

TESTIMONY

H.B. 5078 AN ACT IMPOSING A MORATORIUM ON THE IMPLEMENTATION OF THE COMMON CORE

STATE STANDARDS

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Good afternoon Chairman Fleischmann, Chairman Stillman, Vice Chairmen McCrory and Beth Bye, members of the education committee. Today's conversation is about a set of common standards. They are just that, standards not curriculum. Over the past 3 years and more specifically on this stage over the past months they have been referred to many times as curriculum. I cannot emphasize enough they are not curriculum. They are standards. A set of standards that informs us when to introduce, teach and provide opportunity for our children to learn, practice and master specific skills. The curriculum and method of by which we do this is largely up to the local state and district to determine. The misunderstanding that somehow the content that teachers use is written into the standards needs to be clarified so everyone can form an opinion having all the correct information and an understanding of what we are really talking about. In everything we do we set standards. In sports, in work, in our daily lives we live by sets of standards, things to aspire to, things to achieve, things that inform us what we should be working toward. How we go about learning, working toward and practicing skills that will help us meet those standards is up to a coach, a parent, a boss, ourselves or a teacher. [In my testimony I have included several images to illustrate both the real misconceptions of the standards and the commonalities between the new and old standards.]

Below is an image I received from a very involved parent making a statement about use of Common Core.

"I am not sure how shading in blocks and counting is teaching the basics of multiplication. In my mind, this moves away from the basics, does not teach or reinforce the multiplication process nor does it explain decimal point placement."

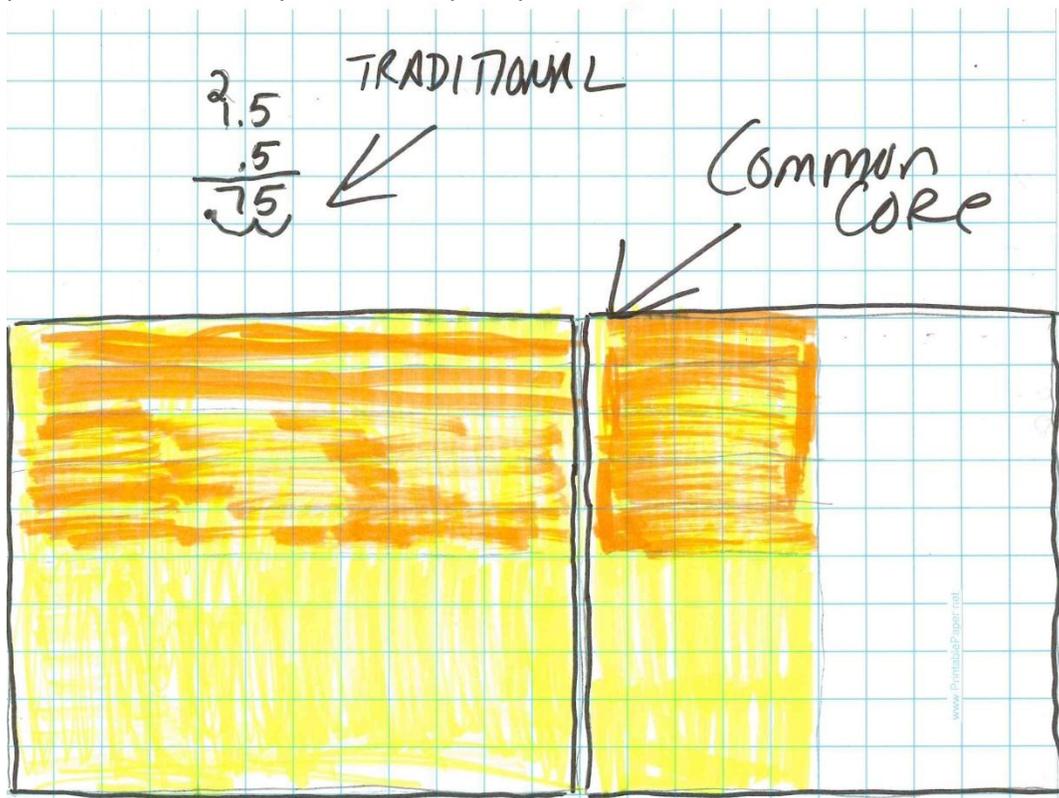


Fig. 2.1. This is an example of the misunderstanding that has been created by so much misinformation being published and pushed out through media. We have been using visual representation to teach mathematics for years. In fact this example is taken from a math book published in

Fig. 2.2. Standards for Practice: Used to develop practice materials or select practice problems

Grade Five Standards for Mathematical Practice	
The K-12 Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. This page gives examples of what the practice standards look like at the specified grade level.	
<i>Standards</i>	<i>Explanations and Examples</i>
Students are expected to: 1. Make sense of problems and persevere in solving them.	Students solve problems by applying their understanding of operations with whole numbers, decimals, and fractions including mixed numbers. They solve problems related to volume and measurement conversions. Students seek the meaning of a problem and look for efficient ways to represent and solve it. They may check their thinking by asking themselves, "What is the most efficient way to solve the problem?", "Does this make sense?", and "Can I solve the problem in a different way?".
Students are expected to: 2. Reason abstractly and quantitatively.	Fifth graders should recognize that a number represents a specific quantity. They connect quantities to written symbols and create a logical representation of the problem at hand, considering both the appropriate units involved and the meaning of quantities. They extend this understanding from whole numbers to their work with fractions and decimals. Students write simple expressions that record calculations with numbers and represent or round numbers using place value concepts.
Students are expected to: 3. Construct viable arguments and critique the reasoning of others.	In fifth grade, students may construct arguments using concrete referents, such as objects, pictures, and drawings. They explain calculations based upon models and properties of operations and rules that generate patterns. They demonstrate and explain the relationship between volume and multiplication. They refine their mathematical communication skills as they participate in mathematical discussions involving questions like "How did you get that?" and "Why is that true?" They explain their thinking to others and respond to others' thinking.
Students are expected to: 4. Model with mathematics.	Students experiment with representing problem situations in multiple ways including numbers, words (mathematical language), drawing pictures, using objects, making a chart, list, or graph, creating equations, etc. Students need opportunities to connect the different representations and explain the connections. They should be able to use all of these representations as needed. Fifth graders should evaluate their results in the context of the situation and whether the results make sense. They also evaluate the utility of models to determine which models are most useful and efficient to solve problems.
Students are expected to: 5. Use appropriate tools strategically.	Fifth graders consider the available tools (including estimation) when solving a mathematical problem and decide when certain tools might be helpful. For instance, they may use unit cubes to fill a rectangular prism and then use a ruler to measure the dimensions. They use graph paper to accurately create graphs and solve problems or make predictions from real world data.
<i>Standards</i>	<i>Explanations and Examples</i>
Students are expected to: 6. Attend to precision.	Students continue to refine their mathematical communication skills by using clear and precise language in their discussions with others and in their own reasoning. Students use appropriate terminology when referring to expressions, fractions, geometric figures, and coordinate grids. They are careful about specifying units of measure and state the meaning of the symbols they choose. For instance, when figuring out the volume of a rectangular prism they record their answers in cubic units.
Students are expected to: 7. Look for and make use of structure.	In fifth grade, students look closely to discover a pattern or structure. For instance, students use properties of operations as strategies to add, subtract, multiply and divide with whole numbers, fractions, and decimals. They examine numerical patterns and relate them to a rule or a graphical representation.
Students are expected to: 8. Look for and express regularity in repeated reasoning.	Fifth graders use repeated reasoning to understand algorithms and make generalizations about patterns. Students connect place value and their prior work with operations to understand algorithms to fluently multiply multi-digit numbers and perform all operations with decimals to hundredths. Students explore operations with fractions with visual models and begin to formulate generalizations.

Fig. 2.3 Grade 5 Math Pre-Common Core Standards

Connecticut Mastery Test – Fourth Generation

Mathematics Grade 5 Test Blueprint

<i>Content Standards and Strands</i>	# of multiple-choice items	# of open-ended items	# of grid-in items
Numerical and Proportional Reasoning			
1. Place Value	6		
2. Pictorial Representations of Numbers	4	2	
3. Equivalent Fractions, Decimals and Percents	4		
4. Order, Magnitude and Rounding of Numbers	7	1	
5. Models for Operations	4	2	
6. Basic Facts			6
7. Computation with Whole Numbers and Decimals	2		4
8. Computation with Fractions and Integers	6		
9. Solve Word Problems	4		2
10. Numerical Estimation Strategies	6		
11. Estimating Solutions to Problems	4		
12. Ratios and Proportions	NT	NT	NT
13. Computation with Percents	NT	NT	NT
Geometry and Measurement			
14. Time	4		
15. Approximating Measures	6		
16. Customary and Metric Measures	3	2	1
17. Geometric Shapes and Properties	2	2	
18. Spatial Relationships	2	1	
Working with Data: Probability and Statistics			
19. Tables, Graphs and Charts	2	2	
20. Statistics and Data Analysis	2	1	
21. Probability	4	1	
24. Classification and Logical Reasoning	2	2	
Algebraic Reasoning: Patterns and Functions			
22. Patterns	2	2	
23. Algebraic Concepts	4		
Integrated Understandings			
25. Mathematical Applications		2	
TOTAL	80	20	13

* NT = Strand not tested at this grade level.

Fig. 2.4 Grade 5 Math Common Core Standards

	Grade 5 Domains	Grade 5 Units ⁶
2011-2012	<ul style="list-style-type: none"> Number and Operations in Base Ten Number and Operation – Fractions 	Unit 1: Understanding the Place Value System Unit 2: Computing with Whole Numbers and Decimals Unit 4: Addition and Subtraction of Fractions Unit 5: Making Sense of Multiplication of Fractions Unit 6: Understanding Division of a Unit Fraction and a Whole Number
2012-2013	<ul style="list-style-type: none"> Number and Operations in Base Ten Number and Operation – Fractions Geometry 	Unit 1: Understanding the Place Value System Unit 2: Computing with Whole Numbers and Decimals Unit 4: Addition and Subtraction of Fractions Unit 5: Making Sense of Multiplication of Fractions Unit 6: Understanding Division of a Unit Fraction and a Whole Number Unit 7: Classifying 2-Dimensional Figures
2013-2014	<ul style="list-style-type: none"> Number and Operations in Base Ten Number and Operation – Fractions Geometry Measurement and Data 	Unit 1: Understanding the Place Value System Unit 2: Computing with Whole Numbers and Decimals Unit 4: Addition and Subtraction of Fractions Unit 5: Making Sense of Multiplication of Fractions Unit 6: Understanding Division of a Unit Fraction and a Whole Number Unit 7: Classifying 2-Dimensional Figures Unit 8: Exploring Volume of Solid Figures
2014-2015	<ul style="list-style-type: none"> Number and Operations in Base Ten Number and Operation – Fractions Geometry Measurement and Data Operations and Algebraic Thinking 	Unit 1: Understanding the Place Value System Unit 2: Computing with Whole Numbers and Decimals Unit 3: Algebraic Connections Unit 4: Addition and Subtraction of Fractions Unit 5: Making Sense of Multiplication of Fractions Unit 6: Understanding Division of a Unit Fraction and a Whole Number Unit 7: Classifying 2-Dimensional Figures Unit 8: Exploring Volume of Solid Figures
Displaced Grade-Level Concepts (Former CT Grade 5 content that is no longer in Grade 5 under the CCSS) <ul style="list-style-type: none"> Variables and equations Numbers – Negative, prime, composite, perfect squares Equivalent fractions, ratios, percents Perimeter and area (Focus is on volume) Calendars and clocks Probability All graphs except line plots, which are used for a very specific purpose Surveys Mean, Median, Mode, Range 		

⁶ The unit titles refer to shells that have been developed to organize the content and practice standards into coherent clusters for curriculum development. These will be available on the Connecticut State Department of Education website. Please use the unit titles to guide the implementation as the unit numbers are subject to change.

In addition to demonstrating the similarities in standards from pre-common core, the above chart also represents an intended gradual roll out of the standards so teachers were not overwhelmed in the first year with any changes to the sequence or depth of their instruction. Nine units previously taught in 5th grade were removed/displaced so more time could be devoted to the essential elements. A pacing guide was also made available.

To say that we do not need standards or we should put a moratorium on the standards is like saying we do not need a road map to guide our vertical instructional development, we do not need to know what we are teaching when. In many of our districts we experience a high percent of transient students. Research tells us transition is difficult enough and is the reason many students fall behind. Without national standards these students will have an even more difficult time adjusting to the transition of a new school.

The conversation we should all be having is how we can best support teachers to help them align their curriculum to the standards so they are teaching skills in the same sequence and to the same level of understanding as the standards suggest. This would be a much better conversation for our teachers and students. Invite them to the table to have a discussion about support and professional development that makes sense. Think of an athlete or musician. They may be great at their sport or playing an instrument, but if you change the playbook or ask them to play a different piece of music they may need time to learn the new playbook or musical piece before they can excel on the field or perform before an audience.

We have to have the capacity or human capital to provide the professional development in the same way we expect our teachers to teach our children. If those providing the professional development are just figuring it out and practicing it for the first time themselves, how can we expect them to teach or coach others with confidence and success. Implementation will take time, but abandoning the standards or placing a moratorium on implementation is the wrong decision. The only way we can get better every day is to practice every day. When we first write legislation we rarely get it right the first time. But we continue to listen to a growing group of stakeholders who are practicing in the field, to get it right. Sometimes it could take years before we get the perfect legislation, but if we just abandoned it in the beginning we would never affect change. You can't get better every day if you stop practicing.

The standards represent good effective teaching strategies we have been doing for years.