "positive and negative" after opposite quantities.	Opposite quantities could be a pretty broad term when reading through this standard.

	b. Understand p + q as the number located a distance |q| from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are v	7.NC.6	Solve multi-step problems with positive and negative rational numbers in real-world and mathematical problems.		Good.	Clarity is good in new proposed standard.
	2. Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.	7.NC.7	Multiply and divide rational numbers in real-world and mathematical problems.		Include types of rational numbers, fractions, decimals, etc..	Without the apply and extend previous understandings, students at different levels or what they were taught previously will have different understandings of what kind of rational number this standard is asking to apply.
	d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.	7.NC.3	Convert a rational number in fraction form to decimal form and recognize that the decimal form of a rational number terminates in zeros or eventually repeats.		This is better than the current.	Better clarity of applying division. Converting is the appropriate term to recognize the value of these rational numbers aren't changing.
Expressions and Equations 7.EE						
A. Use properties of operations to generate equivalent expressions.						
	3. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically.	7.NC.6	Solve multi-step problems with positive and negative rational numbers in real-world and mathematical problems.		Maybe keep the examples of what rational numbers are (whole numbers, fractions, and decimals) for clarification	
	a. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate. For example, if a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50.	7.NC.3	Convert a rational number in fraction form to decimal form and recognize that the decimal form of a rational number terminates in zeros or eventually repeats.		Add in using bar notation for a repeating decimal, "Convert a rational number in fraction form to decimal form by dividing the numerator by the denominator.."	

Geometry 7.G						
A. Draw, construct and describe geometrical figures and describe the relationships between them.		7.G.6	Draw geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.		Suggestion: list examples of geometric shapes we expect students to describe.	This offers both parents, teachers, and students a clear expectation of the required geometric shapes students can describe.
	3. Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.	7.G.4	Describe the two-dimensional figure that results from slicing a three-dimensional figure including right rectangular prisms, triangular prisms, and cylinders.		Suggestion: Add Pyramids to the 3-D figure list.	Are these in current instruction?
B. Solve real-life and mathematical problems involving angle measure, area, surface area and volume.		7.G.3	Use area and circumference formulas of a circle to solve real-world and mathematical problems.		Suggestion: The standard should include the area and circumference formula in the description.	This makes the standard more user friendly to all.
Statistics and Probability 7.SP						
	2. Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.	7.SP.3	Draw conclusions, such as mean, median, mode, and range of data, about a larger population using data from a representative sample.		Suggestion: Draw conclusions about a larger population using data from a good representaive sample by calculating mean, median, mode, and range.	Are we limited to Mean, Median, Mode, and Range or do we need to include others?

	a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs	7.SP.4	Understand a sample space to be the set of all possible outcomes for a situation or experiment.		Good. How should the sample space be recorded?	Above mentions organized lists, tables, tree diagrams are often used. More consistency to this standard if this were to be included.
		7.A.1	Write an equation to express two quantities in terms of the dependent and independent variables, interpret the meaning of the constants and coefficients, and use the equations to solve real-world and mathematical problems.		NEW	
		7.A.5	Describe the relationship between the dependent and independent variables using equations, tables, and graphs, including both proportional and non-proportional relationships.		NEW	
		7.G.1	Identify, describe, and draw elements of circles, including center, radius, and diameter.		NEW	
		7.SP.7	Calculate the probability for a single event by dividing the number of favorable outcomes by the number of total outcomes.		NEW	
		7.SP.8	Determine experimental probabilities in simple experiments and represent as fractions, decimals, and percents.		NEW	
8th MATH STANDARDS		**2025 Pro**	**Standard Description**		**Suggestion/ Consideration**	**Rationale**
The Number System 8. NS						

	2. Use rational approximations of irrational numbers to compare the size of irrational numbers. Locate irrational numbers approximately on a number line diagram, and estimate the value of expressions such as (π^2). For example, by truncating the decimal expansion of $\sqrt{2}$, show that $\sqrt{2}$ is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.	8.NC.1	Understand that a real number is any number that can be represented on a number line.		This needs more example or detail to clarify exactly what is to be taught.	
Expressions and Equations 8.EE						
B. Understand the connections between proportional relationships, lines and linear equations.						
	5. Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.				Add something about comparing proportional relationships represented in different ways back in.	Students will see the information presented in different ways. Tables, graphs, equations, and as a set of ordered pairs. They need to know that no matter how the data is presented, that it is or is not a proportional relationship.

	6. Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.	8.RF.3	Explain how the slope of a line is the same between any two points on a non-vertical or non-horizontal line. Types of slope include: positive, negative, horizontal (zero), and vertical (undefined).		This needs to be connected to back to y=mx+b and on a coordinate plane. ** The slopes are the same also for vertical and horizontal lines. The phrase at the end of the 1st sentence should not be there. **	Students need to be able to connect slope to the slope-intercept equation.
C. Analyze and solve linear equations and pairs of simultaneous linear equations.						
	7. Solve linear equations in one variable.					
	a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers).	8.A.1	Identify linear equations in one variable with one solution, infinitely many solutions, or no solution.		Expand more with steps or detail on combined like terms or distributive properties. Examples would be good.	
Functions, 8.F						
A. Define, evaluate and compare functions.						
	1. Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.	8.RF.4	Understand a function to be an equation or rule that assigns to each input (independent value) exactly one output (dependent value).			
		8.RF.5	Understand the domain as the set of inputs accepted by the function.		Accepted is an odd word choice. Maybe allowed would be better?	

	3. Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line; give examples of functions that are not linear.	8.RF.9	Understand a linear function to be a relationship between two variables with a constant rate of change whose graph is a straight line on the coordinate plane and to have the equation $y = mx + b$.		nolinear functions are missing. There is a great value in comparision of visuals with the linear and nolinear	
B. Use functions to model relationships between quantities.						
	4. Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	8.RF.1	Graph proportional relationships, interpreting the rate of change as the slope of the graph.		The new standard is missing the constructing a function (writing the equation) to model a linear relationship.	This is a major part of this standard. Not just being able to find the parts, but can you take the parts and make the equation for the function.
	5. Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.	8.RF.12	Analyze a graph by describing the functional relationships between two quantities.		The new standard is unclear. We are not sure what exactly they are trying to say.	Is this rereferencing slope? The comparison of the two quantities that are being graphed?
Geometry, 8.G						
A. Understand congruence and similarity using physical models, transparencies or geometry software.						

	1. Verify experimentally the properties of rotations, reflections, and translations.	8.G.11	Identify, draw, and describe the three types of rigid transformations: rotations, reflections, and translations.		Of what? This does not reference polygon? line? etc? It also does address that they are congruent transformations.	Loss of explicit procedural rigor
	2. Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the	8.G.13	Describe a sequence of transformations that moves and aligns one similar shape onto another.		** this should be more specific to rigid transfomations. Then this would be congruent shapes not similar shapes.	
		8.G.10	Understand a rigid transformation to be a change in a shape that generates a congruent shape by preserving distances between vertices.		**** Rigid transformations are not a change in shape. They are a change in location or orientation.	This is incorrect mathematically.
	3. Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.	8.G.11	Identify, draw, and describe the three types of rigid transformations: rotations, reflections, and translations.		Should indicate two-dimensional figures	
	4. Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity	8.G.12	Identify, draw, and describe mathematical dilations as non-rigid transformations that generate a similar shape.		Should indicate two-dimensional figures	
		8.G.9	Understand similar figures to be geometric objects that have the same shape (proportional) but different sizes.		The word proportional should be moved after the word sizes. Understand similar figures to be geometric objects that have the same shape but different sizes (proportional).	
B. Understand and apply the Pythagorean Theorem.						
	6. Explain a proof of the Pythagorean Theorem and its converse.	8.G.6	Know and use the converse of the Pythagorean Theorem to determine if a triangle is a right triangle.		We feel that explaining a proof is imporant. Not all proofs are the standard 2 column proofs from Geometry. This can be done as a proof of rearrangemnt (a great hands on activity), or a visual proof using physical squares on a triangle (aso a great hands on activity).	

C. Solve real-world and mathematical problems involving volume of cylinders, cones and spheres.						
	9. Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.	8.G.1	Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.		Can a universal list of formulas for finding the volumes of the shapes be included, so we are all using the same? What does know mean? Memorized? Be able to use them?	
Statistics and Probability 8.SP						
	A. Investigate patterns of association in bivariate data.					
	1. Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.	8.SP.1	Construct and interpret scatter plots using bivariate data; determine if the data displays a linear or nonlinear pattern and positive, negative, or no association.		** Removed key topics of outliers and clusters in bivariate data	Was this intentional?

	4. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?	8.SP.3	Construct and interpret a relative frequency table.		They have removed reference to both Row Frequency and Column Frequency tables WIthout the exmples it can difficult to know what intrepret means.	
		8.A.3	Analyze and solve one-variable linear inequalities with rational coefficients.		NEW. This is an added expectation.	
ALGEBRA I MATH STANDARDS	**Current Standards**	**2025 Pro**	**Proposed Wording**		**Suggestion/ Consideration**	**Rationale**
Congruence G.CO						
A. Experiment with transformations in the plane.						
	1. State and apply precise definitions of angle, circle, perpendicular, parallel, ray, line segment, and distance based on the undefined notions of point, line, and plane.	G.GF.1	Understand a point to be a zero-dimensional object with location but no length, width, or height.		Group 4-7 like they are in the current standards.	It feels redundant to list them out with their definitions. These seem to be the only terms that are listed with their definition in the standards.
		G.GF.2	Understand a line to be a straight one-dimensional figure that extends infinitely in two opposite directions.			
		G.GF.3	Understand a plane to be a two-dimensional figure that extends infinitely in all directions.			

		G.GF.4	Understand a ray to be a part of a line with one endpoint that continues indefinitely in one direction.			
		G.GF.5	Understand a line segment to be part of a line that is bounded by two distinct end points.			
		G.GF.6	Understand an angle to be a geometric figure formed by two rays (sides) with the same endpoint (vertex).			
		G.GF.7	Understand a circle to be a two-dimensional shape that is perfectly round made up of a set of all points equidistant from a fixed point called the center.			
	10. Prove theorems about triangles. Theorems must include but not limited to: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the mid segment of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.	G. GF.8	Apply theorems about triangles including: the isosceles triangle Theorem and its converse; the triangle midsegment theorem; the proportionality theorem; the triangle inequality heorem and its converse; and the geometric mean theorem.		Take out Geometric mean (this would be a new part of the standard)	I'm not sure what the applicability of geometric mean is. You can use it to relate to similar triangles, but it is a complicated comparison outside of an accelerated classroom
	11. Prove theorems about parallelograms. Theorems must include but not limited to: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.	G. GF.9	Apply theorems about quadrilaterals, including those involving angles, diagonals, and sides to solve problems.		"Apply theorems about quadrilaterals, including but not limited to: opposite sides are congreunt, opposite angles are congreunt, the diagonals of a parallelogram bisect each other."	I like "apply" versus "prove", but I think the more detailed standard from before gives a better picture of what is expected.

	12. Perform geometric constructions with a compass and straightedge. including copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines/segments, constructing a line parallel to a given line through a point not on the line.	G. LA.1	Make formal geometric constructions with a variety of tools and methods, including: congruent segments and angles; segment and angle bisectors; perpendicular lines; and the perpendicular bisector of a line segment.		remove "formal"	What is a formal construction vs a construction?
	1. Verify experimentally and apply the properties of dilations as determined by a center and a scale factor.	G. SC.1	Given two figures, apply the definition of similarity in terms of a dilation to identify similar figures, proportional sides, and corresponding congruent angles.		I believe "scale factor" should still be included to some capacity	scale factor is the building base for similarity and comparing similar figures
	2. Determine whether figures are similar, using the definition of similarity and using similarity transformations.				This standard appears to be missing. We recommend adding it back in.	
		G. SC.4	Explain, using rigid motion transformations, why two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.		Keep this proposed standard. It emphasizes different ideas.	
	5. Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.				This should be kept in with the standards. There is not another similar and it is pretty critical - especially for the ACT.	
Modeling with Geometry G.MG						
	2. Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot). *				Is density relevant for later? Do we want to keep this? This is one that would not be taught if it is not in the standards.	
Algebra II	**Current Standards**	**2025 Pro**	**Proposed Wording**		**Suggestion/ Consideration**	**Rationale**

C. Analyze functions using different representations.						
	e. Graph logarithmic functions, showing intercepts and end behavior.				This standard does not seem to be included in the new standards.	
	f. Graph trigonometric functions (sine and cosine), showing period, midline, and amplitude.	A2.TF.4	Graph trigonometric functions (sine and cosine) showing period, midline, and amplitude.		This seems to be beyond Algebra II.	
B. Model periodic phenomena with trigonometric functions.						
	5. Choose trigonometric functions (sine and cosine) to model periodic phenomena with specified amplitude, frequency, and midline. *	A2.TF.1	Select trigonometric functions that model real-world contexts.		The new standard is much better	Graphing trig functions is more of a precalculus skill
C. Prove and apply trigonometric identities.						
	8. Prove the Pythagorean identity $\sin^2(A) + \cos^2(A) = 1$ and use it to calculate trigonometric ratios.	A2.TF.2	Develop the Pythagorean identity, $\sin2(\theta\theta) + \cos2(\theta\theta) = 1$.		We don't think this is a necessary standard.	Trig identities are more of a precalculus skill
		A2.E.2	Simplify and perform operations with radical expressions with and without variables; rationalizing denominators should include conjugates.		New/expansion	
		A2.AF.7	Explain how restricting the domain of a function allows for the creation of its inverse.		New/expansion	
		A2.LF.2	Multiply a matrix by a scalar.		New/expansion	
		A2.LF.3	Add and subtract matrices.		New/expansion	
		A2.QF.3	Use the discriminant to determine the number and type of solutions of a quadratic equation.		New/expansion	

		A2.EL.2	Interpret the solution of a logarithmic equation as reasonable or unreasonable in context.		New/expansion	
		A2.TF.3	Apply the Pythagorean identity to find the remaining trigonometric functions when given sin ($\theta\theta$), cos ($\theta\theta$), or tan ($\theta\theta$) and the quadrant of the angle.		New/expansion	
		A2.TF.6	Explain how the unit circle can be used to model sine, cosine, tangent, secant, cosecant, and cotangent for all real numbers.		New/expansion	

Watertown Public Comment

Watertown Feedback Re: Proposed Math Standards, November 2025							
Current Standard			Proposed Sta	Proposed Wording		Consideration	Rationale
Kindergarten			K.A.5	When solving word problems, identify the correct operation needed (add or subtract within ten) and solve using object or drawings		Suggested Wording: Solve word problems by identifying the correct operation needed (add or subtract within ten) and solve using objects or drawings.	Our standards work often revolves around the verb, giving direction about what the student is to be able to do.
Kindergarten	K.OA.4	For any number for 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.				Missing: Suggested wording: Describe the relative positions of objects using terms such as above, below, beside, in front of, behind, and next to.	This is a skill that must be explicitly taught, and lays a foundation for future spatial understanding
Grade 1			1.A.9	Given an equation, find an unknown value.		Suggested wording: Given an addition or subtraction equation, find an unknown in any position	Students often focus on the result unknown (the "answer") but need to be able to think flexibly about part/whole relationships and how to solve missing addends, subtrahends, or minuends in addition to the final sum or difference.
Grade 1	1.OA.C.5	Understand counting on as addition and counting back as subtraction e.g. 5, (6,7,8) means 5+3 and 5, (4,3,2) means 5-3				MISSING. Suggested additional standard: Understand counting on as addition and counting back as subtraction	It is important to explicitly understand the meaning of addition and subtraction concepts.
Grade 1			1.A.3	Solve addition and subtraction word problems within 20. Including problems with 3 whole addends.		Needs comma instead of period: "Solve addition and subtraction word problems within 20, including problems with 3 whole addends."	grammatical
Grade 1			1.N.5	Represent two-digit numbers, (Drawings, ten frams, base ten, blocks, place value chart, etc)		Suggested addition: Represent two-digit numbers. (Drawings, ten-frames, connecting cubes, base-ten blocks, place value chart, etc.)	Connecting cubes are more developmentally appropriate for first grades. They need to experience the building and breaking apart of numbers, which is not possible with base-ten blocks, This is a progression of manipulatives.
Grade 1			1.A.6	Subtract a two digit and on digit number (with or without borrowing) using multiple strategies that reflect an understanding of place value.		Suggest revisions: Change the word "borrowing" to "regrouping."	Regrouping is more accurate term, and matches the language of 1.A.5. Regrouping help students understand that the same number can be arranged (re-grouped) in various ways.
Grade 1	1.MD.B.5	Identify nickels and understand that five pennies can be though of a nickel. Identify dimes and understand ten pennies can be thought of as a dime. Count the alue of a set of coins comprised of pennies, nickels, and dimes.	1.M.5	Find the value of combinations of U.S. coins up to one dollar using pennies and dimes and represent with cent symbol.		MISSING. New standard removes the expectation of nickel from this grade level. Suggested wording: Find the value of combinations of U.S. coins up to one dollar using pennies, nickels, and dimes and represent with cent symbol	Students in grade 1 will count by 1, 5, and 10. We have been including collections of coins including these three coins.

Grade 1	1.G.A.2	Compose and identify regular and irregular two-dimensinal shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) and compose three-dimensiona shapes (cubes, spheres, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. (Students do not need to master formal names such as "right rectangular prism.")	1.G.3	Compose and identify regular and irregular two-dimensional shapes		MISSING. The new standard doesn't spell out which specific shapes to include. Suggested addition: Compose and identify regular and irregular two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles). ALSO MISSING: no mention of three-dimensional shapes for first grade. Is this an intentional exclusion?	This adds clarity for teachers, and provides consistent instruction so students progress with expected knowledge.
Grade 1	1.G.A.3	Partition circles and rectangles into two and four equal shares, describing the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these expamples that decomposing into more equal shares create smaller shares.	1.G.6	Partition circles and rectanlges into two or four equal parts and describe the parts using words halves and fourths.		MISSING concept: This standard should include ""using the words halves, fourths, and quarters."" ALSO MISSING: The last fundamental part of this concept is missing: more equal shares creates smaller shares.	Quarter is another way to express fourths, and lays a foundation for understanding money.
Grade 2			2.A.2	Solves addition and subtraction problems within 100, using objects, drawings, open number lines, or equations with a symbol for the unknown number.		Suggested addition: Solve addition and subtraction problems within 100, using objects, drawings, open number lines, or equations with a symbol for the unknown number in any position.	Students need to be able think flexibly about part/whole relationships and be able to solve any unknown.
Grade 2	2.OA.C.3	Determine whether a group of objects (up to 20) has an odd or even numbers of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.	2.N.3	Counting forward and backwards by 2's to 50 and determine whether the number is odd or even.		Separate skills: Count forward and backwards by 2's to 50. NEW, suggested standard: Determine whether a number is odd or even (e.g. by pairing objects, counting members by 2's, or it can be split into two equal groups.)	Students need to understand the concept of an even number as being the sum of two equal addends, which is more than just pairing the items. This unerstanding of odd and even is intricately related to the understanding of doubling and halving the number.
Grade 2	2.OA.C.4	Use addition to find the total number of objects arranged in rectangular arrays with up to 5 ros and up to 5 columns; write an equation to express the total as a sum of equal addends	2.A.6	Given a rectangular array, use repreated addtion to find the total number of objects		The old standard limited to 5x5, which clarified the depth of the understanding. Is that still expected. Is writing an equation an imporant expectation	Possible wording: Given a rectangular array (up to 5x5), use repeated addition to find the total number of objects; write an addition equation to express the total.
Grade 2			2.MF.1	Fluently add within 100		Add: Fluently add within 100, using various strategies.	The third grade standard is more generous than the second grade expectation, by including "using various strategies. Developmentally, fluency would include multiple ways to find an answer, which develops into recall.

Grade 2			2.MF.2	Fluently subtrat within 100.		Add: Fluently subtract within100, using various strategies.	The third grade standard is more generous than the second grade expectation, by including "using various strategies. Developmentally, fluency would include multiple ways to find an answer, which develops into recall.
Grade 2			2.M.1	Explore length of an object by lining up inch-sixed manipulative with no gaps or overlaps		Missing "s" on manipulatives.	grammatical
Grade 2			2.M.4	Explore length of an object by lining up centimeter and decimeter-sized manipulative with no gaps or overlaps		Missing "s" on manipulatives.	grammatical
Grade 2			2.M.3	Measure the length of objects using rulers and yardsticks		MISSING: Measure the length of objects using rulers, yardsticks, meter sticks, and measuring tapes.	These tools are consistent with the expectations outlined in other measreument standards. A meter stick is not the same as a yardstick.
Grade 2	2.MD.B.6	Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, …, and represent whole-number sums and differences within 100 on a number line diagram				MISSING. Suggested addition: Use number line diagrams to represent whole numbers as lengths from 0, as well as whole-number sums and difference within 100.	It is important to understand the concept of a number line diagram. This is foundational to equivalent fraction understanding in later grades.
Grade 2			2.M.8	Solve problems involving time in 5-minute intervals.		NEW. This helps to clarigy expectations of telling-time to include situational problems, this is a good addition.	
Grade 2			2.M.9	Find the value of combinations of U.S. coins up to $1 and bills up to $100.		EXPANDED. This is a good addition.	
Grade 2						MISSING. There is no expectation of word problems or real-world problems involving money. Possibly: Identify and count coins and bills apply that understanding to solve word problems	We need students to be able to not only count collections of coins, but also apply that knowledge to solve problems.
Grade 2	2.MD.C.8.b	Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using dollar and cent symbols appropriately				MISSING. Need to include understanding of dollar sign/decimal point. Suggested addition: Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using dollar sign and cent symbols appropriately	Students in grade two will see and read money amounts expressed in both formats. This is a beginning skill for decimal work. Their word problems include dollar signs and cent signs. We need to address misconceptions about this notation early.
Grade 2	2.G.A.2	Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.				Missing. Suggested addition: Partition a rectangle into rows and columns of same-size squares and count to find the total number of them	Understanding partitioning of shapes (rectangles) is building block skill to understanding multiplication and division, as well as area and fractions. Fundamentally, students need to understand that the squares must be the same size, and be able to count a total number of squars.

Grade 3			3.MF.1	Fluently use multiplication strategies to mentally solve multiplication facts through 12		Expaned through 12	
~~Grade 3~~			~~3.MF.3~~	~~Mentally solve multiplication facts within 100 with the corresponding facts.~~		~~This fluency standard is not clear. Students are already expected to be fluent with their mulitplication facts. It likely expects some division proficiency, but the wording is confusing. Is the goal to use/relate division facts to corresponding multiplication facts, within the same fact family?~~	~~It is challenging to asses a student's mental understaning.~~
Grade 3			3.MF.2	Recall from memory multiplication facts (0-12) to include 0, 1, 2, 5, 10.		The clarification about benchmark facts of 0, 1, 2, 5, 10 is appreciated.	
Grade 3	3.OS.D.8	Solve two-step word problems using the four operations using equations with a letter standing for the unknown quantity. Assess the reasonableness of answer using mental computation and estimation strategies including rounding. (This standard is limited to problems posed with whole number answers; students should know how to perform operations in the conventional order when there are no parentheses to specify a particular order [Order of Operations]).	3.A.9	Solve two-step word problems using addition, subtraction, multiplication, and dvision using an equation with a symbol for the unknown quantity.		MISSING. This does not include evaluating an answer for reasonableness, rounding, estimating. Suggested wording to add: Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	While rounding is specifically taught as a procedural skill in 3.N.1, the ability to evaluate the reasonableness of an answer is an important skill that needs to be developed. It is greater than being able to round a given number.
Grade 3			3.N.2	Read and write whole numbers up to 10,000 using standard form, word form, and expanded form.		NEW. This is a good addition	
Grade 3			3.F.1	Understand a fraction as a part of a whole		Is this necessary?	This standard is exactly repeated in the beginning of M.F.4
Grade 3			3.F.4	Understand fractions as part ofa whole, as numbers on a number line, and as multiples of unit fractions		?? The old standards have lots of subpoints and explanation of the boundaries of this skill. Should it include specific number line boundaries, to clarify learning for grade 3? There seams to be a lot of understaning that is oversimplified from old to new.	
Grade 3			3.F.5	Understand two fractions are equivalent (equal) if they represent the same quantity, or the same point on a number line		too broad? Suggestion to add: (fractions with denominators 2, 3, 4, 6, and 8).	Grade 3 expectations in this domain have been limited to fractions with denominators 2, 3, 4, 6, and 8, which is important to clarify.
Grade 3			3.M.17	Create tables, bar graphs, circle graphs, and line graphs to represent a given set of data		Missing: this standard does not clarify "scaled" picture graph or bar graph. Suggestion: Create scaled tables, bar graphs, circle graphs, and line graphs to represent a given set of data.	Scale is an important consideration when reading data, and needs to be to emphasized in data analysis.

Grade 3			3.M.18	Interpret and analyze one and two step data problems with tables, bar graphs, circle graphs, and line graphs.		Missing: this standard does not clarify "scaled" picture graph or bar graph. Suggestion: Interpret and analyze one and two step data problems with scaled tables, bar graphs, circle graphs, and line graphs.	Scale is an important consideration when reading data, and needs to be to emphasized in data analysis.
Grade 3	3.MD.B.4	Generate measurement data by measuing lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horixontal scale is marked off in appropriate units-whole numbers, halves, or quarters				MISSING: Measure lengths to halves and fourths of an inch. Suggested additional standard: Measure lengths using rulers to halves and fourths of an inch.	It is important to scaffold this skill explicitly. Developmentally, students need to have practice with gradually increasing difficulty, so it needs to be clarified for teaching.
Grade 3	3.MD.B.4	Generate measurement data by measuing lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horixontal scale is marked off in appropriate units-whole numbers, halves, or quarters				MISSING: Making line plots. Suggested additional standards: Make a line plot using a horizontal scale marked off in whole numbers, halves, or quarters.	2nd and 4th grade both have line plot expectations. Second grade is supposed to read them, and fourth is supposed to display and solve problems using 1/2, 1/4, 1/8. Third grade should bridge these expectations.
Grade 3			3.M.7	Use tiling to represent the distributive property of mulitplication		Add: Use tiling with area models to represent the distributive property of multiplication.	This adds clarity to the expectation. This is the connection to the distributive property of multiplication.
Grade 3	3.MD.C.8	Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.	3.M.10	Solve real-world and mathematical problems involving perimeter of polygon.		Old standard included expectation to find the unknown side length, but new standards do not have it in either. New standard removed all examples of the real world types of problems to include. Suggestion: Solve real world problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unkown side length, and creating rectanlges with the same perimeter and different areas or with the same area and different perimeters.	The missing side lenths need to explicitly be included in 3rd or 4th grade. This sets them up for algebraic understanding. The types of perimeter problems need to be explicitly provided to make sure teachers now the depth of th understanding to expect at this grade level.
Grade 3	3.MD.C.9	Determine the value of a collection of money using dollar sign and decimal point appropriately. Understand that the digits to the right of the decimal represent parts of a whole dollar	3.M.16	Determine the value of a collection of U. S. coins and dollars up to $100.00 using decimal notation		Suggestion: Change "dollars" to bills.	Not all bills are one-dollar. This language would be more accurate.
Grade 4			3.A.1	Use multiplication equation as a comparison		Suggestion: Represent a comparison as a multiplication equation.	This more accurately expresses the mathematical expectations.
Grade 4			3.MF.1	Recall from memory multiplication facts (0-12).		Suggestion: separate into 2 standards. Recall from memory multiplication facts (0-12). Recall from memory division facts (0-12).	This alignes with how the expectations are included at all other levels. These are two separate skills, and division is new to this grade level, so should have its own emphasis.

Grade 4	4.OA.A.3	Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be intepreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	4.A.6	Solve multstep word problems using addition, subtraction, multiplication, and division, with whole numbers and having whole number answers, including problems in which remainders must be interpreted.		MISSING. This does not include evaluating an answer for reasonableness, rounding, estimating. Suggested wording to add: Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	While round is specifically taught as a procedural skill in 4.N.2, the ability to evaluate the reasonableness of an answer is an important skill that needs to be developed. It is greater than being able to round a given number.
Grade 4	4.NBT.A.2.b	Compare two multi-digit numbers based on values of the digits in each place, using <, >, and = symbols to record the results of comparisons				MISSING. Suggested addition: Compare two multi-digit numbers based on values of the digits in each place, using <, >, and = symbols.	This skill hasn't been addressed since second grade (tens and ones). Foundational understanding of place value is essential for fractions and decimals.
Grade 4			4.MF.2	Fluently add and subtract multi-digit whole numbers using various strategies.		This is a direct repeat of 3rd grade standard, Should 4th grade remove "using various strategies?"	It is challenging to understand the boundaries of each grade level expectations without differentiation in standards
Grade 4			4.A.5	Interpret a remainder of a one-step division problem		NEW. This is an important addition-thank you	
Grade 4			4.A.13	Evaluate a numerical expression including addition, subtraction, multiplication, and division using the order of operations of whole numbers-without parentheses and exponenets		NEW. Old 3rd grade standards had reference to Order of Operations, but new ones do not Is this an intentional move of this expectation?	
Grade 4	4.NF.B.3.d	Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.				MISSING. Suggestion: add back in this standard	Students need to be able to reference real world problems and use visual models.
Grade 4	4.NF.C.6	Read and write decimal notation for fractions with denominators 10 or 100. Locate these decimals on a number line.	4.F.12	Apply decimal notation for fractions with denominator 10 or 100.		MISSING. The new standard removes the expectation of finding decimals on a number line. Suggestions: Apply decimal notation for fractions with denominators 10 or 100; locate these decimals on a number line.	Understand the progression of decimals and relative values is a foundational understanding.
Grade 4			4.M.1	Measure length, weight, mass, and capacity using U.S. customary and metric systems of units.		MISSING. New stnadard does not explicity include which units to address. Suggestion: add to the end: (including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec.)	Without clear expectations, teacher may overlook specific units that will be expected at other grades. This clarifies and levels the playing field for all students to be successful.
Grade 4			4.M.2	Express larger units in terms of smaller units through conversion		This standard needs to include "within a single system of measurement."	Students are not expected to convert from customary to metric, or metric to customary. This had been a source of disagreement among our staff, but looking to the standards helps clarify the expectation. We need this explicitly stated, if this is the intention.

Grad 4			4.G.2	Measure angles, to the nearest degree, using a protractor and identify, describe, and draw right, acute, obtuse, and straight angles.		Consider: "Measure angles in degrees using a protractor and understand a degree as 1/360 of a circle; draw angles of specific measure."	This was improved from the first draft but still is missing the "draw" skill. Asking students to draw specific angles has been an expectation that is not included.
Grade 4			4.G.3	Identify, describe, and draw equilateral, scalene, right, acute, and obtuse angles and triangles.		This is inclusive of one of the skills proposed in 4.G.2. Suggestion: leave this standard as is, but revise 4.G.2	
			4.G.4	Recognize when angles are broken apart the sum of the parts is equal to the angle measure of the whole.		Vocab-additive angle should be included.	This vocabulary provides specificity and promotes the academic langauge of mathematics.
			4.G.8	Identify and describe various quadrilaterals by their properties of parallel and perpendicular lines.		List quadrilaterals that should be identified: square, rectangle, trapezoid, rhombus.	This provides clarity and consistency, to make sure all students are expected to learn the same information.
			4.F.7	Understand a fraction a/b is a multiple of 1/b		Including an example would be helpful	
			4.F.8	Understand a multiple of a/b is a fraction of 1/b		Including an example would be helpful	

November 7, 2025

To Whom It May Concern:

As a high school math teacher with over fifteen years of classroom experience, I am writing to express my support of the adoption of the revised South Dakota Mathematics Standards. These updated standards were developed by a diverse and knowledgeable team of educators and content experts who worked collaboratively to create a set of expectations that are clear, concise, and practical for everyday classroom use. The well-rounded team prioritized clarity, practicality, and rigor throughout the revision process.

The new set of standards provides a framework that is far more user-friendly for teachers, without compromising academic rigor. They promote deep mathematical understanding and problem-solving, enabling students to apply their knowledge to real-world situations. As an educator, I appreciate that these standards encourage meaningful instruction and conceptual mastery rather than the pressure to cover excessive material. By focusing on practical application and critical thinking, the revised standards align closely with what we strive to achieve in our classrooms: preparing students not only to succeed academically but to think analytically and solve problems with confidence. These standards make it easier for teachers to focus on what truly matters: helping students build a lasting understanding of mathematics that connects to their daily lives and future goals.

The new South Dakota Mathematics Standards align closely with modern instructional practices and current best practices in education. They are written with consistent, precise language that promotes a clear understanding of expectations across all grade levels. This consistency supports stronger communication among teachers, students, and parents, ensuring everyone works toward the same learning goals. Additionally, the standards provide flexibility in implementation, allowing teachers to select strategies, materials, and instructional approaches that best meet the needs of their students. This balance of clarity, consistency, and professional autonomy empowers educators to deliver high-quality, engaging math instruction that reflects both state expectations and local classroom realities.

I believe the revised standards represent a significant and positive step forward for education in South Dakota. They provide teachers with a solid, manageable foundation that supports high-quality instruction while maintaining the rigor necessary for student growth and achievement. They are designed to make teaching more intentional, learning more connected, and mathematics more accessible and applicable for all.

For these reasons, I recommend the adoption of the new South Dakota Mathematics Standards and commend the work done to get to this point.

Sincerely,

Megan Wilson

Megan Wilson
High School Math Teacher
Sanborn Central School District

Dear South Dakota Board of Education,

As an educator with over 30 years of experience teaching math at a variety of grade levels from Kindergarten through post-secondary, I would like to caution the South Dakota Board of Education against approving a set of K-12 Mathematics standards that focuses on a narrow range of instructional approaches (i.e., exclusive use of explicit instruction and primary emphasis on procedural fluency). I believe teachers, parents and the general public want students to have both conceptual understanding and procedural fluency. We want them to apply mathematics to solve novel problems that call for number sense, conceptual place value, efficiency and flexibility. We want our math instruction in South Dakota to be based on valid and reliable research and to meet the needs of South Dakota students. We want our students to have limitless opportunities beyond our K-12 system and not be constrained by a narrow form of instruction.

I would ask you to review the position paper on "Strengthening Research-informed Decision Making for Mathematics Education" published by the national math leadership organization, the National Council for Supervisors of Mathematics.

https://www.mathedleadership.org/wp-content/uploads/2025/12/Position-Paper-2025-Strengthening-Research-informed-Decision-REV12-25.pdf

Key findings from the NCSM review of research include:

- While explicit instruction in mathematics can play a role in mathematics instruction, it is far from comprehensive considering the full landscape of evidence-based pedagogical approaches.
- Inquiry-based mathematics is not an unassisted discovery of mathematics concepts and procedures. It is a guided approach in which teachers provide structure and support in well-designed instructional activities.
- As an emerging field, an exclusive Science of Math approach has not had sufficient research across populations, age groups and contexts for policy makers to rely solely on this approach to the exclusion of all others.

I would encourage you to take a critical look at the proposed changes to the SD K-12 Math Standards and to make sure that South Dakota students can learn to think for themselves, to problem solve and to see the joy and beauty of mathematics. Please make sure that there is room for both conceptual understanding and procedural fluency and that students are given opportunities to make sense of mathematics for themselves and to use a variety of problem-solving strategies.

Sincerely,
Kim Webber
Mathematics Educator
Awardee, Presidential Award for Excellence in Mathematics and Science Teaching

Hello,

I was a member of the 2025 math standards revision committee but volunteered to be removed from the process. I am a 5th grade math teacher with 28 years of teaching experience and am National Board certified in Early Adolescence Mathematics. I have concerns about the proposed standards and the process that has been taken to revise them. It would be my recommendation to keep the 2018 standards instead of adopting the newly proposed standards due to oversimplification.

Much of the mathematical precision and intent from the 2018 standards has been lost in an effort to make the standards "easier for parents to read." Teachers are trained professionals who understand and can interpret the technical language of the standards, especially with the support of the unpacked standards documents. By simplifying them so much, the standards lost their clarity and rigor. A more effective approach would have been to create a separate, parent-friendly version, while maintaining precise mathematical language for the official teacher standards, just as the medical field maintains professional standards and protocols written in technical language for doctors, not patients.

It is concerning that an advisory committee initially developed a set of standards, only for the standards revision committee to be tasked with revising that separate version. I was not a member of the initial advisory committee and was added later to the standards revision committee. The process should have been revising the 2018 standards directly. As a result, much valuable content and intent have been lost along the way. I was also unaware that the proposed standards were largely developed from a source written by an assistant professor at Hillsdale College. This information was not disclosed to our committee during our work, aside from the mention of the Archimedes standards. Additionally, I did not realize that the state standards used for comparison were from states performing below South Dakota.

This entire process has been frustrating. Having never served on a standards revision committee before, I expected that our work would focus on updating the 2018 standards, not rewriting and revising an entirely new set. I also anticipated that the process would take multiple days, ideally three or four, to allow for thorough review and collaboration. Instead, we had only one day of in-person work, which was insufficient to give the standards a fair and careful examination. Also, our team did not have a third-grade teacher on it to provide input to the 3rd grade standards.

Another significant concern was the lack of meaningful discussion around vertical alignment. An email was sent, asking us to review the standards for vertical alignment. Given the timing at the start of the school year and the one-week turnaround, there was no realistic opportunity for deep review or any discussion. I strongly believe that more in-person collaboration was needed. The email-only feedback process was one-sided, with no true dialogue or opportunity for professional discussion. When I eventually received the proposed standards, it was not through the committee but via an email from my curriculum director. When I have submitted feedback through email multiple times, it has all been individual feedback with no discussion from the committee or being able to see other committee members' feedback and no response once it was submitted.

While there have been some changes that have been made, from the October proposed standards to the current proposed standards (Feb 2026) that makes them better, they are still very simple in the language which makes it very difficult to know at what level they will be assessed.

In the proposed standard 5.G.14, the last part of the standard should read "and the y-coordinate in an ***ordered*** pair…"

I feel that many of the K-5 Domain Names have been simplified too much but are somewhat better now that the "Arithmetic" domain has been taken out from the previously proposed standards. The 2018 standards included a *Measurement and Data* strand, while the newly proposed standards have changed this to simply *Measurement.* The original domains were clearer, although I do like the newly added *Mathematical Fluency* domain.

For example:
Number and Operations in Base Ten > Numbers
Operations and Algebraic Thinking (many standards that were in the Number & Operation in Base Ten have been moved into this domain)
Number and Operations – Fractions > Fractions
Measurement and Data > Measurement
Geometry
Newly added: Mathematical Fluency

I cannot support the proposed standards or the revision process that produced them. I am not comfortable having my name listed as part of the revision committee for this work at this point, unless some more significant changes are made to make them more like the 2018 standards. Statements have been made suggesting that these proposed standards will lead to improved state test results, but in reality, test scores will not improve simply by changing the standards. I believe that improved progress will come from revising the way those standards are assessed.

Sincerely,

Ann Noyes