

## Grade 5 Math Standards Summary

Total Reviews	1021		Breakdown by Review Type											
Keep As Is	837	Educator			537	<p style="font-size: small;">Suggest Changes 18%</p> <p style="font-size: small;">Keep As Is 82%</p>								
		Elected Official	0											
		Institution or Higher Education Faculty	2											
		K-12 Administrator	127											
		Member of Organization	1											
		Other	93											
		Parent/Guardian	77											
		Student	0											
Suggest Changes	184	Educator	125	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">Change Suggestions</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Removed</td> <td style="text-align: center;">9</td> </tr> <tr> <td style="text-align: center;">Rewritten</td> <td style="text-align: center;">70</td> </tr> <tr> <td style="text-align: center;">Broken Up</td> <td style="text-align: center;">28</td> </tr> <tr> <td style="text-align: center;">Moved to a Different Level</td> <td style="text-align: center;">77</td> </tr> </tbody> </table>	Change Suggestions		Removed	9	Rewritten	70	Broken Up	28	Moved to a Different Level	77
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		Institution or Higher Education Faculty	13											
K-12 Administrator	4													
Member of Organization	0													
Other	0													
Parent/Guardian	42													
Student	0													

Number	Count of Keep	% of Keep	Count of Suggest Changes	% of Suggest Changes	Count of New Level	Count of New Description	Count of Broken	Count of Removed
Math.Content.5.G.A.1	27	79%	7	21%	2	3	2	0
Math.Content.5.G.A.2	29	94%	2	6%	2	0	0	0
Math.Content.5.G.B.3	25	81%	6	19%	3	2	1	0
Math.Content.5.G.B.4	28	85%	5	15%	3	1	0	1
Math.Content.5.MD.A.1	27	82%	6	18%	2	3	1	0
Math.Content.5.MD.B.2	26	81%	6	19%	3	1	1	1
Math.Content.5.MD.C.3a	23	88%	3	12%	2	1	0	0
Math.Content.5.MD.C.3b	23	92%	2	8%	1	1	0	0
Math.Content.5.MD.C.4	26	87%	4	13%	1	2	0	1
Math.Content.5.MD.C.5a	25	83%	5	17%	3	1	1	0
Math.Content.5.MD.C.5b	26	90%	3	10%	2	1	0	0
Math.Content.5.MD.C.5c	23	82%	5	18%	3	1	1	0
Math.Content.5.NBT.A.1	27	87%	4	13%	3	1	0	0
Math.Content.5.NBT.A.2	27	87%	4	13%	1	2	1	0
Math.Content.5.NBT.A.3a	24	100%	0	0%	0	0	0	0
Math.Content.5.NBT.A.3b	23	96%	1	4%	1	0	0	0
Math.Content.5.NBT.A.4	28	97%	1	3%	1	0	0	0
Math.Content.5.NBT.B.5	25	83%	5	17%	1	2	2	0
Math.Content.5.NBT.B.6	22	73%	8	27%	2	3	1	2
Math.Content.5.NBT.B.7	22	69%	10	31%	1	6	2	1
Math.Content.5.NF.A.1	28	85%	5	15%	0	3	2	0
Math.Content.5.NF.A.2	25	74%	9	26%	2	5	2	0

Math.Content.5. NF.B.3	24	80%	6	20%	2	2	1	1
Math.Content.5. NF.B.4a	23	85%	4	15%	2	1	0	1
Math.Content.5. NF.B.4b	18	64%	10	36%	3	5	2	0
Math.Content.5. NF.B.5a	19	73%	7	27%	4	3	0	0
Math.Content.5. NF.B.5b	20	77%	6	23%	2	2	1	1
Math.Content.5. NF.B.6	26	84%	5	16%	3	1	1	0
Math.Content.5. NF.B.7a	23	79%	6	21%	4	2	0	0
Math.Content.5. NF.B.7b	23	79%	6	21%	4	2	0	0
Math.Content.5. NF.B.7c	24	80%	6	20%	6	0	0	0
Math.Content.5. OA.A.1	29	81%	7	19%	2	4	1	0
Math.Content.5. OA.A.2	24	73%	9	27%	2	5	2	0
Math.Content.5. OA.B.3	25	69%	11	31%	4	4	3	0

**Math.Content.5.G.A.1**

Please explain how you would break up the standard:

Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates.

Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., -axis and -coordinate, -axis and -coordinate).

Please explain how you would break up the standard:

"This is assuming that students understand how the perpendicular lines can be placed on a grid.

Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., -axis and -coordinate, -axis and -coordinate).

Use a pair of perpendicular axes, to define a coordinate system. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., -axis and -coordinate, -axis and -coordinate).

This helps students with slopes in middle school.

**Math.Content.5.G.A.2**

I agree with this statement as is, but think it should be included before 5.G.A.1.

This standard helps to connect with science standards, relationships between distance and time, and interpreting graphs.

**Math.Content.5.G.B.3**

Please explain how you would break up the standard:

"State the subcategories needed."

Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.

Understand that attributes belonging to a category of two-dimensional figures also belong to all of its subcategories, e.g. all rectangles are parallelograms.

This should be a mastery concept by fifth grade and introduced as early as third.

**Math.Content.5.G.B.4**

Ill-defined standard that needs clarification as to what specific classes of shapes it applies to. For example, what is the hierarchy of a mix of regular and irregular polygons, or of a mix of convex and non-convex polygons?

This assumes that students know there is a hierarchy based on properties of two-dimensional figures.

This is WAY too much for 5th graders.

Understanding relationships between figures is an important concept and can assist with understanding fractions.

**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), when given a conversion chart, and use these conversions in solving multi-step, real world problems.

Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m).

Please explain how you would break up the standard: Does this standard only include metrics or does it include the English system as well? If so, include it in the standard as both systems are included in Paarc and in textbooks and workbooks created for use in the classroom. The way it is written, makes one think it only includes the metric system.

Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), (6 cups to 3 pints), (9 feet to 108 inches), etc. (and use these conversions in solving multi-step, real world problems.

This one explains what is measured.

To the point and specific

**Math.Content.5.MD.B.2**

Please explain how you would break up the standard:

"This first statement needs to have more specific actions."

Make a line plot to display a data set of measurements in fractions of a unit ( $1/2$ ,  $1/4$ ,  $1/8$ ). Use operations on fractions for this grade to solve problems involving information presented in line plots.

This standard is STUPID! The students should learn how to find the average of Real numbers first, NOT fractions! This is a VERY hard standard for 5th grade.

To the point and specific.

**Math.Content.5.MD.C.3a**

Use a cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, to measure volume.

This statement explains a given understanding for the one cubic unit.

**Math.Content.5.MD.C.3b**

This standard needs to be deleted. If the previous standard 5.MD.C.3a is rewritten this information can be included.

This states the exact way to measure using manipulatives.

**Math.Content.5.MD.C.4**

I don't think this standard needs to exist if standard 5.MD.C.3a is rewritten as suggested in the edit of that standard.

Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft.

It is clearly stated.

Requires a thorough understanding of how to manipulate units.

**Math.Content.5.MD.C.5a**

Please explain how you would break up the standard: This standard requires an excessive amount of interpreting.

Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.

It is clearly stated how to go about finding the volume and relates it to the associative property of multiplication.

**Math.Content.5.MD.C.5b**

Apply the formulas  $V = l \times w \times h$  and  $V = A \times h$  (when formulas are given) for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems.

It is a great follow-up to the previous standard.

**Math.Content.5.MD.C.5c**

Please explain how you would break up the standard:  
"This needs to include the practice of the additive values."

Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.

**Math.Content.5.NBT.A.1**

Recognize that in a multi-digit number, a digit in one place represents 10 times greater than the place to its right and 10 times smaller than the place to its left.

Ever needed to leave a tip? Ever needed to calculate savings? Do you want financially literate citizens? LEAVE THIS STANDARD ALONE. The pure power of the base ten system is incredible, do not deprive our 5th graders from conceptual understanding of this system!

It is very self explanatory. The language is specific and to the point.

The standard is age appropriate and allows for the appropriate progression towards mathematical understanding!

Valuable to determine conceptual understanding of the patterns within place value system

**Math.Content.5.NBT.A.2**

Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10.

[Justification: According to this standard, students are expected to use whole number exponents. But there has been no previous mention of exponents! There is a clear statement in the Introduction to CCSS which reminds us that all learning is based on prior understanding. This fundamental principle has been ignored in many standards. How can students use exponents before they know what they are?]

Please explain how you would break up the standard:

a. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10.

b. Use whole-number exponents to denote powers of 10.

The standard is age appropriate and allows for the appropriate progression towards mathematical understanding!
Very specific and self explanatory.
<b>Math.Content.5.NBT.A.3a</b>
The standard is age appropriate and allows for the appropriate progression towards mathematical understanding!
Very specific and to the point.
<b>Math.Content.5.NBT.A.3b</b>
The standard is age appropriate and allows for the appropriate progression towards mathematical understanding!
Very specific and to the point.
<b>Math.Content.5.NBT.A.4</b>
The standard is age appropriate and allows for the appropriate progression towards mathematical understanding!
Very specific and understandable.
<b>Math.Content.5.NBT.B.5</b>
In theory this is fine, however in practice, students are encountering prompts asking them to fill in upward of 16 blanks in an expanded "standard algorithm"- essentially, they are being asked to solve using an expanded distributive form, rather than the traditional "carry the numbers" in shorthand.
Please explain how you would break up the standard:
Fluently multiply multi-digit whole numbers using the standard algorithm. I think that students should multiply a three digit by a two digit in 5th grade and three digit by three digit and so forth in higher grades.
By this year students should know their multiplication facts and the algorithm. Unfortunately, many public school students still do not know their multiplication facts and cannot do these calculations.
It's to the point.
The standard is age appropriate and allows for the appropriate progression towards mathematical understanding!
<b>Math.Content.5.NBT.B.6</b>
Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors by subtracting multiples of the divisor, or by other strategies. Explain the calculations used. [Justification: Subtraction of well-chosen multiples of the divisor is a very meaningful strategy for "long division", and it easily extends to the traditional algorithm.]
Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division.
Please explain how you would break up the standard: Illustrate and explain the calculation of whole-number quotients with up to four-digit dividends and two-digit divisors by using rectangular arrays, and/or area models.
Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division.
Here again we have "strategies," "properties" and "relationships" rather than simply expecting fluency with division of integers at this grade, as Singapore does.

Students learn differently, I don't like telling them the ways to explain their answers. Students should be given the opportunity to explain it how they want.

The standard is age appropriate and allows for the appropriate progression towards mathematical understanding!

Very specific and to the point.

**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.

Add, subtract, multiply, and divide decimals to hundredths.

As an educator, strategies should be taught but not tested. A student shouldn't be told to solve using the area model when completing an algorithm. The algorithm should be given to the student and the student should have free choice to solve the algorithm in whatever method that benefits them. By testing strategies and requiring students to know several strategies we aren't seeing if they know the skill but instead do they know how to solve the operation using several different methods.

- i. Add and subtract decimals through hundredths. Recognize that these operations are a simple place-value extension of operations on whole numbers.
- ii. Multiply and divide decimals by powers of 10.

[Justification: Attention to what is grade-level appropriate.]

Please explain how you would break up the standard: The standards are too complex and require skills that 5th grade students are unable to comprehend and manipulate.

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.

Please explain how you would break up the standard:

Add and subtract 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.

Here again we have "models," "drawings," "strategies," "properties," and "relationships" rather than simply expecting fluency with four operations with decimals (to three decimal places) at this grade, as Singapore does.

It's specific and to the point.

The standard is age appropriate and allows for the appropriate progression towards mathematical understanding!

This states the use of models or drawings before the actual reasoning of the method.

**Math.Content.5.NF.A.1**

Add and subtract fractions with unlike denominators (including mixed numbers).

Why does the standard have to solved the previous way? Just solve it.



Please explain how you would break up the standard:

This needs to be broken into two parts. Also, it needs to be specific in that it needs to have limits on how big the whole number is in the mixed number. For example, "where the whole number in the mixed number is less than 25".

1) Add and subtract fractions with unlike denominators by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.

2) Add and subtract mixed numbers by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.

Please explain how you would break up the standard:

a. Add and subtract fractions with like denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.

b. Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.

I agree that students should be able to add and subtract fractions with unlike denominators in fifth grade. But, they need to also be able to factor and use the GCF to simplify fractions. Some factoring is introduced in 4th grade, but finding the GCF is not in the fifth standards. It is the first standards listed for 6th grade and should be, IMO, moved to fifth grade with this standard.

The standard is age appropriate and allows for the appropriate progression towards mathematical understanding!

**Math.Content.5.NF.A.2**

Please explain how you would break up the standard: The standard is too broad.

Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.

Please explain how you would break up the standard:

Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem.

Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem.

Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.

The students should NOT have to use visual fraction models to represent the problem. The part for using benchmark fractions and number sense to estimate mentally is a WASTE of teaching time!! The students get HIGHLY confused when taught this standard.

Solve word problems involving addition and subtraction of fractions referring to the same whole. [Justification: Part of the process of problem solving is for students to decide on strategies and check reasonableness of answers.]
It reaffirms the use of benchmark fractions and estimation while teaching and learning.
The prior standard, if changed to include like denominators, would easily lead to this standard.
The standard is age appropriate and allows for the appropriate progression towards mathematical understanding!
<b>Math.Content.5.NF.B.3</b>
Interpret a fraction as division of the numerator by the denominator ( $\frac{a}{b} = a \div b$ ) by solving 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.
Please explain how you would break up the standard: [Leave the first sentence , as written, in fifth grade. Move the second sentence to sixth grade NFB. Remove everything in the second sentence after the words mixed numbers.]
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.
get rid of all common core
The standard is age appropriate and allows for the appropriate progression towards mathematical understanding!
This standard states the need of students to understand what a fraction represents.
<b>Math.Content.5.NF.B.4a</b>
In problem contexts, interpret the product of a fraction times a whole number in two different ways: i. What is $\frac{2}{5}$ of \$.35? Reasoning: $\frac{1}{5}$ of thirty-five cents is 7 cents so $\frac{2}{5}$ of thirty-five cents is 14 cents  ii. What is the total amount of cola in 12 bottles with $\frac{2}{3}$ of a pint in each bottle? Reasoning: $12 \times \frac{2}{3} = \frac{24}{3}$ , which is 24 divided by 3. So $12 \times \frac{2}{3} = 8$ .
[Justification: This connects 5.NF 3 and 5NF 4. It also gives a concrete model for this standard, which is currently more abstract than some 5th grade teachers are comfortable with.
It is specific and to the point.
It is stated exactly as it should be for a teacher to follow.
Not grade/developmentally appropriate
The standard is age appropriate and allows for the appropriate progression towards mathematical understanding!
<b>Math.Content.5.NF.B.4b</b>
Find the area of a rectangle with by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths.
Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles
Find the area of a rectangle with fractional side lengths by tiling it with unit squares representing unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.

Please explain how you would break up the standard:

1. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths.
2. Show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.

Please explain how you would break up the standard:

Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas. (5th grade)

Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. (6th grade or higher)

The standard is age appropriate and allows for the appropriate progression towards mathematical understanding!

**Math.Content.5.NF.B.5a**

Comparing the size of a product in relation to the size of its factors, without performing the indicated multiplication.

Comparing the size of a product to the size of one factor based on the size of the other factor, without performing multiplication.

Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.

"There should be an easier way to state this so a teacher can understand exactly what it is talking about."

The standard is age appropriate and allows for the appropriate progression towards mathematical understanding!

**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; 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  $\frac{a}{b} = \frac{c}{d}$  to the effect of multiplying  $\frac{a}{b}$  by 1.

Please explain how you would break up the standard:

- 1) Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (using the relationship of multiplication by whole numbers greater than 1)
- 2) 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  $\frac{a}{b} = \frac{c}{d}$  to the effect of multiplying  $\frac{a}{b}$  by 1.

The standard is age appropriate and allows for the appropriate progression towards mathematical understanding!

This is all about fraction number sense, and its conceptual understanding is KEY to students math literacy.

What a shame....my child did not even learn multiplication in 3rd an 4th grade thanks to Common Core. So how is he supposed to know content like this. As I said before, he was a guinea pig in 3rd and 4th grade.

**Math.Content.5.NF.B.6**

Please explain how you would break up the standard:

- 1) Solve real world problems involving multiplication of fractions by using visual fraction models or equations to represent the problem. and
- 2) Solve real world problems involving multiplication of mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

Students have a choice to just multiply or to use models. This gives students a right to do what is best/easiest for them.

The standard is age appropriate and allows for the appropriate progression towards mathematical understanding!

This standard states exactly what the calculation must be and how to show the results.

**Math.Content.5.NF.B.7a**

Interpret division of a unit fraction by a non-zero whole number, and compute quotients.

Interpret division of a unit fraction by a non-zero whole number. Find the quotient

Teachers should be able to show and explain the calculation.

**Math.Content.5.NF.B.7b**

Interpret division of a whole number by a unit fraction, and compute quotients.

Interpret division of a whole number by a unit fraction, and find the quotient

It states exactly what needs to be executed.

**Math.Content.5.NF.B.7c**

Compilation of previous standards into a cohesive standard that is specific for its use.

The focus is on demonstrating with models.

**Math.Content.5.OA.A.1**

Please explain how you would break up the standard:

Use parentheses, brackets, or braces in numerical expressions, to evaluate expressions with these symbols.

Use parentheses or brackets in numerical expressions, and evaluate expressions with these symbols.

(Eliminate the need for braces in 5th grade- too complex)

Use parentheses, brackets, AND braces in numerical expressions, and evaluate expressions with these symbols.

Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols involving fractions.

I am a strong supporter of Common Core State Standards, as I believe that these standards will help Louisiana children to become better prepared for the rigors of college, and/or to become better qualified for rewarding, well-paying careers. I recognize that Common Core State Standards were developed by the states---not by the federal government---and that they are not a prescribed curriculum, but rather are a set of standards that will empower Louisiana children to be elevated to the same levels of academic achievement as their counterparts in states that maintain high expectations for their students. Please do not pander to cynical, manipulative people with political agendas who claim that Common Core State Standards are something other than a set of academically ambitious standards that were developed by the states! Since it is in the interest of our great nation to provide ambitious academic standards for our students, true patriots who love America should be strong, vocal supporters of Common Core State Standards.

This standard is age appropriate and allows progression toward utilizing the order of operations in terms of grouping symbols.

**Math.Content.5.OA.A.2**

Interpret numerical expressions without evaluating them.

Please explain how you would break up the standard:

Write simple expressions that record calculations with numbers,

and interpret numerical expressions without evaluating them.

Please explain how you would break up the standard:

Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.

Change the sentence to read "and interpret numerical expression without evaluating them" to while evaluating them. Then add in another sentence include "and interpret numerical expressions without evaluating them."

Write simple expressions that record calculations with whole numbers and fractions, and interpret numerical expressions without evaluating them.

Questions: What defines a simple expression? Would fractions define a simple expression in 5th grade?

Write simple expressions with recorded answers using numbers, and interpret numerical expressions without evaluating them.

**Math.Content.5.OA.B.3**

Please explain how you would break up the standard:

Generate two numerical patterns using two given rules, and identify apparent relationships between corresponding terms. (This should be in 5th grade)

Form ordered pairs consisting of corresponding terms from two numerical patterns, and graph the ordered pairs on a coordinate plane. (This should be in 6th grade)

Please explain how you would break up the standard:

Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms.

Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.

Please explain how you would break up the standard:

Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. Add a phrase which states that the corresponding terms are related to the numerical patterns.

Recognize, describe, and generate a wide variety of patterns.

[Justification: The current standard is much too narrow. Students should be discussing many types of patterns - not particularly those with "rules".

Similar to pattern GLEs of the past, this standard requires students to identify relationships between numbers. It also asks students to generate numerical patterns using given rules- this application really solidifies the pattern concept for our 5th graders. This standard has so many implications in future grade levels, seeing patterns in 5th grade on a coordinate plane leads directly into linear equations and proportional relationships in 7th grade. Please do not limit our students knowledge by removing this standard. These standards are built vertically and changes that do not look at the standards a vertically will hobble our students and teachers.

The standard is age appropriate and allows for the appropriate progression towards mathematical understanding!