

# TRADITIONAL & INTEGRATED MATH DISTRICT ADVISORY COMMITTEE

OCTOBER 26, 2016



California Department of  
**EDUCATION**

**CCSS:** Key Shifts in  
**Mathematics**

**FOCUS:** Greater focus  
on fewer topics  
*(narrow and deepen)*

**COHERENCE:** Linking topics and  
thinking across  
grades

**RIGOR:** Pursue conceptual  
understanding, fluency  
and application with  
equal intensity

HIGH SCHOOL MATH:  
TRADITIONAL &  
INTEGRATED

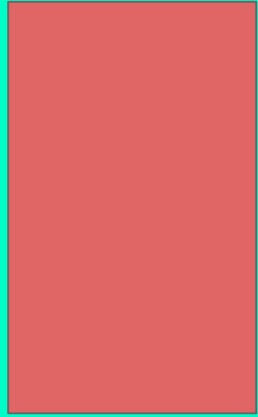
Traditional					Integrated			
Math 8	Algebra 1	Geometry	Algebra 2		Math 8	Integrated I	Integrated II	Integrated III
Rational and Irrational Numbers	Rational and Irrational Numbers	Congruence and Similarity through Transformations	Perform Arithmetic with Complex Numbers		Rational and Irrational Numbers	Seeing Structure in Expressions and Reason Quantitatively	Rational and Irrational Numbers	Apply Trigonometric Ratios involving Triangles
Integer Exponents, Radicals, Proportional Relationships	Seeing Structure in Expressions and Reason Quantitatively	Prove Geometric Theorems	Use Complex Numbers in Polynomial Identities		Integer Exponents, Radicals, Proportional Relationships	Exponential Equations and Functions	Quadratic Equations and Functions	Use Complex Numbers in Polynomial Identities
Linear Equations and Systems	Linear Equations, Systems and Functions	Similarity in Triangles	Seeing Structure in Expressions		Linear Equations and Systems	Linear Equations, Systems and Functions	Prove Geometric Theorems	Seeing Structure in Expressions
Congruence and Similarity through Transformations	Exponential Equations and Functions	Apply Trigonometric Ratios involving Triangles	Perform Arithmetic Operations with Quadratic and Beyond		Congruence and Similarity through Transformations	Congruence and Similarity through Transformations	Similarity in Triangles	Perform Arithmetic Operations with Quadratic and Beyond
Understand and apply Pythagorean Theorem & Volume	Quadratic Equations and Functions	Circles	Create, solve, and understand Equations		Understand and apply Pythagorean Theorem & Volume	Distance Formula and the Pythagorean Theorem	Circles	Create, solve, and understand Equations
Statistics and Probability	Statistics and Probability	Translate between Geometric Descriptions and Prove Theorems	Geometric Properties with Equations		Statistics and Probability	Statistics and Probability	Translate between Geometric Descriptions and Prove Theorems	Geometric Properties with Equations
		Distance Formula and the Pythagorean Theorem	Statistics and Probability				Geometric Measurements, Dimensions, and Modeling	Statistics and Probability
		Geometric Measurements, Dimensions, and Modeling					Probability	
		Probability					Perform Arithmetic with Complex Numbers	



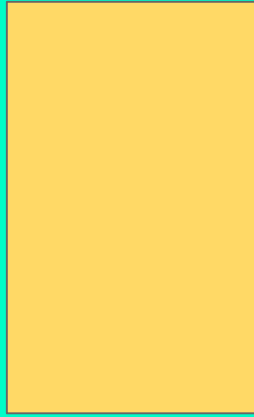
## Comparison of Traditional and Integrated Math Pathways

Traditional				Integrated			
Math 8	Algebra 1	Geometry	Algebra 2	Math 8	Integrated I	Integrated II	Integrated III
Rational and Irrational Numbers	Rational and Irrational Numbers	Congruence and Similarity through Transformations	Perform Arithmetic with Complex Numbers	Rational and Irrational Numbers	Seeing Structure in Expressions and Reason Quantitatively	Rational and Irrational Numbers	Apply Trigonometric Ratios involving Triangles
Integer Exponents, Radicals, Proportional Relationships	Seeing Structure in Expressions and Reason Quantitatively	Prove Geometric Theorems	Use Complex Numbers in Polynomial Identities	Integer Exponents, Radicals, Proportional Relationships	Exponential Equations and Functions	Quadratic Equations and Functions	Use Complex Numbers in Polynomial Identities
Linear Equations and Systems	Linear Equations, Systems and Functions	Similarity in Triangles	Seeing Structure in Expressions	Linear Equations and Systems	Linear Equations, Systems and Functions	Prove Geometric Theorems	Seeing Structure in Expressions
Congruence and Similarity through Transformations	Exponential Equations and Functions	Apply Trigonometric Ratios involving Triangles	Perform Arithmetic Operations with Quadratic and Beyond	Congruence and Similarity through Transformations	Congruence and Similarity through Transformations	Similarity in Triangles	Perform Arithmetic Operations with Quadratic and Beyond
Understand and apply Pythagorean Theorem & Volume	Quadratic Equations and Functions	Circles	Create, solve, and understand Equations	Understand and apply Pythagorean Theorem & Volume	Distance Formula and the Pythagorean Theorem	Circles	Create, solve, and understand Equations
Statistics and Probability	Statistics and Probability	Translate between Geometric Descriptions and Prove Theorems	Geometric Properties with Equations	Statistics and Probability	Statistics and Probability	Translate between Geometric Descriptions and Prove Theorems	Geometric Properties with Equations
		Distance Formula and the Pythagorean Theorem	Statistics and Probability			Geometric Measurements, Dimensions, and Modeling	Statistics and Probability
		Geometric Measurements, Dimensions, and Modeling				Probability	
		Probability				Perform Arithmetic with Complex Numbers	

ALGEBRA 1



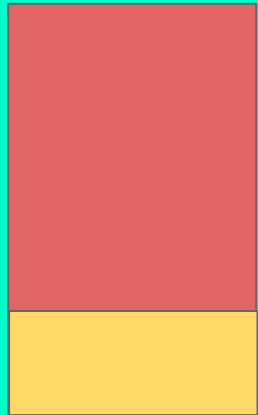
GEOMETRY



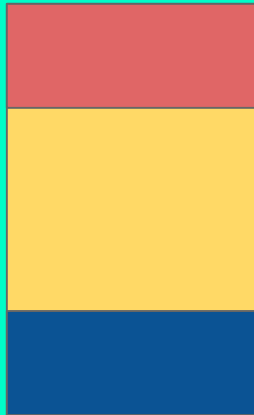
ALGEBRA 2



INTEGRATED I



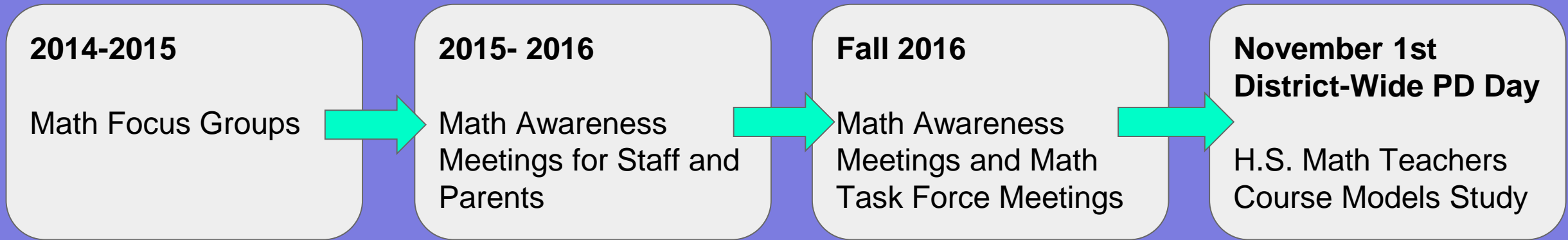
INTEGRATED II



INTEGRATED III



# Timeline



# UC APPROVED MATH SEQUENCES

**Does the University have a recommended course sequence for mathematics? Will UC approve an integrated math sequence to satisfy the "c" subject requirement?**

UC does not have a preferred math course sequence. Individual schools or districts may determine the best sequence that will enrich their students' learning whether they choose a single-subject sequence or an integrated math sequence.





## **I What mathematics course sequences will UC accept as satisfying the mathematics (“c”) subject requirement?**

With the implementation of Common Core statewide, UC recognizes the significant curriculum changes being made as high schools develop mathematics transition pathways to meet school- and district-based needs. UC will accept variations in math transition pathways, including, but not limited to, the course sequences described below. These combinations of the single-subject pathway and the integrated pathway are not an exhaustive list, but are examples of how students may fulfill the mathematics (“c”) subject requirement:

- › Algebra 1 → Geometry → Algebra 2
- › Algebra 1 → Geometry → Mathematics 3
- › Algebra 1 → Mathematics 1 → Mathematics 2 → Mathematics 3
- › Algebra 1 → Mathematics 2 → Mathematics 3
- › Geometry → Mathematics 2 → Mathematics 3
- › Geometry → Mathematics 3
- › Mathematics 1 → Mathematics 2 → Mathematics 3
- › Mathematics 1 → Geometry → Algebra 2
- › Mathematics 1 → Geometry → Mathematics 3
- › Mathematics 1 → Mathematics 2 → Algebra 2
- › Mathematics 1 → Mathematics 2 → Advanced Mathematics
- › Mathematics 2 → Mathematics 3

# WHAT'S NEXT?



## NEXT STEPS

- MATH TASK FORCE REVIEWS SITE RECOMMENDATIONS AND DEVELOPS A RECOMMENDATION OF TRADITIONAL OR INTEGRATED HIGH SCHOOL MATH FOR CURRICULUM COUNCIL
- CURRICULUM COUNCIL REVIEWS TASK FORCE RECOMMENDATION AND MAKES A RECOMMENDATION FOR IMPLEMENTATION IN 2017-2018
- ONCE A PATHWAY IS DETERMINED ADOPTION OF MATERIALS AND PROFESSIONAL DEVELOPMENT WILL BE DECIDED UPON

# RESOURCES



**Common Core Math Standards**

<http://www.corestandards.org/Math/>

**Designing High School Math Courses**

[http://www.corestandards.org/assets/CCSSI\\_Mathematics\\_Appendix\\_A.pdf](http://www.corestandards.org/assets/CCSSI_Mathematics_Appendix_A.pdf)