

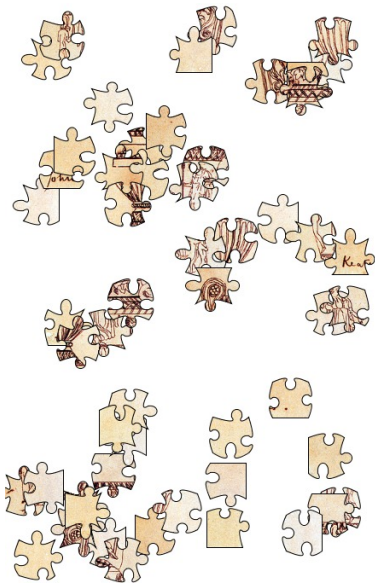
# The Common Core: Where do we go from here?

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Indianapolis, 15 April 2011



By John Keats.





*THOU still unravish'd bride of  
quietness,*

*Thou foster-child of Silence  
and slow Time,*

*Sylvan historian, who canst  
thus express*

*A flowery tale more sweetly  
than our rhyme:*

...

*'Beauty is truth, truth  
beauty,—that is all*

*Ye know on earth, and all ye  
need to know.'*

## Jigsaw puzzle

- Gives complete coverage.
- Pieces are of equal grain size.
- Easy to implement.
- Easy to assess.

## Poem

- Coverage is uneven.
- Difficult to read.
- Unfamiliar language.
- “Beauty” is not assessable.



# “Understand”

## 2.NBT.1

Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones.

## Grade 2 standard, 2.NBT.7

Add and subtract within 1000, 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. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.

# Balance

## Grade 2 standard, 2.NBT.7

Add and subtract within 1000, 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. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.

## Grade 4 standard, 4.NBT.4

Fluently add and subtract multi-digit whole numbers using the standard algorithm.

# Focus in Grades K–8

Counting & Cardinality						Ratios & Proportional Relationships		
Operations and Algebraic Thinking						The Number System		
Number and Operations in Base Ten						Expressions and Equations		
			Fractions				Functions	
Measurement and Data								
Geometry						Geometry		
						Statistics and Probability		
<b>K</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>

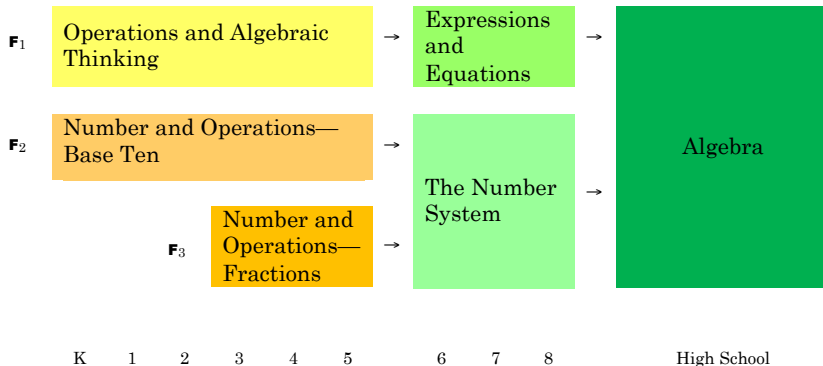
# Reasoning and Sense-Making in High School

- Number and Quantity
  - ...
- Algebra
  - Seeing Structure in Expressions
  - Arithmetic with Polynomials and Rational Expressions
  - Creating Equations
  - Reasoning with Equations and Inequalities
- Functions
  - Interpreting Functions
  - Building Functions
  - Linear, Quadratic, and Exponential Models
  - Trigonometric Functions
- Modeling
  - ...
- Geometry
  - ...
- Statistics and Probability
  - ...

## Standards for Mathematical Practice

- Make sense of problems and persevere in solving them
- Reason abstractly and quantitatively
- Construct viable arguments and critique the reasoning of others
- Model with mathematics
- Use appropriate tools strategically
- Attend to precision
- Look for and make use of structure
- Look for and express regularity in repeated reasoning

# Coherence: Flows in the standards



# Coherence: Ties in the standards

	<b>Operations and Algebraic Thinking</b>	<b>Number and Operations in Base Ten</b>	<b>Fractions</b>
1	Understand and apply properties of operations and the relationship between addition and subtraction.	Use place value understanding and properties of operations to add and subtract.	
2		Use place value understanding and properties of operations to add and subtract.	
3	Understand properties of multiplication and the relationship between multiplication and division.	Use place value understanding and properties of operations to perform multi-digit arithmetic.	
4		Use place value understanding and properties of operations to perform multi-digit arithmetic.	Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
5			Apply and extend previous understandings of multiplication and division to multiply and divide fractions.

- Progressions  
(<http://ime.math.arizona.edu/progressions/>)
- Illustrative Mathematics Project  
(<http://illustrativemathematics.org>).
- Technical manual
- NCTM-AMTE-NCSM-ASSM task force (see description at <http://commoncoretools.wordpress.com>).
- Project headed by Bill Bush to develop criteria for judging textbooks.
- NCTM sample tasks for reasoning and sense-making,  
<http://www.nctm.org/hsfocus>
- My blog, Tools for the Common Core,  
<http://commoncoretools.wordpress.com>



