

Idaho Challenge Standards Review - Mathematics

Standards or Mathematical Practices	Description	New Grade level suggestion	New Description Please explain how you would break up the standard:	Comments	small group recommendation	small group rationale	final recommendation	final rationale
Mathematical Practice 1	Make sense of problems and persevere in solving them.			Persevering in problem solving is very hard to measure, especially with a standardized test.	No actionable recommendation made.	The comment refers to standard one from the Standards for Mathematical Practice within the CCSSM. It is our understanding this is directly assessed through the Claim Four questions of the ISAT 2.0. In addition, this could be assessed at the classroom level through mathematical tasks found online and through released SBAC items.	No actionable recommendation made.	The comment refers to standard one from the Standards for Mathematical Practice within the CCSSM. It is our understanding this is directly assessed through the Claim Four questions of the ISAT 2.0. In addition, this could be assessed at the classroom level through mathematical tasks found online and through released SBAC items.
Mathematical Practice 2	Reason abstractly and quantitatively.			Mathematics, though there are several methods of computing and all kids learn a little different, so lets show the different ways, explain how each works and let the kids compute. Math is one subject that is black and white. there is no gray it is right or wrong no matter how you come up with the answer, as long a you can explain the process you took to get the answer.	No actionable recommendation made.	Mathematical Practice 2: 1 <sup>st</sup> comment is not actionable. The 2 <sup>nd</sup> comment (high school algebra grade level suggestion) that cites Forbes article forgets to take into account that each mathematical practice looks different at different grades. Numbers for younger grades are in and of themselves, abstract. The 3 <sup>rd</sup> comment: A recommendation we would make would be to look at the unpacking/elaboration for more information about implementing the standard. The Elaborations of the Practice Standards document might need to be posted to the State Website in order to create examples of how this practice may be developed at a given grade level ( <a href="http://commoncoretools.me/2014/02/12/k-5-elaborations-of-the-practice-standards/">http://commoncoretools.me/2014/02/12/k-5-elaborations-of-the-practice-standards/</a> ).	No actionable recommendation made.	Mathematical Practice 2: 1 <sup>st</sup> comment is not actionable. The 2 <sup>nd</sup> comment (high school algebra grade level suggestion) that cites Forbes article forgets to take into account that each mathematical practice looks different at different grades. Numbers for younger grades are in and of themselves, abstract. The 3 <sup>rd</sup> comment: A recommendation we would make would be to look at the unpacking/elaboration for more information about implementing the standard. The Elaborations of the Practice Standards document might need to be posted to the State Website in order to create examples of how this practice may be developed at a given grade level ( <a href="http://commoncoretools.me/2014/02/12/k-5-elaborations-of-the-practice-standards/">http://commoncoretools.me/2014/02/12/k-5-elaborations-of-the-practice-standards/</a> ).

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Mathematical Practice 2	Reason abstractly and quantitatively.	High School - Algebra		Not developmentally appropriate for 8- and 9-year-olds. <a href="http://www.forbes.com/sites/alicegwaltton/2014/10/23/the-science-of-the-common-core-experts-weigh-in-on-its-developmental-appropriateness/">http://www.forbes.com/sites/alicegwaltton/2014/10/23/the-science-of-the-common-core-experts-weigh-in-on-its-developmental-appropriateness/</a>	No actionable recommendation made.	Mathematical Practice 2: 1 <sup>st</sup> comment is not actionable. The 2 <sup>nd</sup> comment (high school algebra grade level suggestion) that cites Forbes article forgets to take into account that each mathematical practice looks different at different grades. Numbers for younger grades are in and of themselves, abstract. The 3 <sup>rd</sup> comment: A recommendation we would make would be to look at the unpacking/elaboration for more information about implementing the standard. The Elaborations of the Practice Standards document might need to be posted to the State Website in order to create examples of how this practice may be developed at a given grade level ( <a href="http://commoncoretools.me/2014/02/12/k-5-elaborations-of-the-practice-standards/">http://commoncoretools.me/2014/02/12/k-5-elaborations-of-the-practice-standards/</a> ).	No actionable recommendation made.	Mathematical Practice 2: 1 <sup>st</sup> comment is not actionable. The 2 <sup>nd</sup> comment (high school algebra grade level suggestion) that cites Forbes article forgets to take into account that each mathematical practice looks different at different grades. Numbers for younger grades are in and of themselves, abstract. The 3 <sup>rd</sup> comment: A recommendation we would make would be to look at the unpacking/elaboration for more information about implementing the standard. The Elaborations of the Practice Standards document might need to be posted to the State Website in order to create examples of how this practice may be developed at a given grade level ( <a href="http://commoncoretools.me/2014/02/12/k-5-elaborations-of-the-practice-standards/">http://commoncoretools.me/2014/02/12/k-5-elaborations-of-the-practice-standards/</a> ).
Mathematical Practice 2	Reason abstractly and quantitatively.			I agree with the standard; however, I think it would be beneficial to explain the concepts of contextualization and decontextualization more clearly (perhaps with examples).	No actionable recommendation made.	Mathematical Practice 2: 1 <sup>st</sup> comment is not actionable. The 2 <sup>nd</sup> comment (high school algebra grade level suggestion) that cites Forbes article forgets to take into account that each mathematical practice looks different at different grades. Numbers for younger grades are in and of themselves, abstract. The 3 <sup>rd</sup> comment: A recommendation we would make would be to look at the unpacking/elaboration for more information about implementing the standard. The Elaborations of the Practice Standards document might need to be posted to the State Website in order to create examples of how this practice may be developed at a given grade level ( <a href="http://commoncoretools.me/2014/02/12/k-5-elaborations-of-the-practice-standards/">http://commoncoretools.me/2014/02/12/k-5-elaborations-of-the-practice-standards/</a> ).	No actionable recommendation made.	Mathematical Practice 2: 1 <sup>st</sup> comment is not actionable. The 2 <sup>nd</sup> comment (high school algebra grade level suggestion) that cites Forbes article forgets to take into account that each mathematical practice looks different at different grades. Numbers for younger grades are in and of themselves, abstract. The 3 <sup>rd</sup> comment: A recommendation we would make would be to look at the unpacking/elaboration for more information about implementing the standard. The Elaborations of the Practice Standards document might need to be posted to the State Website in order to create examples of how this practice may be developed at a given grade level ( <a href="http://commoncoretools.me/2014/02/12/k-5-elaborations-of-the-practice-standards/">http://commoncoretools.me/2014/02/12/k-5-elaborations-of-the-practice-standards/</a> ).

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Mathematical Practice 2	Reason abstractly and quantitatively.			include the phrase number sense or make sense of numbers to explain quantitative reasoning	No actionable recommendation made.	Mathematical Practice 2: 1 <sup>st</sup> comment is not actionable. The 2 <sup>nd</sup> comment (high school algebra grade level suggestion) that cites Forbes article forgets to take into account that each mathematical practice looks different at different grades. Numbers for younger grades are in and of themselves, abstract. The 3 <sup>rd</sup> comment: A recommendation we would make would be to look at the unpacking/elaboration for more information about implementing the standard. The Elaborations of the Practice Standards document might need to be posted to the State Website in order to create examples of how this practice may be developed at a given grade level ( <a href="http://commoncoretools.me/2014/02/12/k-5-elaborations-of-the-practice-standards/">http://commoncoretools.me/2014/02/12/k-5-elaborations-of-the-practice-standards/</a> ).	No actionable recommendation made.	Mathematical Practice 2: 1 <sup>st</sup> comment is not actionable. The 2 <sup>nd</sup> comment (high school algebra grade level suggestion) that cites Forbes article forgets to take into account that each mathematical practice looks different at different grades. Numbers for younger grades are in and of themselves, abstract. The 3 <sup>rd</sup> comment: A recommendation we would make would be to look at the unpacking/elaboration for more information about implementing the standard. The Elaborations of the Practice Standards document might need to be posted to the State Website in order to create examples of how this practice may be developed at a given grade level ( <a href="http://commoncoretools.me/2014/02/12/k-5-elaborations-of-the-practice-standards/">http://commoncoretools.me/2014/02/12/k-5-elaborations-of-the-practice-standards/</a> ).
Mathematical Practice 6	Attend to precision.			might be helpful to clarify that verbal explanations of mathematical processes can be messy. Students at all levels can use graphic explanations to complement their "carefully formulated explanations."	No actionable recommendation made.	Per the Standards for Mathematical Practices, many of the issues raised within the comment can be mitigated through further emphasis on models (visual, written, or verbal) that students use to communicate their thinking. The Mathematics Practices are not used in isolation.	No actionable recommendation made.	Per Mathematical Practice six, many of the issues raised within the comment can be mitigated through further emphasis on models students use to communicate their thinking.
<b>KINDERGARTEN</b>								
CCSS.Math.Content.K.CC.A.3	Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).	Grade 2			No actionable recommendation made.	CCSS.Math.Content.K.CC.A.3: Moving it to grade 2 is not valid. The foundational skills need to be addressed at the Kindergarten level. Most teachers do go above and beyond if the student is ready. The standards are a minimum recommendation for instruction. No actionable recommendation made.	No actionable recommendation made.	CCSS.Math.Content.K.CC.A.3: Moving it to grade 2 is not valid. The foundational skills need to be addressed at the Kindergarten level. Most teachers do go above and beyond if the student is ready. The standards are a minimum recommendation for instruction. No actionable recommendation made.

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CCSS.Math.Content.K.CC.A.3	Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).		Write numbers from 0 to 100. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).	Calendar goes to 31 day. Children grandparents birthday will likely to be larger than 20, and may be in 50's. The building number on streets is large. Students need to write and recognize large numbers. 20 is too low. 100 is proper.	No actionable recommendation made.	CCSS.Math.Content.K.CC.A.3: Moving it to grade 2 is not valid. The foundational skills need to be addressed at the Kindergarten level. Most teachers do go above and beyond if the student is ready. The standards are a minimum recommendation for instruction. No actionable recommendation made.	No actionable recommendation made.	CCSS.Math.Content.K.CC.A.3: Moving it to grade 2 is not valid. The foundational skills need to be addressed at the Kindergarten level. Most teachers do go above and beyond if the student is ready. The standards are a minimum recommendation for instruction. No actionable recommendation made.
CCSS.Math.Content.K.CC.B.5	Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.		Count to answer "how many?" questions about as many as 100 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-100, count out that many objects.	Counting to 20 is too low. Calendar has 31 days. Students in the classroom are more than 20. Number of cars in parking lot is more than 20. 100 is appropriate number for KG.	No actionable recommendation made.	These foundational skills need to be addressed at the Kindergarten level. Most teachers do go above and beyond if the student is ready. The standards are a minimum recommendation for instruction. No actionable recommendation made.	No actionable recommendation made.	These foundational skills need to be addressed at the Kindergarten level. Most teachers do go above and beyond if the student is ready. The standards are a minimum recommendation for instruction. No actionable recommendation made.
CCSS.Math.Content.K.CC.C.7	Compare two numbers between 1 and 10 presented as written numerals.		Compare two numbers between 1 and 100 presented as written numerals.	Children will distribute candies in Halloween. It will be more than 10. When learning a large number with 100, money will be easy to learn. 100 cents = 1 dollar.	No actionable recommendation made.	The foundational skills of comparing two numbers between 1 and 10 need to be addressed at the Kindergarten level. Most teachers do go above and beyond if the student is ready. The standards are a minimum recommendation for instruction. No actionable recommendation made.	No actionable recommendation made.	The foundational skills of comparing two numbers between 1 and 10 need to be addressed at the Kindergarten level. Most teachers do go above and beyond if the student is ready. The standards are a minimum recommendation for instruction. No actionable recommendation made.
CCSS.Math.Content.K.OA.A.2	Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.		Solve addition and subtraction number problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	Word problem is the goal. Students are learning how to read. At this stage, late starters will be punished. Let students recognize numbers first in the math. Words will be in first grade. Get abstract thinking first.	No actionable recommendation made.	Word problems are at an appropriate level and teachers adjust for reading abilities. Context provides opportunities for students to conceptually understand abstract thinking. This foundational Kindergarten standard is connected to several 1 <sup>st</sup> grade standards. The CCSSM provides examples of word problems for each level (page 88). Concrete representations (hands-on representations) are more age level appropriate than abstract representations (numerical) and therefore the focus on numerical problems should occur later.	No actionable recommendation made.	Word problems are brought down to the appropriate level. Foundational standard for 5 different 1 <sup>st</sup> grade standards are connected to this single Kindergarten standard. Page 88 of the CCSSM gives examples of word problems for each level. Concrete representations are more age level appropriate than abstract representations and therefore the focus on numerical problems should occur later.

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CCSS.Math.Content.K.OA.A.5	Fluently add and subtract within 5.		Fluently add and subtract within 20.	Students have 10 fingers and 10 toes. They should learn how to count at first within 10, than add two numbers within 10. Then add numbers within 20.	No actionable recommendation made.	Fluency with smaller numbers is needed before students can move to more advanced number sets. The standards are a minimum recommendation for instruction.	No actionable recommendation made.	Fluency with smaller numbers is needed before students can move to more advanced number sets. The standards are a minimum recommendation for instruction.
CCSS.Math.Content.K.NBT.A.1	Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., $18 = 10 + 8$ ); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.	Grade 1			No actionable recommendation made.	Creating number sense is fundamental to mathematical instruction. The standard as written provides exposure which is necessary for first grade content. This standard is meant to be taught later in the year after other skills have been developed. This skill if further developed in subsequent grades.	No actionable recommendation made.	Creating number sense is fundamental to CCSSM instruction. The standard as written provides exposure which is necessary for first grade content. This standard is meant to be taught later in the year after the other skills have been developed. Mastery of this standard is not expected.
CCSS.Math.Content.K.MD.A.1	Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.	Grade 1			No actionable recommendation made.	The standard as written does not preclude the use of observation or visual representations to make decisions regarding the stated attributes. Including the addendum to this standard may affect alternative measurements which cannot be conveyed through drawings (e.g. weight). It is presupposed that the teacher(s) currently make connections between the classroom and the real-world.	No actionable recommendation made.	The standard as written does not preclude the use of observation or visual representations to make decisions regarding the stated attributes. Including the addendum to this standard may affect alternative measurements which cannot be conveyed through drawings (e.g. weight). It is presupposed that the teacher currently strives to make connections to the classroom and the real-world and will continue to do this into the future.
CCSS.Math.Content.K.MD.A.1	Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.		Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. Use visual to convey this.	Students must learn the idea of scale (old fashion) or see-saw /teeter totter to know heavy item comes down. This is easier to grasp. If this standard is used, then books will be written with drawing. Students see length by looking at their parents, and themselves.	No actionable recommendation made.	The standard as written does not preclude the use of observation or visual representations to make decisions regarding the stated attributes. Including the addendum to this standard may affect alternative measurements which cannot be conveyed through drawings (e.g. weight). It is presupposed that the teacher(s) currently make connections between the classroom and the real-world.	No actionable recommendation made.	The standard as written does not preclude the use of observation or visual representations to make decisions regarding the stated attributes. Including the addendum to this standard may affect alternative measurements which cannot be conveyed through drawings (e.g. weight). It is presupposed that the teacher currently strives to make connections to the classroom and the real-world and will continue to do this into the future.

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CCSS.Math.Content.K.MD.A.2	Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference.		Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. Use visual to convey this.	Visual is needed to convey this. It allow students to grasp idea. When this is written, the curricular material will have this. This will make teacher's job easier.	No actionable recommendation made.	The standard as written does not preclude the use of observation or visual representations to make decisions regarding the stated attributes. It is presupposed that the teacher(s) currently make connections between the classroom and the real-world. The example within the given standard uses the context of measuring students, which more than likely would be done visually.	No actionable recommendation made.	The standard as written does not preclude the use of observation or visual representations to make decisions regarding the stated attributes. It is presupposed that the teacher currently strives to make connections to the classroom and the real-world and will continue to do this into the future. The example given within the CCSSM uses the context of measuring students to demonstrate the standard, which more than likely would be done visually.
CCSS.Math.Content.K.G.A.2	Correctly name shapes regardless of their orientations or overall size.			Discard 3d shapes	No actionable recommendation made.	Our world is 3D. Students interact with 3-dimensional objects such as cubes, cones, cylinders, and spheres daily. Applying mathematical vocabulary words is necessary. The individual submitting this comment is referring to the cluster heading to find the language "3D" but this term is specifically listed in K.G.A.3.	No actionable recommendation made.	Our world is 3D. Students interact with 3-dimensional objects such as cubes, cones, cylinders, and spheres daily. Applying mathematical vocabulary words is necessary. The reviewer is referring to the cluster heading to find the language "3D" and is specifically listed in K.G.A.3.
CCSS.Math.Content.K.G.A.3	Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").	Grade 1			No actionable recommendation made.	Students interact with these shapes daily and applying a mathematical vocabulary word is a foundational skill. Standards at the kindergarten level address identification whereas 1 <sup>st</sup> grade standards address reasoning skills.	No actionable recommendation made.	Students interact with these shapes daily and applying a mathematical vocabulary word is essential. Foundational skills for future instruction needs to be taught in Kindergarten. Standards at the kindergarten level address identification whereas 1 <sup>st</sup> grade standards address reasoning skills.
CCSS.Math.Content.K.G.B.5	Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.	Grade 1			No actionable recommendation made.	This standard relates to a number of Geometry standards in 1 <sup>st</sup> grade. Leaving this in Kindergarten allows for a more even distribution of standards throughout the primary grades.	No actionable recommendation made.	This standard relates to a number of Geometry standards in 1 <sup>st</sup> grade. Leaving this in Kindergarten allows for a more even distribution of standards throughout the primary grades.
CCSS.Math.Content.K.G.B.6	Compose simple shapes to form larger shapes.	Grade 1			No actionable recommendation made.	.	No actionable recommendation made.	This standard allows for the exploration of composing and decomposing shapes which can then be connected and related to the current practice of composing and decomposing numbers.

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<b>FIRST GRADE</b>								
CCSS.Math.Content.1.OA.A.1	Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.		Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	Chose 2 types of problems. Add others later  On in upper grades	No actionable recommendation made.	The comments appear to suggest curricular issue(s) rather than standards issues. Students that can work with unknowns in all positions will have a better understanding of real-world situations. Problems may be scaffolded throughout the year to include more challenging problems as students develop deeper sophistication of understanding. Diversity of problem types allows teacher to more specifically target instruction to the needs of students in the classroom. It is assumed at the beginning of the year many students will need tangible supports for problem solving, but by the end of the year a number of students will no longer require manipulatives for certain problem types.	No actionable recommendation made.	The comments appear to suggest curricular issue(s) rather than standards issues. Students that can work with unknowns in all positions will have a better understanding of real-world situations. Problems may be scaffolded throughout the year to include more challenging problems as students develop deeper sophistication of understanding. Diversity of problem types allows teacher to more specifically target instruction to the needs of students in the classroom. It is assumed at the beginning of the year many students will need tangible supports for problem solving, but by the end of the year a number of students will no longer require manipulatives for certain problem types.
CCSS.Math.Content.1.OA.A.2	Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.		Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. In the second semester, students should solve problems within 40 to understand mechanics of carry & borrowing.	This is important to know money, and calendar (How many days until Halloween?). Students should do problems that involves no carry & borrowing at first, then learn carry & borrowing within 40. 40 should not be rigid, but as guideline that manipulative is handled easily with small numbers to understand the concept (or the mechanics).	No actionable recommendation made.	Although some students may have experiences with borrowing and carrying in 2 <sup>nd</sup> grade, it may not be the case for all students. The standards represent a minimum recommendation for instruction and students can be exposed to more advanced techniques when they have the understanding to support such instruction.	No actionable recommendation made.	The standards represent a minimum recommendation for instruction and students can be exposed to more advanced techniques when they have the understanding to support such instruction.
CCSS.Math.Content.1.OA.B.3	Apply properties of operations as strategies to add and subtract.	Grade 3			No actionable recommendation made.	Developing a conceptual understanding of properties of operation in first grade, while learning addition and subtraction facts, can create a number of advantages to these younger students. Understanding the commutative property in particular can reduce facts that students need to remember. This standard does not necessitate the memorization of specific property names, but instead should be accessible for problem solving situations where it could benefit the student to understand.	No actionable recommendation made.	Developing a conceptual understanding of properties of operation in first grade, while learning addition and subtraction facts, can create a number of advantages to these younger students. Understanding the commutative property in particular can reduce facts that students need to remember. This standard does not necessitate the memorization of specific property names, but instead should be accessible for problem solving situations where it could benefit the student to understand.

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CCSS.Math.Content.1.OA.B.4	Understand subtraction as an unknown-addend problem.	Grade 2			No actionable recommendation made.	Students were exposed to various types of problems, some of which required this understanding, when they were in Kindergarten (K.OA.1 & K.OA.2). Developing a flexible understanding of subtraction allows students to approach a wider range of problems and promotes the development of number sense and operational thinking.	No actionable recommendation made.	Students are exposed to various types of problems in Kindergarten (K.OA.1 & K.OA.2). Developing a flexible understanding of subtraction allows students to approach a wider range of problems and promotes the development of number sense and operational thinking.
CCSS.Math.Content.1.OA.C.6	Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$ ); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$ ); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$ , one knows $12 - 8 = 4$ ); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$ ).		Add and subtract within 40, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$ ); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$ ); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$ , one knows $12 - 8 = 4$ ); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$ ). Students must know how to do carry & borrowing.	Students must know how to do addition and subtraction within 40. Why 40? With 40, it gives students access to addition & subtraction with number of days (as in calendar). Teaching carry and borrowing is not difficult. Idea is to teach students addition of single digit number first, then double digit with single digit without carry, and then with carry. This is a systematic approach. The concept is strengthened with smaller number here. Similarly, borrowing is easy with smaller number where students can use manipulative for borrowing. This way, students are not burden with too large of manipulative, and understand the mechanics.	No actionable recommendation made.	This particular standard as written connects to a number of 1 <sup>st</sup> grade standards (1.OA.1, 1.OA.5, 1.OA.3, & 1.OA4) and creates foundational knowledge for 2 <sup>nd</sup> grade standards. This knowledge presents essential understandings for subsequent learning and for a progression towards operational fluency; having a fluent understanding of addition and subtraction through 20 provides tools for solving problems involving larger numbers. The standards represent a minimum recommendation for instruction and students can be exposed to more advanced techniques when they have the understanding to support such instruction.	No actionable recommendation made.	The standard as written connects to a number of 1 <sup>st</sup> grade standards (1.OA.1, 1.OA.5, 1.OA.3, & 1.OA4) and creates foundational knowledge for 2 <sup>nd</sup> grade standards. This knowledge presents essential understandings for subsequent learning and for a progression towards operational fluency; having a fluent understanding of addition and subtraction through 20 provides tools for solving problems involving larger numbers. The standards represent a minimum recommendation for instruction and students can be exposed to more advanced techniques when they have the understanding to support such instruction.

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CCSS.Math.Content.1.OA.C.6	Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$ ); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$ ); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$ , one knows $12 - 8 = 4$ ); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$ ).	Grade 2			No actionable recommendation made.		No actionable recommendation made.	The standard as written connects to a number of 1 <sup>st</sup> grade standards (1.OA.1, 1.OA.5, 1.OA.3, & 1.OA.4) and creates foundational knowledge for 2 <sup>nd</sup> grade standards. This knowledge presents essential understandings for subsequent learning and for a progression towards operational fluency; having a fluent understanding of addition and subtraction through 20 provides tools for solving problems involving larger numbers. The standards represent a minimum recommendation for instruction and students can be exposed to more advanced techniques when they have the understanding to support such instruction.
CCSS.Math.Content.1.OA.D.8	Determine the unknown whole number in an addition or subtraction equation relating three whole numbers.	Grade 2			No actionable recommendation made.	This standard directly supports other standards within this grade level (1.OA.1 & 1.OA.7). Furthermore, it assists the development of understanding for subsequent problem solving at future grade levels, developing skills and concepts which can be utilized with larger numbers, specifically in second grade.	No actionable recommendation made.	This standard directly supports other standards within this grade level (1.OA.1 & 1.OA.7). Furthermore, it assists the development of understanding for subsequent problem solving at future grade levels, developing skills and concepts which can be utilized with larger numbers, specifically in second grade.

Standards or Mathematical Practices	Description	New Grade level suggestion	New Description Please explain how you would break up the standard:	Comments	small group recommendation	small group rationale	final recommendation	final rationale
CCSS.Math.Content.1.NBT.C.4	Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.	Grade 3			No actionable recommendation made.	This standard relates to subsequent learning and operation. Without this standard second grade-level content (specifically that found within 2.NBT.5 & 2.OA.1) may be less accessible for students. Students should gain an introductory level of understanding regarding this standard and instruction should include a variety of strategies and modeling to ensure students grasp basis for this skill.	No actionable recommendation made.	This standard relates to subsequent learning and operation. Without this standard, second grade-level content (specifically that found within 2.NBT.5 & 2.OA.1) may be less accessible for students. Students should gain an introductory level of understanding regarding this standard; instruction should include a variety of strategies and modeling to ensure students develop conceptual understanding.
CCSS.Math.Content.1.NBT.C.6	Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	Grade 2			No actionable recommendation made.	This standard represents a fundamental understanding that is essential to subsequent learning in 2 <sup>nd</sup> grade (2.OA.1). Given the way in which the standard is written the use of models and manipulatives are presupposed in the development of this understanding, therefore ensuring better problem solving in the future.	No actionable recommendation made.	This standard represents a fundamental understanding that is essential to subsequent learning in 2 <sup>nd</sup> grade (2.OA.1). The use of models and manipulatives are presupposed in the development of this understanding, ensuring better problem solving in the future.





Standards or Mathematical Practices	Description	New Grade level suggestion	New Description Please explain how you would break up the standard:	Comments	small group recommendation	small group rationale	final recommendation	final rationale
CCSS.Math.Content.3.OA.A.2	Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each.	Grade 4		I think it's appropriate to introduce the concept of division in grade 3, but mastery, especially in its application to word problems (especially multi-step word problems) is a bit of a stretch.	No actionable recommendation made.	All understanding of division should be directly tied to the concept of multiplication and therefore students will engage in learning this standard through their work with the multiplication standards at this grade level. The relationship between multiplication and divisions (such as those promoted through the examination of fact families) create the basis for this standard. Specifically this standard relates to understanding the quotient within a contextual situation. Students often struggle with division concepts, but through word problems they main gain deeper insights which will make subsequent learning easier. Division and multiplication learning should naturally occur together to highlight the connections between the two operations. Mastery is not presupposed, as these concepts will be further developed in later years.	No actionable recommendation made.	All understanding of division should be directly tied to the concept of multiplication. The relationship between multiplication and division (such as those promoted through the examination of fact families) create the basis for this standard. This standard specifically relates to understanding the quotient within a contextual situation. Students often struggle with division concepts, but through word problems they gain deeper insights which will make subsequent learning easier. Division and multiplication learning should naturally occur together to highlight the connections between the two operations. Mastery of division is not expected in third grade, as this concept will be further developed in later years.
CCSS.Math.Content.3.OA.A.3	Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.			I believe mastery of division at grade 3 is not developmentally appropriate. This standard is fine solely for multiplication.	No actionable recommendation made.	All understanding of division should be directly tied to the concept of multiplication and therefore students will engage in learning this standard through their work with the multiplication standards at this grade level. The relationship between multiplication and divisions (such as those promoted through the examination of fact families) create the basis for this standard. Specifically this standard relates to understanding the quotient within a contextual situation. Students often struggle with division concepts, but through word problems they main gain deeper insights which will make subsequent learning easier. Division and multiplication learning should naturally occur together to highlight the connections between the two operations. Mastery is not presupposed, as these concepts will be further developed in later years.	No actionable recommendation made.	All understanding of division should be directly tied to the concept of multiplication and therefore students will engage in learning this standard through their work with the multiplication standards at this grade level. The relationship between multiplication and divisions (such as those promoted through the examination of fact families) create the basis for this standard. Specifically this standard relates to understanding the quotient within a contextual situation. Students often struggle with division concepts, but through word problems they gain deeper insights which will make subsequent learning easier. Division and multiplication learning should naturally occur together to highlight the connections between the two operations. Mastery of division is not expected, as these concepts will be further developed in later years.

Standards or Mathematical Practices	Description	New Grade level suggestion	New Description Please explain how you would break up the standard:	Comments	small group recommendation	small group rationale	final recommendation	final rationale
CCSS.Math.Content.3.OA.C.7	Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$ , one knows $40 \div 5 = 8$ ) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.			I believe mastery of division at grade 3 is not developmentally appropriate. This standard is fine solely for multiplication.	No actionable recommendation made.	Division and multiplication learning should naturally occur together to highlight the connections between the two operations. Mastery is not presupposed, as these concepts will be further developed in later years. The relationship between multiplication and divisions (such as those promoted through the examination of fact families) create the basis for this standard. The narrative presented on pg. 21 of the CCSSM may offer some additional explanation of the relationship and the intent of instruction at this grade level.	No actionable recommendation made.	Division and multiplication learning should occur together to highlight the connections between the two operations. Mastery of division is not expected, as these concepts will be further developed in later years. The relationship between multiplication and divisions (such as those promoted through the examination of fact families) create the basis for this standard. The narrative presented on pg. 21 of the CCSSM may offer some additional explanation of the relationship and the intent of instruction at this grade level.
CCSS.Math.Content.3.OA.D.8	Solve two-step word problems using the four operations. 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.			I believe mastery of division at grade 3 is not developmentally appropriate. This standard is fine solely for multiplication, addition and subtraction.	No actionable recommendation made.	In third grade students have familiarity with the four operations of whole numbers. This standard uses this knowledge to engage students in more complex operations and allows the teacher to connect other standards from the grade (perimeter and area) to assist in the development of deeper understanding about the given operations of multiplication and division. Students will continue to solve these types of problems throughout their elementary career and an introduction of these concepts in third grade facilitate this development in later grades.	No actionable recommendation made.	In third grade, students have familiarity with the four operations of whole numbers. This standard uses this knowledge to engage students in more complex operations and allows the teacher to connect other standards from the grade (perimeter and area) to assist with the development of deeper understanding about the given operations of multiplication and division. Students will continue to solve these types of problems throughout their elementary career and an introduction of these concepts in third grade facilitate this development in later grades.
CCSS.Math.Content.3.OA.D.9	Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations.		Identify arithmetic patterns <b>**SPECIFY WHICH PATTERNS OR GET RID OF STANDARD****</b> (including patterns in the addition table or multiplication table), and explain them using properties of operations.	Standard too broad. Specify patterns. Commutative property, skip counting, relationships between even/odd factors, addends, sums and product?????	No actionable recommendation made.	The process of exploring patterns in multiple situations allows students to recognize arithmetic understandings not always accessible without this type of exploration. In addition, this standard creates a context for mathematical practices 2, 3, 5, 7 & 8 at this grade level. This standard could be connected to multiple other standards at the grade level and through specifying patterns, some important opportunities may be missed.	No actionable recommendation made.	The process of exploring patterns in multiple situations allows students to recognize arithmetic understandings and is not always accessible without this type of exploration. In addition, this standard creates a context for Mathematical Practices 2, 3, 5, 7 & 8 at this grade level. This standard is connected to multiple standards at the grade level and through specifying patterns, some important opportunities may be missed.

Standards or Mathematical Practices	Description	New Grade level suggestion	New Description Please explain how you would break up the standard:	Comments	small group recommendation	small group rationale	final recommendation	final rationale
CCSS.Math.Content.3.NF.A.2a	Represent a fraction $\frac{1}{b}$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into equal parts. Recognize that each part has size $\frac{1}{b}$ and that the endpoint of the part based at 0 locates the number $\frac{1}{b}$ on the number line.		Represent a fraction $\frac{1}{b}$ on a number line diagram BETWEEN ZERO AND ONE by defining the interval from 0 to 1 as the whole and partitioning it into equal parts. *FOR HALVES, THIRDS AND FOURTHS. Recognize that each part has size $\frac{1}{b}$ and that the endpoint of the part based at 0 locates the number $\frac{1}{b}$ on the number line.	This is a difficult concept and limiting the denominators and keeping fractions to be identified between 0 and 1 would help. When fractions exceed one whole, we are teaching this as an improper fraction on the number line. This later makes teaching linear measurement with rulers difficult as we teach them to identify three-halves as one and one-half. It is very confusing for this age.	No actionable recommendation made.	The study of improper fractions is not explicitly indicated by the third grade standards, but this serves as a minimum recommendation for instruction and students can be exposed to more advanced techniques when they have the understanding to support such instruction. Possible denominators for third grade are defined on pg. 24 of the CCSSM and specifically are 2, 3, 4, 6, & 8; these denominators seem reasonable for the grade level.	No actionable recommendation made.	The study of improper fractions is not explicitly indicated by the third grade standards. This standard is a minimum recommendation for instruction and students may be exposed to more advanced techniques if they have the understanding to support such instruction. Possible denominators for third grade are defined on pg. 24 of the CCSSM and specifically are 2, 3, 4, 6, & 8; these denominators seem reasonable for the grade level.
CCSS.Math.Content.3.NF.A.2b	Represent a fraction $\frac{a}{b}$ on a number line diagram by marking off a length $\frac{a}{b}$ from 0. Recognize that the resulting interval has size $\frac{a}{b}$ and that its endpoint locates the number $\frac{a}{b}$ on the number line.		Represent a fraction $\frac{a}{b}$ on a number line diagram between 0 and 1 by marking off $\frac{a}{b}$ lengths $\frac{1}{b}$ from 0. Recognize that the resulting interval has size $\frac{a}{b}$ and that its endpoint locates the number $\frac{a}{b}$ on the number line.		No actionable recommendation made.	As written, this standard allows the teacher flexibility to develop the concept of iterating unit fractions to build fractions of the form $\frac{a}{b}$ , where 'a' represents a set number of iterations of $\frac{1}{b}$ . Without a clear limit specified by this standard teachers are able to use their own judgment in deciding whether they wish progress towards fractions $> 1$ . Although teachers are not required to introduce fractions greater than one, certain problem contexts may necessitate this understanding among students such as in the case of measurement-based problems.	No actionable recommendation made.	As written, this standard allows the teacher flexibility to develop the concept of iterating unit fractions to build fractions of the form $\frac{a}{b}$ , where 'a' represents a set number of iterations of $\frac{1}{b}$ . Without a clear limit specified by this standard teachers are able to use their own judgment in deciding whether they wish progress towards fractions $> 1$ . Although teachers are not required to introduce fractions greater than one, certain problem contexts may necessitate this understanding among students such as in the case of measurement-based problems.
CCSS.Math.Content.3.NF.A.3a	Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.		Understand two fractions between 0 and 1 as equivalent (equal) if they are the same size, or the same point on a number line.	Going beyond 1 on the number line has kids identifying improper fractions which make it difficult to teach linear measurement on rulers that require students to note measurements as mixed fractions.	No actionable recommendation made.	By adding this "verbiage", it limits student learning and the teacher's teaching opportunities. If the students are ready to move on past 1, they should be allowed to do so.	No actionable recommendation made.	By adding this language, it limits student learning and the teacher's teaching opportunities. If the students are ready to move on past 1, they should be allowed to do so.
CCSS.Math.Content.3.MD.A.1	Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.		Tell and write time to the nearest minute and measure time intervals in minutes WITHIN THE GIVEN HOUR OR BEYOND THE GIVEN HOUR, NOT TO EXCEED 60 MINUTES. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.	Going beyond sixty minutes at this age is developmentally challenging.	No actionable recommendation made.	Students should not be given limits on learning their time; although students may find moving beyond 60 minutes as challenging, this concept can be developed. Units of time are not always limited to an hour; students need experiences which present them with more flexible interpretations of time relative to problem solving situations they may face. An example would be measuring the length of a movie or a "car ride". Relating it to a real life experience will help understanding of the concept.	No actionable recommendation made.	Students may find moving beyond 60 minutes challenging, however this concept can be developed based on the needs of the student(s). Units of time are not always limited to an hour; students need experiences which present them with more flexible interpretations of time relative to problem solving situations they may face. An example would be measuring the length of a movie or a "car ride". Relating it to a real life experience will help understanding of the concept.



Standards or Mathematical Practices	Description	New Grade level suggestion	New Description Please explain how you would break up the standard:	Comments	small group recommendation	small group rationale	final recommendation	final rationale
CCSS.Math.Content.4.NBT.B.4	Fluently add and subtract multi-digit whole numbers using the standard algorithm.	Grade 5		The standard algorithm should not be specified. There are some scenarios another strategy would be more efficient. Requiring standard only can limit our students.	No actionable recommendation made.	The standard algorithm for addition and subtraction should be learned at some point in a student's mathematical career, if only for adding another model to the student's repertoire. Students should continue to use models that best match a given set of numbers, but with the increase expectations for the size of numbers, the standard algorithms present generalizable strategies for accurate calculation. In addition, by fourth grade students have been studying addition and subtraction for five years and should have the place value knowledge to move to this level of abstraction. Finally, fifth grade currently has a number of essential requirements for students to master, so it does not makes sense to for these algorithms to be part of the fifth grade standards.	No actionable recommendation made.	The standard algorithm for addition and subtraction should be learned at some point in a student's mathematical career, if only for adding another model to the student's repertoire. Students should continue to use models that best match a given set of numbers, but with the increased expectations for the size of numbers, the standard algorithms present generalizable strategies for accurate calculation. In addition, by fourth grade students have been studying addition and subtraction for five years and should have the place value knowledge to move to this level of abstraction.
CCSS.Math.Content.4.NF.B.4a	Understand a fraction $\frac{a}{b}$ as a multiple of $\frac{1}{b}$ .			I agree with this standard although the boxes make it hard to understand. An example with numbers as opposed to variables would be helpful. I understand the purpose for variables, so perhaps an example could be added in addition to the original statement.	No actionable recommendation made.	A contextual example of this standard can be found within the grade through examination of 4.MD.5a&b; the standards surrounding defining angle measure as the sum of 1 degree ( $\frac{1}{360}$ ) rotations expresses the same concept.	No actionable recommendation made.	A contextual example of this standard can be found within the grade level standards.
CCSS.Math.Content.4.MD.B.4	Make a line plot to display a data set of measurements in fractions of a unit ( $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{1}{8}$ ). Solve problems involving addition and subtraction of fractions by using information presented in line plots.			This standard is okay, but it would be helpful if there was more information about how it is applicable to life. Otherwise, it seems like we are just teaching a skill without an authentic purpose.	No actionable recommendation made.	This standard may be directly connected to other 5 <sup>th</sup> grade standard, which then relate to the 6 <sup>th</sup> grade statistics and probability standards, specifically those relating to the concept of median values. In addition, pg. 31 of the CCSSM does provide one such example of how this may be used.	No actionable recommendation made.	This standard is directly connected to 5 <sup>th</sup> grade standards, which then relate to the 6 <sup>th</sup> grade statistics and probability standards, specifically those relating to the concept of median values. An example can be found on pg. 31 of the CCSSM.
<b>FIFTH GRADE</b>								

Standards or Mathematical Practices	Description	New Grade level suggestion	New Description Please explain how you would break up the standard:	Comments	small group recommendation	small group rationale	final recommendation	final rationale
CCSS.Math.Content.5.NBT.B.7	Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.			The standard is written just fine. However, students often come to 5th grade with little understanding of decimal numbers. So if they first learn about decimal numbers in 5th grade, it's hard for them to gain a deep enough understanding of what parts of numbers represent to then take it and be able to fluently use the mathematical operations with decimal numbers. Often times we are trying to still understand what a decimal represents now we are trying to move them into understanding what happens when you multiply or divide with a decimal number. That's a lot of information to process for kids who don't truly understand that decimals are parts of numbers.	No actionable recommendation made.	The comment appears to reflect a sequencing issues within the curriculum rather than a problem with the standard. Students who experience decimals as a subset of fraction sometimes have more success with developing understanding than those who experience it at the beginning of the year as part of a place value unit; in the case of the later, students will need to review content. Context, such as money, can help students relate to decimal notation and operation, however the language of instruction (34 hundredths versus "point three four") may also play a role in success. This standard does not require mastery, but all operations should be connected to various models students have already learned using whole numbers and should not see like completely new content to students.	No actionable recommendation made.	The comment appears to reflect a sequencing issue within the local curriculum rather than a problem with the standard. Students who experience decimals as a subset of fractions may have more success with developing understanding than those who experience it at the beginning of the year as part of a place value unit. Context, such as money, can help students relate to decimal notation and operation, however the language of instruction (34 hundredths versus "point three four") may also play a role in success. This standard does not require mastery, but all operations should be connected to various models students have already learned using whole numbers.
CCSS.Math.Content.5.NF.B.3	Interpret a fraction as division of the numerator by the denominator ( $\frac{a}{b} = a \div b$ ). 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.			I agree with this standard; however, higher level concepts with fractions (such as adding and subtracting fractions with unlike denominators, multiplication, and division) are very challenging for 4th and 5th graders. These fractions need to continue to be addressed in middle school in order for students to develop a deep conceptual understanding.	No actionable recommendation made.	Inherently this concept of fractions representing division can assist students in understanding other standards regarding fractions within the grade level and later on in subsequent grades. It appears the comment may relate more to curriculum or sequencing rather than how the standard is currently written. The concept will be vital to the development of ratio, proportionality, and linearity, and having it in 5 <sup>th</sup> grade provides time to develop the concept prior to entering middle school.	No actionable recommendation made.	The concept is vital to the development of ratio, proportionality, and linearity, and introducing it in 5 <sup>th</sup> grade provides time to develop the concept. This concept continues to be addressed in standards above 5 <sup>th</sup> grade.

Standards or Mathematical Practices	Description	New Grade level suggestion	New Description Please explain how you would break up the standard:	Comments	small group recommendation	small group rationale	final recommendation	final rationale
CCSS.Math.Content.5.NF.B.4a	Interpret the product $(\frac{a}{q}) \times (\frac{b}{b})$ as a parts of a partition of into equal parts, $\frac{a}{q}$ equivalently, as the result of a sequence of operations $\frac{a}{q} \times \frac{b}{b}$ .			I agree with this standard; however, higher level concepts with fractions are very challenging for 4th and 5th graders. These fractions need to continue to be addressed in middle school in order for students to develop a deep conceptual understanding.	No actionable recommendation made.	Inherently this concept of fraction multiplication represents the standard algorithm for multiplication. The standard suggests contextual and visual representations should accompany the development of this standard. It appears the comment may relate more to curriculum or sequencing rather than how the standard is currently written. The concept will be vital to the development of fraction, ratio, proportionality, and algebraic thinking, and having it in 5 <sup>th</sup> grade provides time to develop the concept prior to entering middle school.	No actionable recommendation made.	Inherently this concept of fraction multiplication represents the standard algorithm for multiplication. The standard suggests contextual and visual representations should accompany the development of this standard. The concept will be vital to the development of fraction, ratio, proportionality, and algebraic thinking. This concept continues to be addressed in standards above 5 <sup>th</sup> grade.
CCSS.Math.Content.5.NF.B.5b	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 $\frac{a}{n} = \frac{a \times b}{n \times b}$ to the effect of multiplying $\frac{a}{n}$ by 1.			In general, I think the mathematics standards are strong; however, they are often written using high-level mathematical language that is difficult for even teachers to understand. I think some of the standards could be made more clear, especially at the elementary level.	No actionable recommendation made.	Rather than re-writing the standard, this comment seems to suggest the need for a clarifying document (such as the articulation standards) which expand upon the definitions of the standards and provide examples for teachers to reference.	No actionable recommendation made.	Rather than re-writing the standard, this comment seems to suggest the need for a clarifying document (such as the articulation standards) which expand upon the definitions of the standards and provide examples for teachers to reference.
CCSS.Math.Content.5.NF.B.7c	Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem.			I really appreciate any of the standards that have real world applications. I wish we saw this even more often in the standards.	No actionable recommendation made.	Nothing needed for this comment.	No actionable recommendation made.	No statement or recommendation required for this comment.

Standards or Mathematical Practices	Description	New Grade level suggestion	New Description Please explain how you would break up the standard:	Comments	small group recommendation	small group rationale	final recommendation	final rationale
CCSS.Math.Content.5.MD.A.1	Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.			I agree with this standard; however, it doesn't tell us the kind of units students need to convert. This can make it very difficult to teach because there are so many different units it could be addressing, and there isn't time to teach the conversion of every unit and get to all the other standards. It would be helpful if it was more specific.	No actionable recommendation made.	Although the standard provides an example of specific units which could be used, students should have experiences with a variety of unit conversions, which may support understanding of division and scaling standards at the grade level (5.NBT.7, 5.NBT2, 5.NBT3, & 5.NBT.4). In addition, this standard supports subsequent learning of ratio and proportionality in later grades. Clarification may be better served by a supplemental document explaining the standards (articulation standards) rather than a change to the particular standard.	No actionable recommendation made.	Although the standard provides an example of specific units which could be used, students should have experiences with a variety of unit conversions, which may support understanding of division and scaling standards at the grade level (5.NBT.7, 5.NBT2, 5.NBT3, & 5.NBT.4). This standard supports subsequent learning of ratio and proportionality in later grades. Clarification may be better served by a supplemental document explaining the standards (articulation standards) rather than a change to the particular standard.
CCSS.Math.Content.5.MD.B.2	Make a line plot to display a data set of measurements in fractions of a unit ( $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{1}{8}$ ). Use operations on fractions for this grade to solve problems involving information presented in line plots.			I agree with this standard, but it would be helpful to see the real world application. Perhaps an example would help to give this standard more purpose for both teachers and students.	No actionable recommendation made.	This standard stands to support previous learning and subsequent work in proportionality and statistics found in the middle school standards. Using contextual situations should support the development of this standard and an example is provided on pg. 37 of the CCSSM.	No actionable recommendation made.	This standard stands to support previous learning and subsequent work in proportionality and statistics found in the (6+) standards. Using contextual situations should support the development of this standard and an example is provided on pg. 37 of the CCSSM.
<b>SIXTH GRADE</b>								
CCSS.Math.Content.6.RP.A.3a	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.	Grade 8		It is simply too much. It has taken me three weeks to get the kids to understand a tape diagram and to label the front of all models, etc. It takes way too long to teach all of the items listed in this standard. They do not even know their multiplication facts well enough to use a table.	Not Actionable	See pg. 39 in the standards book this is a big concept and should take time, consider integrating these foundational skills throughout the year. Idaho has local control and districts have choice in how the standards are taught and layout. Grades 7th and 8th grade heavily rely on knowledge to be successful. Standards are written with the understanding that students are coming prepared.	No actionable recommendation made.	These are important concepts that are developed throughout grades 6-8. There is room to build fluency of multiplication within the framework. This is a foundational skill that must be understood for 7th grade (7.EE and 7.RP) as well as 8th grade.
CCSS.Math.Content.6.RP.A.3c	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.	Grade 8		Again, it takes way too long to teach what a percent is and then how to find a percent of another number.	Not Actionable	There is room to build fluency of multiplication within the framework. This is a foundational skill that must be understood for 7th grade (7.EE and 7.RP) as well as 8th grade.	No actionable recommendation made.	There is room to build fluency of multiplication within the framework. This is a foundational skill that must be understood for 7th grade (7.EE and 7.RP) as well as 8th grade.
CCSS.Math.Content.6.NS.A.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.	Grade 7	Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., using the equation to represent the problem.		Not Actionable	"by using visual fraction models" is a reminder that students need multiple representations and makes connections with prior knowledge and visual represents they have previously seen. This is a foundation for the entire set of 7th grade standards and fits nicely with other 6th grade standards	No actionable recommendation made.	The phrase "by using visual fraction models" is a reminder that students continue to need representations to develop conceptual understanding. This is a foundation for 7th grade standards and fits well with other 6th grade standards.

Standards or Mathematical Practices	Description	New Grade level suggestion	New Description Please explain how you would break up the standard:	Comments	small group recommendation	small group rationale	final recommendation	final rationale
CCSS.Math.Content.6.SP.A.3	Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.	High School - Statistics and Probability		why would a 6th grader or 11 year old need to understand a M.A.D. or mean absolute deviation? They may use this much later in life but they are really not understanding the complexity of the topic at this age. It is strange that the MAD was ever placed in a 6th grade math list of standards.	Not Actionable	MAD is a simpler measure to describe the variation within a data set and is a way to set the foundation for comparing 2 sets of data (7th grade) and standard deviation (high school). This extends to standards 6.SP.B.5d.	No actionable recommendation made.	Mean Absolute Deviation (MAD) is a less complex measure to describe the variation than standard deviation. It sets the foundation for comparing two sets of data (7th grade) and standard deviation (high school). This extends to standards 6.SP.B.5d.
CCSS.Math.Content.6.SP.A.3	Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.	Grade 7	Please explain how you would break up the standard:  6th grade: Recognize that a measure of center for a numerical data set summarizes all of its values with a single number,  7th grade: Recognize that a measure of variation describes how its values vary with a single number.	6th grade: Recognize that a measure of center for a numerical data set summarizes all of its values with a single number  7th or 8th grade: Recognize that a measure of variation describes how its values vary with a single number.	Not Actionable	MAD is a simpler measure to describe the variation within a data set and is a way to set the foundation for comparing 2 sets of data (7th grade) and standard deviation (high school). This extends to standards 6.SP.B.5d. Keeping the standard together avoids misconceptions and support students conceptual understanding.	No actionable recommendation made.	Mean Absolute Deviation (MAD) is a less complex measure to describe the variation than standard deviation. It sets the foundation for comparing two sets of data (7th grade) and standard deviation (high school). This extends to standards 6.SP.B.5d. Keeping the standard together avoids misconceptions and supports students' conceptual understanding.
CCSS.Math.Content.6.SP.B.5c	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.	Grade 7					No actionable recommendation made.	This standard sets the foundation for comparing two sets of data (7th grade) and standard deviation (high school). This extends to standards 6.SP.B.5d.
CCSS.Math.Content.6.SP.B.5d	Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.	Grade 7			Not Actionable	6th grade builds the foundation by using 1 data set, 7th grade uses 2 data sets and compares.	No actionable recommendation made.	Sixth grade builds the foundation by using one data set, 7th grade uses two data sets and compares them.
<b>SEVENTH GRADE</b>								
CCSS.Math.Content.7.NS.A.1a	Describe situations in which opposite quantities combine to make 0.	Grade 6		This standard meshes well with 6.NS.C.5	Not Actionable	The committee tends to agree.	Not Actionable	The committee agrees.

Standards or Mathematical Practices	Description	New Grade level suggestion	New Description Please explain how you would break up the standard:	Comments	small group recommendation	small group rationale	final recommendation	final rationale
CCSS.Math.Content.7.NS.A.1d	Apply properties of operations as strategies to add and subtract rational numbers.		Apply properties of operations as strategies to add and subtract rational numbers.  This standard needs clarification. Examples of the properties that can be used as strategies would be helpful.		Apply properties of operations as strategies to add and subtract rational numbers. (see reference table 3 on pg. 90)	Don't reprint, just reference online and find away to communicate out to staff.	New Description: Apply properties of operations as strategies to add and subtract rational numbers. (see reference table 3 on pg. 90)	The recommendation to the state department to: 1) Communicate the existence of the reference section, specifically table 3 in the CCSSM on page 90 and 2) Include the reference within the standard in future editions.
CCSS.Math.Content.7.EE.A.2	Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.			This standard is too vague to be taught/measured.	Not Actionable	If you see the Common Core booklet there is an example given.	Not Actionable	In the CCSSM booklet, there is an example given.
CCSS.Math.Content.7.EE.B.4b	Solve word problems leading to inequalities of the form $ax + b > c$ or $ax + b < c$ , where $a$ , $b$ , and $c$ are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.	Grade 8		Students should have experience graphing equations in slope-intercept form before graphing inequalities.	Not Actionable	This only contains one unknown and will only be graphed on a number line vs. graphed on the coordinate plane.	Not Actionable	This standard addresses inequalities with one unknown ( $x$ is the only unknown) and will be graphed on a number line not graphed on the coordinate plane.
CCSS.Math.Content.7.G.B.4	Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.		Please explain how you would break up the standard:  Standard 1: Know the formulas for the area and circumference of a circle and use them to solve problems;  Standard 2: give an informal derivation of the relationship between the circumference and area of a circle.		Not Actionable	Since the two pieces are so tightly connected it is not necessary to break up the standard.	Not Actionable	The two components are interrelated. It is not necessary to break up the standard.

Standards or Mathematical Practices	Description	New Grade level suggestion	New Description Please explain how you would break up the standard:	Comments	small group recommendation	small group rationale	final recommendation	final rationale
CCSS.Math.Content.7.G.B.6	Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.		The standard should be modified to include which polygons are appropriate. Are students expected to find the area of a 20 sided polygon?  Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.		Not Actionable	This is left up teacher discretion to what measure they extend the standard. Let work that has been done in 6th grade to help drive a teachers discussion.	Not Actionable	The content limit suggested is not necessary if students can generalize their knowledge of decomposing polygons and figures (6.G.1). They can find area of polygons regardless of number of sides. Application of this standard is left to teacher discretion on what information is given to a student to achieve this skill. Selection of polygon should be based upon student ability and enrichment.
<b>EIGHTH GRADE</b>								
CCSS.Math.Content.8.NS.A.2	Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., $\pi^2$ ).		Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., $\pi^2$ ). Students should be able to obtain square root of an arbitrary positive number.	It is possible for the students to determine square root of an arbitrary positive number via Estimate-Approximate-Iterate approach. This has not made it into textbooks. It is easily derived. This way, students can determine square root of 2 (or $\sqrt{2}$ ). This requires either graphical approach, or Algebraic approach with aid of visual. This approach may be new for textbooks, but it is easy to teach by diagrams.	Not Actionable	The square detail is in the example for this standards, and thus not necessary to be readdressed. How to teach it is a local decision.	No actionable recommendation made.	How to meet the standard is a local decision. The approach in the comment is one strategy for meeting this standard, but it is not necessary to prescribe it.
CCSS.Math.Content.8.EE.B.5	Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.		Be able to graph proportional relationships, and make the connection that the slope of a line, is the unit rate. Be able to see that you can write an equation in multiple different ways for the same line.		Not Actionable	There is a misalignment of the second comment and the standard. The first comment is a restatement of the original standard.	No actionable recommendation made.	There is a misalignment of the second sentence in the New Description thoughts and the standard. The first sentence in the New Description thoughts is a restatement of the original standard.
CCSS.Math.Content.8.EE.B.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 $y = mx + b$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at $b$ .		You need to know that $y = mx + b$ is slope-intercept form, and that is graphs a linear line. You also need to know that $m = \text{slope}$ (y over x or rise over run) and that b is the y-intercept on a coordinate plane.		Not Actionable	The standard is deriving this. The suggestion would lower the rigor of the standard.	No actionable recommendation made.	The standard addresses the New Description thoughts. The suggestion would lower the rigor of the standard.

Standards or Mathematical Practices	Description	New Grade level suggestion	New Description Please explain how you would break up the standard:	Comments	small group recommendation	small group rationale	final recommendation	final rationale
CCSS.Math.Content.8.EE.C.7a	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 $x = a$ , $x = b$ , or $x = c$ results (where $a$ , $b$ , and $c$ are different numbers).		Be able to tell if a pair of functions or equations are going to have one solution (two lines with different slopes), no solution (two lines with the same slope), or infinite solutions (one line including undefined lines).		Not Actionable	The suggestion speaks primarily to systems where the standard is addressing single variable equations. The suggestion is one way of addressing conceptual understanding.	No actionable recommendation made.	The New Description speaks primarily to systems of equations whereas the standard is addressing single variable equations. The approach in the New Description is one strategy for meeting this standard, but it is not necessary to prescribe it.
CCSS.Math.Content.8.EE.C.7b	Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.		Be able to solve linear equations using the distributive property, has rational coefficients, and collecting like terms.		Not Actionable	Rewrite of the original standard.	No actionable recommendation made.	Rewrite of the original standard.
CCSS.Math.Content.8.EE.C.8a	Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.			Understanding that the solutions to systems of two linear equations with two variables not only answer the equation, but also shows the point of intersection for the corresponding graph was a real eye opener for me. It taught me the essential fact that math is like a web, where everything is connected either directly or indirectly.	Not Actionable	Positive comment.	No actionable recommendation made.	Positive comment.

Standards or Mathematical Practices	Description	New Grade level suggestion	New Description Please explain how you would break up the standard:	Comments	small group recommendation	small group rationale	final recommendation	final rationale
CCSS.Math.Content.8.EE.C.8b	Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection.			Having 8th grade students who still struggle with many of the abstract algebra concepts understand and be competent in manipulating one linear equation at a time is, in my opinion, more important than being able to simultaneous solve at this time in their math career. After working with this standard and my Pre-Algebra students, they are overwhelmed by this standard. They need time to digest and apply a single linear equation before moving on the processes of elimination and substitution to solve a simultaneous system. This standard feels like it too pushy and too fast - not allowing students to feel comfortable with a single linear equation.	Not Actionable	If students can graph one line, then they can graph two lines. The solution is where the lines intersect. Solving systems using graphing would be the most natural step after teaching graphing. The committee is interpreting the term "algebraically" as meaning algebraic thinking vs. a prescribed process. Formal methods, such as, substitution and elimination are formally taught at the high school level.	No actionable recommendation made.	Solving systems using graphing is a logical step after graphing linear equations. The committee interprets the term "algebraically" as meaning algebraic thinking not a prescribed process. Methods such as substitution and elimination are formally taught at the high school level.
CCSS.Math.Content.8.EE.C.8b	Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection.		This standards wording is confusing, and I don't know how to rewrite it because I don't know what it is saying.  Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection.		Not Actionable		No actionable recommendation made.	Solving systems using graphing is a logical step after graphing linear equations. The committee interprets the term "algebraically" as meaning algebraic thinking not a prescribed process. Methods such as substitution and elimination are formally taught at the high school level.
CCSS.Math.Content.8.F.A.2	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).			I think that students should be able to solve equations in more than one way. If you only know one way to solve the work, then if you find a problem that isn't in the exact form that you are used to then you will have problems solving them.	Not Actionable	Positive comment.	No actionable recommendation made.	Positive comment.
CCSS.Math.Content.8.F.A.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.	Grade 7		I personally think that this tactic of graphing should be introduced in a younger grade. This is the bread and butter of graphing, and I think children need an understanding of it so that they can be ready to expand on the knowledge in the eighth grade.	Not Actionable	This is a natural progression from proportional reasoning in 7th grade. It is connected to many of the functional ideas already in 8th grade. Graphing is also included in 6th grade.	No actionable recommendation made.	This standard is a natural progression of the graphing done with proportional reasoning in 7 <sup>th</sup> grade (7.RP.A.2). This formal approach is connected to many of the ideas about functions already in 8th grade.



Standards or Mathematical Practices	Description	New Grade level suggestion	New Description Please explain how you would break up the standard:	Comments	small group recommendation	small group rationale	final recommendation	final rationale
CCSS.Math.Content.HS: N-RN.A.1	Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents.		Explain how the definition of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents.	"...the definition of the meaning of..." is redundant. May also want to work on clarifying "...those values..."	Not Actionable	So noted no action.	Recommendation to change	The recommendation to the state department is to remove "the meaning of" in future editions.
CCSS.Math.Content.HS: N-CN.A.1	Know there is a complex number such that $i^2 = -1$ , and every complex number has the form $a + bi$ with $a$ and $b$ real.	High School - Functions		The standard is usually taught in a precalculus or trig level course. If a student takes that course, it is not usually until their junior year at the earliest. It should not be tested at the sophomore level on the SBAC test	To make sure that the ISAT-SB assesses only standards in both the traditional and integrated pathway at the determined high school assessment year.	Standard falls within either Algebra 2 (traditional) or Math 2 (integrated). There is a discrepancy, but does not require change in the standard.	No recommendation to change the standard; recommendation to determine and ensure alignment on the state accountability assessment.	Standard falls within either Algebra 2 (traditional) or Math 2 (integrated). There is a discrepancy, but does not require change in the standard. Although a complex number relates to functions, it doesn't warrant a realignment of the standard. Recommendation to the state: ensure that the ISAT-SB assesses only standards in both the traditional and integrated pathway at the determined high school assessment year.
CCSS.Math.Content.HS: N-CN.A.3	Find the conjugate of a complex number; use conjugates to find moduli and quotients of complex numbers.			This standard is a (+) standard in the original CCSS documents and while it targets viable mathematical knowledge, it is not necessarily appropriate for all students. I suspect that only those who intend to pursue post-secondary schooling in a STEM field would ever have a need for exposure to/competency in this standard, so requiring it for all graduates is not appropriate.	Not Actionable	Plus standards are not assessed on high stakes assessment. According to page 2 in the Appendix A under the overview #2 specifically addresses this. On page 8 in the Appendix A it is stated this not included in traditional pathways. In the Common Core State Standards on page 57 indicate these are to prepare for advanced courses and may appear in courses. Students may be address inside a students' course on their course assessments.	No recommendation to change the standard; recommendation to determine and ensure alignment on the state accountability assessment.	All college and career ready standards (those without a +) are found in each pathway. A few (+) standards are included to increase coherence but are not necessarily expected to be addressed on high stakes assessments" (CCSSM Appendix A, page 2). Recommendation to the state: ensure that the ISAT-SB assesses only standards in both the traditional and integrated pathways at the determined high school assessment year.
CCSS.Math.Content.HS: N-CN.B.4	Represent complex numbers on the complex plane in rectangular and polar form (including real and imaginary numbers), and explain why the rectangular and polar forms of a given complex number represent the same number.			This standard is a (+) standard in the original CCSS documents and while it targets viable mathematical knowledge, it is not necessarily appropriate for all students. I suspect that only those who intend to pursue post-secondary schooling in a STEM field would ever even have a need for exposure to/competency in this standard, so requiring it for all graduates is not appropriate.	Not Actionable	Plus standards are not assessed on high stakes assessment. According to page 2 in the Appendix A under the overview #2 specifically addresses this. On page 8 in the Appendix A it is stated this not included in traditional pathways. In the Common Core State Standards on page 57 indicate these are to prepare for advanced courses and may appear in courses. Students may be address inside a students' course on their course assessments.	Not Actionable	All college and career ready standards (those without a +) are found in each pathway. A few (+) standards are included to increase coherence but are not necessarily expected to be addressed on high stakes assessments" (CCSSM Appendix A, page 2)/ Standards may be addressed inside a students' course on their course assessments. Although a complex number relates to functions, it doesn't warrant a realignment of the standard.

Standards or Mathematical Practices	Description	New Grade level suggestion	New Description Please explain how you would break up the standard:	Comments	small group recommendation	small group rationale	final recommendation	final rationale
CCSS.Math.Content.HS: N-CN.B.4	Represent complex numbers on the complex plane in rectangular and polar form (including real and imaginary numbers), and explain why the rectangular and polar forms of a given complex number represent the same number.	High School - Functions		This should not be tested at the sophomore level because it is usually taught in pre-calculus or trig which most kids don't take.	Not Actionable	Plus standards are not assessed on high stakes assessment. According to page 2 in the Appendix A under the overview #2 specifically addresses this. On page 8 in the Appendix A it is stated this not included in traditional pathways. In the Common Core State Standards on page 57 indicate these are to prepare for advanced courses and may appear in courses. Students may be address inside a students' course on their course assessments.	Not Actionable	All college and career ready standards (those without a +) are found in each pathway. A few (+) standards are included to increase coherence but are not necessarily expected to be addressed on high stakes assessments" (CCSSM Appendix A, page 2)/ Standards may be addressed inside a students' course on their course assessments. Although a complex number relates to functions, it doesn't warrant a realignment of the standard.
CCSS.Math.Content.HS: N-CN.B.5	Represent addition, subtraction, multiplication, and conjugation of complex numbers geometrically on the complex plane; use properties of this representation for computation.			This standard is a (+) standard in the original CCSS documents and while it targets viable mathematical knowledge, it is not necessarily appropriate for all students. I suspect that only those who intend to pursue post-secondary schooling in a STEM field would ever even have a need for exposure to/competency in this standard, so requiring it for all graduates is not appropriate.	Not Actionable	Plus standards are not assessed on high stakes assessment. According to page 2 in the Appendix A under the overview #2 specifically addresses this. On page 8 in the Appendix A it is stated this not included in traditional pathways. In the Common Core State Standards on page 57 indicate these are to prepare for advanced courses and may appear in courses. Students may be address inside a students' course on their course assessments.	Not Actionable	All college and career ready standards (those without a +) are found in each pathway. A few (+) standards are included to increase coherence but are not necessarily expected to be addressed on high stakes assessments" (CCSSM Appendix A, page 2)/ Standards may be addressed inside a students' course on their course assessments. Although a complex number relates to functions, it doesn't warrant a realignment of the standard.
CCSS.Math.Content.HS: N-CN.B.6	Calculate the distance between numbers in the complex plane as the modulus of the difference, and the midpoint of a segment as the average of the numbers at its endpoints.			This standard is a (+) standard in the original CCSS documents and while it targets viable mathematical knowledge, it is not necessarily appropriate for all students. I suspect that only those who intend to pursue post-secondary schooling in a STEM field would ever even have a need for exposure to/competency in this standard, so requiring it for all graduates is not appropriate.	Not Actionable	Plus standards are not assessed on high stakes assessment. According to page 2 in the Appendix A under the overview #2 specifically addresses this. On page 8 in the Appendix A it is stated this not included in traditional pathways. In the Common Core State Standards on page 57 indicate these are to prepare for advanced courses and may appear in courses. Students may be address inside a students' course on their course assessments.	Not Actionable	All college and career ready standards (those without a +) are found in each pathway. A few (+) standards are included to increase coherence but are not necessarily expected to be addressed on high stakes assessments" (CCSSM Appendix A, page 2)/ Standards may be addressed inside a students' course on their course assessments. Although a complex number relates to functions, it doesn't warrant a realignment of the standard.

Standards or Mathematical Practices	Description	New Grade level suggestion	New Description Please explain how you would break up the standard:	Comments	small group recommendation	small group rationale	final recommendation	final rationale
CCSS.Math.Content.HS: N-VM.A.1	Recognize vector quantities as having both magnitude and direction. Represent vector quantities by directed line segments, and use appropriate symbols for vectors and their magnitudes (e.g., $\vec{v}$ , $ \vec{v} $ , $\ \vec{v}\ $ , $v$ ).			This standard is a (+) standard in the original CCSS documents and while it targets viable mathematical knowledge, it is not necessarily appropriate for all students. I suspect that only those who intend to pursue post-secondary schooling in a STEM field would ever even have a need for exposure to/competency in this standard, so requiring it for all graduates is not appropriate.	Not Actionable	Plus standards are not assessed on high stakes assessment. According to page 2 in the Appendix A under the overview #2 specifically addresses this. On page 8 in the Appendix A it is stated this not included in traditional pathways. In the Common Core State Standards on page 57 indicate these are to prepare for advanced courses and may appear in courses. Students may be address inside a students' course on their course assessments.	Not Actionable	All college and career ready standards (those without a +) are found in each pathway. A few (+) standards are included to increase coherence but are not necessarily expected to be addressed on high stakes assessments” (CCSSM Appendix A, page 2)/ Standards may be addressed inside a students' course on their course assessments.
CCSS.Math.Content.HS: N-VM.A.2	Find the components of a vector by subtracting the coordinates of an initial point from the coordinates of a terminal point.			This standard is a (+) standard in the original CCSS documents and while it targets viable mathematical knowledge, it is not necessarily appropriate for all students. I suspect that only those who intend to pursue post-secondary schooling in a STEM field would ever even have a need for exposure to/competency in this standard, so requiring it for all graduates is not appropriate.	Not Actionable	Plus standards are not assessed on high stakes assessment. According to page 2 in the Appendix A under the overview #2 specifically addresses this. On page 8 in the Appendix A it is stated this not included in traditional pathways. In the Common Core State Standards on page 57 indicate these are to prepare for advanced courses and may appear in courses. Students may be address inside a students' course on their course assessments.	Not Actionable	All college and career ready standards (those without a +) are found in each pathway. A few (+) standards are included to increase coherence but are not necessarily expected to be addressed on high stakes assessments” (CCSSM Appendix A, page 2)/ Standards may be addressed inside a students' course on their course assessments.
CCSS.Math.Content.HS: N-VM.A.3	Solve problems involving velocity and other quantities that can be represented by vectors.			This standard is a (+) standard in the original CCSS documents and while it targets viable mathematical knowledge, it is not necessarily appropriate for all students. I suspect that only those who intend to pursue post-secondary schooling in a STEM field would ever even have a need for exposure to/competency in this standard, so requiring it for all graduates is not appropriate.	Not Actionable	Plus standards are not assessed on high stakes assessment. According to page 2 in the Appendix A under the overview #2 specifically addresses this. On page 8 in the Appendix A it is stated this not included in traditional pathways. In the Common Core State Standards on page 57 indicate these are to prepare for advanced courses and may appear in courses. Students may be address inside a students' course on their course assessments.	Not Actionable	All college and career ready standards (those without a +) are found in each pathway. A few (+) standards are included to increase coherence but are not necessarily expected to be addressed on high stakes assessments” (CCSSM Appendix A, page 2)/ Standards may be addressed inside a students' course on their course assessments.

Standards or Mathematical Practices	Description	New Grade level suggestion	New Description Please explain how you would break up the standard:	Comments	small group recommendation	small group rationale	final recommendation	final rationale
CCSS.Math.Content.HS: N-VM.B.4a	Add vectors end-to-end, component-wise, and by the parallelogram rule. Understand that the magnitude of a sum of two vectors is typically not the sum of the magnitudes.			This standard is a (+) standard in the original CCSS documents and while it targets viable mathematical knowledge, it is not necessarily appropriate for all students. I suspect that only those who intend to pursue post-secondary schooling in a STEM field would ever even have a need for exposure to/competency in this standard, so requiring it for all graduates is not appropriate.	Not Actionable	Plus standards are not assessed on high stakes assessment. According to page 2 in the Appendix A under the overview #2 specifically addresses this. On page 8 in the Appendix A it is stated this not included in traditional pathways. In the Common Core State Standards on page 57 indicate these are to prepare for advanced courses and may appear in courses. Students may be address inside a students' course on their course assessments.	Not Actionable	All college and career ready standards (those without a +) are found in each pathway. A few (+) standards are included to increase coherence but are not necessarily expected to be addressed on high stakes assessments” (CCSSM Appendix A, page 2)/ Standards may be addressed inside a students' course on their course assessments.
CCSS.Math.Content.HS: N-VM.B.4b	Given two vectors in magnitude and direction form, determine the magnitude and direction of their sum.			This standard is a (+) standard in the original CCSS documents and while it targets viable mathematical knowledge, it is not necessarily appropriate for all students. I suspect that only those who intend to pursue post-secondary schooling in a STEM field would ever even have a need for exposure to/competency in this standard, so requiring it for all graduates is not appropriate.	Not Actionable	Plus standards are not assessed on high stakes assessment. According to page 2 in the Appendix A under the overview #2 specifically addresses this. On page 8 in the Appendix A it is stated this not included in traditional pathways. In the Common Core State Standards on page 57 indicate these are to prepare for advanced courses and may appear in courses. Students may be address inside a students' course on their course assessments.	Not Actionable	All college and career ready standards (those without a +) are found in each pathway. A few (+) standards are included to increase coherence but are not necessarily expected to be addressed on high stakes assessments” (CCSSM Appendix A, page 2)/ Standards may be addressed inside a students' course on their course assessments.
CCSS.Math.Content.HS: N-VM.B.4c	Understand vector subtraction $-$ as $+$ $(-)$ , where $-$ is the additive inverse of $v$ , with the same magnitude as $v$ and pointing in the opposite direction. Represent vector subtraction graphically by connecting the tips in the appropriate order, and perform vector subtraction component-wise.			This standard is a (+) standard in the original CCSS documents and while it targets viable mathematical knowledge, it is not necessarily appropriate for all students. I suspect that only those who intend to pursue post-secondary schooling in a STEM field would ever even have a need for exposure to/competency in this standard, so requiring it for all graduates is not appropriate.	Not Actionable	Plus standards are not assessed on high stakes assessment. According to page 2 in the Appendix A under the overview #2 specifically addresses this. On page 8 in the Appendix A it is stated this not included in traditional pathways. In the Common Core State Standards on page 57 indicate these are to prepare for advanced courses and may appear in courses. Students may be address inside a students' course on their course assessments.	Not Actionable	All college and career ready standards (those without a +) are found in each pathway. A few (+) standards are included to increase coherence but are not necessarily expected to be addressed on high stakes assessments” (CCSSM Appendix A, page 2)/ Standards may be addressed inside a students' course on their course assessments.

Standards or Mathematical Practices	Description	New Grade level suggestion	New Description Please explain how you would break up the standard:	Comments	small group recommendation	small group rationale	final recommendation	final rationale
CCSS.Math.Content.HS: N-VM.B.5a	Represent scalar multiplication graphically by scaling vectors and possibly reversing their direction; perform scalar multiplication component-wise, e.g., as $(x, y) = (cx, cy)$ .			This standard is a (+) standard in the original CCSS documents and while it targets viable mathematical knowledge, it is not necessarily appropriate for all students. I suspect that only those who intend to pursue post-secondary schooling in a STEM field would ever even have a need for exposure to/competency in this standard, so requiring it for all graduates is not appropriate.	Not Actionable	Plus standards are not assessed on high stakes assessment. According to page 2 in the Appendix A under the overview #2 specifically addresses this. On page 8 in the Appendix A it is stated this not included in traditional pathways. In the Common Core State Standards on page 57 indicate these are to prepare for advanced courses and may appear in courses. Students may be address inside a students' course on their course assessments.	Not Actionable	Plus standards are not assessed on high stakes assessment. According to page 2 in the Appendix A under the overview #2 specifically addresses this. On page 8 in the Appendix A it is stated this not included in traditional pathways. In the Common Core State Standards on page 57 indicate these are to prepare for advanced courses and may appear in courses. Students may be address inside a students' course on their course assessments.
CCSS.Math.Content.HS: N-VM.B.5b	Compute the magnitude of a scalar multiple $c\mathbf{v}$ using $\ c\mathbf{v}\  =  c \ \mathbf{v}\ $ . Compute the direction of $c\mathbf{v}$ knowing that when $c > 0$ , the direction of $c\mathbf{v}$ is either along (for $c > 0$ ) or against (for $c < 0$ ) $\mathbf{v}$ .			This standard is a (+) standard in the original CCSS documents and while it targets viable mathematical knowledge, it is not necessarily appropriate for all students. I suspect that only those who intend to pursue post-secondary schooling in a STEM field would ever even have a need for exposure to/competency in this standard, so requiring it for all graduates is not appropriate.	Not Actionable	Plus standards are not assessed on high stakes assessment. According to page 2 in the Appendix A under the overview #2 specifically addresses this. On page 8 in the Appendix A it is stated this not included in traditional pathways. In the Common Core State Standards on page 57 indicate these are to prepare for advanced courses and may appear in courses. Students may be address inside a students' course on their course assessments.	Not Actionable	All college and career ready standards (those without a +) are found in each pathway. A few (+) standards are included to increase coherence but are not necessarily expected to be addressed on high stakes assessments" (CCSSM Appendix A, page 2)/ Standards may be addressed inside a students' course on their course assessments.
CCSS.Math.Content.HS: N-VM.C.6	Use matrices to represent and manipulate data, e.g., to represent payoffs or incidence relationships in a network.			This standard is a (+) standard in the original CCSS documents and while it targets viable mathematical knowledge, it is not necessarily appropriate for all students. I suspect that only those who intend to pursue post-secondary schooling in a STEM field would ever even have a need for exposure to/competency in this standard, so requiring it for all graduates is not appropriate.	Not Actionable	Plus standards are not assessed on high stakes assessment. According to page 2 in the Appendix A under the overview #2 specifically addresses this. On page 8 in the Appendix A it is stated this not included in traditional pathways. In the Common Core State Standards on page 57 indicate these are to prepare for advanced courses and may appear in courses. Students may be address inside a students' course on their course assessments.	Not Actionable	All college and career ready standards (those without a +) are found in each pathway. A few (+) standards are included to increase coherence but are not necessarily expected to be addressed on high stakes assessments" (CCSSM Appendix A, page 2)/ Standards may be addressed inside a students' course on their course assessments.

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CCSS.Math.Content.HS: N-VM.C.7	Multiply matrices by scalars to produce new matrices, e.g., as when all of the payoffs in a game are doubled.			This standard is a (+) standard in the original CCSS documents and while it targets viable mathematical knowledge, it is not necessarily appropriate for all students. I suspect that only those who intend to pursue post-secondary schooling in a STEM field would ever even have a need for exposure to/competency in this standard, so requiring it for all graduates is not appropriate.	Not Actionable	Plus standards are not assessed on high stakes assessment. According to page 2 in the Appendix A under the overview #2 specifically addresses this. On page 8 in the Appendix A it is stated this not included in traditional pathways. In the Common Core State Standards on page 57 indicate these are to prepare for advanced courses and may appear in courses. Students may be address inside a students' course on their course assessments.	Not Actionable	All college and career ready standards (those without a +) are found in each pathway. A few (+) standards are included to increase coherence but are not necessarily expected to be addressed on high stakes assessments" (CCSSM Appendix A, page 2)/ Standards may be addressed inside a students' course on their course assessments.
CCSS.Math.Content.HS: N-VM.C.8	Add, subtract, and multiply matrices of appropriate dimensions.			This standard is a (+) standard in the original CCSS documents and while it targets viable mathematical knowledge, it is not necessarily appropriate for all students. I suspect that only those who intend to pursue post-secondary schooling in a STEM field would ever even have a need for exposure to/competency in this standard, so requiring it for all graduates is not appropriate.	Not Actionable	Plus standards are not assessed on high stakes assessment. According to page 2 in the Appendix A under the overview #2 specifically addresses this. On page 8 in the Appendix A it is stated this not included in traditional pathways. In the Common Core State Standards on page 57 indicate these are to prepare for advanced courses and may appear in courses. Students may be address inside a students' course on their course assessments.	Not Actionable	All college and career ready standards (those without a +) are found in each pathway. A few (+) standards are included to increase coherence but are not necessarily expected to be addressed on high stakes assessments" (CCSSM Appendix A, page 2)/ Standards may be addressed inside a students' course on their course assessments.
CCSS.Math.Content.HS: N-VM.C.9	Understand that, unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributive properties.			This standard is a (+) standard in the original CCSS documents and while it targets viable mathematical knowledge, it is not necessarily appropriate for all students. I suspect that only those who intend to pursue post-secondary schooling in a STEM field would ever even have a need for exposure to/competency in this standard, so requiring it for all graduates is not appropriate.	Not Actionable	Plus standards are not assessed on high stakes assessment. According to page 2 in the Appendix A under the overview #2 specifically addresses this. On page 8 in the Appendix A it is stated this not included in traditional pathways. In the Common Core State Standards on page 57 indicate these are to prepare for advanced courses and may appear in courses. Students may be address inside a students' course on their course assessments.	Not Actionable	All college and career ready standards (those without a +) are found in each pathway. A few (+) standards are included to increase coherence but are not necessarily expected to be addressed on high stakes assessments" (CCSSM Appendix A, page 2)/ Standards may be addressed inside a students' course on their course assessments.
CCSS.Math.Content.HS: N-VM.C.10	Understand that the zero and identity matrices play a role in matrix addition and multiplication similar to the role of 0 and 1 in the real numbers. The determinant of a square matrix is nonzero if and only if the matrix has a multiplicative inverse.			This standard is a (+) standard in the original CCSS documents and while it targets viable mathematical knowledge, it is not necessarily appropriate for all students. I suspect that only those who intend to pursue post-secondary schooling in a STEM field would ever even have a need for exposure to/competency in this standard, so requiring it for all graduates is not appropriate.	Not Actionable	Plus standards are not assessed on high stakes assessment. According to page 2 in the Appendix A under the overview #2 specifically addresses this. On page 8 in the Appendix A it is stated this not included in traditional pathways. In the Common Core State Standards on page 57 indicate these are to prepare for advanced courses and may appear in courses. Students may be address inside a students' course on their course assessments.	Not Actionable	All college and career ready standards (those without a +) are found in each pathway. A few (+) standards are included to increase coherence but are not necessarily expected to be addressed on high stakes assessments" (CCSSM Appendix A, page 2)/ Standards may be addressed inside a students' course on their course assessments.

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CCSS.Math.Content.HS: N-VM.C.11	Multiply a vector (regarded as a matrix with one column) by a matrix of suitable dimensions to produce another vector. Work with matrices as transformations of vectors.			This standard is a (+) standard in the original CCSS documents and while it targets viable mathematical knowledge, it is not necessarily appropriate for all students. I suspect that only those who intend to pursue post-secondary schooling in a STEM field would ever even have a need for exposure to/competency in this standard, so requiring it for all graduates is not appropriate.	Not Actionable	Plus standards are not assessed on high stakes assessment. According to page 2 in the Appendix A under the overview #2 specifically addresses this. On page 8 in the Appendix A it is stated this not included in traditional pathways. In the Common Core State Standards on page 57 indicate these are to prepare for advanced courses and may appear in courses. Students may be address inside a students' course on their course assessments.	Not Actionable	All college and career ready standards (those without a +) are found in each pathway. A few (+) standards are included to increase coherence but are not necessarily expected to be addressed on high stakes assessments" (CCSSM Appendix A, page 2)/ Standards may be addressed inside a students' course on their course assessments.
CCSS.Math.Content.HS: N-VM.C.12	Work with $2 \times 2$ matrices as transformations of the plane, and interpret the absolute value of the determinant in terms of area.			This standard is a (+) standard in the original CCSS documents and while it targets viable mathematical knowledge, it is not necessarily appropriate for all students. I suspect that only those who intend to pursue post-secondary schooling in a STEM field would ever even have a need for exposure to/competency in this standard, so requiring it for all graduates is not appropriate.	Not Actionable	Plus standards are not assessed on high stakes assessment. According to page 2 in the Appendix A under the overview #2 specifically addresses this. On page 8 in the Appendix A it is stated this not included in traditional pathways. In the Common Core State Standards on page 57 indicate these are to prepare for advanced courses and may appear in courses. Students may be address inside a students' course on their course assessments.	Not Actionable	All college and career ready standards (those without a +) are found in each pathway. A few (+) standards are included to increase coherence but are not necessarily expected to be addressed on high stakes assessments" (CCSSM Appendix A, page 2)/ Standards may be addressed inside a students' course on their course assessments.
CCSS.Math.Content.HS: A-REI.C.8	Represent a system of linear equations as a single matrix equation in a vector variable.			This standard is a (+) standard in the original CCSS documents and while it targets viable mathematical knowledge, it is not necessarily appropriate for all students. I suspect that only those who intend to pursue post-secondary schooling in a STEM field would ever even have a need for exposure to/competency in this standard, so requiring it for all graduates is not appropriate.	Not Actionable	Plus standards are not assessed on high stakes assessment. According to page 2 in the Appendix A under the overview #2 specifically addresses this. On page 8 in the Appendix A it is stated this not included in traditional pathways. In the Common Core State Standards on page 57 indicate these are to prepare for advanced courses and may appear in courses. Students may be address inside a students' course on their course assessments.	Not Actionable	All college and career ready standards (those without a +) are found in each pathway. A few (+) standards are included to increase coherence but are not necessarily expected to be addressed on high stakes assessments" (CCSSM Appendix A, page 2)/ Standards may be addressed inside a students' course on their course assessments.

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CCSS.Math.Content.HS: A-REI.C.9	Find the inverse of a matrix if it exists and use it to solve systems of linear equations (using technology for matrices of dimension $3 \times 3$ or greater).			This standard is a (+) standard in the original CCSS documents and while it targets viable mathematical knowledge, it is not necessarily appropriate for all students. I suspect that only those who intend to pursue post-secondary schooling in a STEM field would ever even have a need for exposure to/competency in this standard, so requiring it for all graduates is not appropriate.	Not Actionable	Plus standards are not assessed on high stakes assessment. According to page 2 in the Appendix A under the overview #2 specifically addresses this. On page 8 in the Appendix A it is stated this not included in traditional pathways. In the Common Core State Standards on page 57 indicate these are to prepare for advanced courses and may appear in courses. Students may be address inside a students' course on their course assessments.	Not Actionable	All college and career ready standards (those without a +) are found in each pathway. A few (+) standards are included to increase coherence but are not necessarily expected to be addressed on high stakes assessments" (CCSSM Appendix A, page 2)/ Standards may be addressed inside a students' course on their course assessments.
CCSS.Math.Content.HS: F-LE.A.4	For exponential models, express as a logarithm the solution to $ab+B3 = d$ , where a, c, and d are numbers and the base			CCSS.Math.Content.HSF-LE.A.4 should be discarded. Logarithms are obviously important, exponential decay, etc., but they are not something all students need to know so it would be better if they were left out of this document. They will be a part of specific college prep math classes such as College Algebra, and students can elect to take those courses and learn this topic.	Not Actionable	This is a foundational skill for later courses, and aligns well with inverse functions and exponential reasoning.	Not Actionable	This is a foundational skill for later courses, and aligns well with inverse functions and exponential reasoning.
CCSS.Math.Content.HS: G-CO.A.2	Represent transformations in the plane using, e.g., transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch).		Represent and describe transformations in the plane using, e.g., transparencies and geometry software. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch).	reword: describe transformations as functions that take points in the plane as inputs and give other points as outputs.  Standard as a whole seems a bit wordy.	Not Actionable	Detail is necessary for separate components of the standards. This is taught throughout mathematics.	Not Actionable	Detail is necessary for separate components of the standard. This concept is developed throughout secondary mathematics.
CCSS.Math.Content.HSG-SRT.A.1a	A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged.		Represent a dilation from one line to another, parallel line, without changing the line passing through the center.		Not Actionable	Note the beginning portion of standard. No change recommended.	Not Actionable	Note the beginning portion of standard. No change recommended.

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CCSS.Math.Content.HSG-SRT.A.2	Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.		Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.		Not Actionable	The rewrite excludes the use of similarity transformations to explain triangles.	Not Actionable	The rewrite excludes the use of transformations to explain similar triangles. This New Description reduces the conceptual understanding of similarity.
CCSS.Math.Content.HSG-C.A.3	Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.		Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle in contextual problems.	These features are interesting, but I don't think they are necessary.	Not Actionable	Contextual problems are up to a teachers discretion. It develops reasoning and speaks to the mathematical practices in justifying an argument.	Not Actionable	The use of contextual problems is at the teacher's discretion. Constructions develop geometric reasoning and aid in justifying arguments.