

## Canyons Secondary Mathematics III and III Honors Content Map

Unit 1: Inferences and Conclusions from Data				
Lesson	Sub-lesson number	Title	Standard(s)	Notes
<b>Lesson 1</b>	<b>Using the Normal Curve</b>			
	1.1.1	Normal Distributions and the 68–95–99.7 Rule	S.ID.4★	
	1.1.2	Standard Normal Calculations	S.ID.4★	
	1.1.3	Assessing Normality	S.ID.4★	
<b>Lesson 2</b>	<b>Populations Versus Random Samples and Random Sampling</b>			
	1.2.1	Differences Between Populations and Samples	S.IC.1★	
	1.2.2	Simple Random Sampling	S.IC.2★	Removed from the Core
	1.2.3	Other Methods of Random Sampling	S.IC.2★	Removed from the Core
<b>Lesson 3</b>	<b>Surveys, Experiments, and Observational Studies</b>			
	1.3.1	Identifying Surveys, Experiments, and Observational Studies	S.IC.3★	
	1.3.2	Designing Surveys, Experiments, and Observational Studies	S.IC.3★	
<b>Lesson 4</b>	<b>Estimating Sample Proportions and Sample Means</b>			
	1.4.1	Estimating Sample Proportions	S.IC.4★	
	1.4.2	The Binomial Distribution	S.IC.4★	
	1.4.3	Estimating Sample Means	S.IC.4★	
	1.4.4	Estimating with Confidence	S.IC.4★	
<b>Lesson 5</b>	<b>Comparing Treatments and Reading Reports</b>			
	1.5.1	Evaluating Treatments	S.IC.5★	Removed from the Core
	1.5.2	Designing and Simulating Treatments	S.IC.5★	Removed from the Core
	1.5.3	Reading Reports	S.IC.6★	
	HONORS Sec II 4.3.1	HONORS: Combinations and Permutations	S.CP.9	Pull from Sec II
	HONORS Sec II 4.3.2	HONORS: Probability with Combinatorics	S.CP.9	Pull from Sec II

Unit 2A: Polynomial Relationships				
Lesson	Sub-lesson number	Title	Standard(s)	Notes
Lesson 1	<b>Polynomial Structures and Operating with Polynomials</b>			
	2A.1.1	Structures of Expressions	A.SSE.1a★	
	2A.1.2	Adding and Subtracting Polynomials	A.APR.1	
	2A.1.3	Multiplying Polynomials	A.APR.1	
Lesson 2	<b>Proving Identities</b>			
	2A.2.1	Polynomial Identities	A.SSE.1b★ A.SSE.2 A.APR.4 N.CN.8	
	2A.2.2 HONORS	HONORS: Complex Polynomial Identities	A.SSE.1b★ A.SSE.2 A.APR.4	now in regular Sec III
	2A.2.3 HONORS	HONORS: The Binomial Theorem	A.SSE.1a★ A.SSE.1b★ A.SSE.2 A.APR.4 A.APR.5	now in regular Sec III
Lesson 3	<b>Graphing Polynomial Functions</b>			
	2A.3.1	Describing End Behavior and Turns	F.IF.7c★	
	2A.3.2	The Remainder Theorem	A.APR.2	
	2A.3.3 HONORS	HONORS: Finding Zeros	A.APR.3 N.CN.9 F.IF.7c★	
	2A.3.4	The Rational Root Theorem	A.APR.3	
Lesson 4	<b>Solving Systems of Equations with Polynomials</b>			
	2A.4.1	MOVED TO UNIT 2B		
Lesson 5	<b>Geometric Series</b>			
	2A.5.1	Geometric Sequences	A.SSE.4★	
	2A.5.2	Sum of a Finite Geometric Series	A.SSE.4★	
	2A.5.3	Sum of an Infinite Geometric Series	A.SSE.4★	

**Unit 2B: Rational and Radical Relationships**

Lesson	Sub-lesson number	Title	Standard(s)	Notes
<b>Operating with Rational Expressions</b>				
<b>Lesson 1</b>	2B.1.1	Structures of Rational Expressions	A.SSE.1a★ A.SSE.1b★ A.SSE.2	
	2B.1.2	Rewriting Rational Expressions	A.APR.6	
	2B.1.3 HONORS	HONORS: Adding and Subtracting Rational Expressions	A.APR.7 A.SSE.2	now in regular Sec III
	2B.1.4 HONORS	HONORS: Multiplying Rational Expressions	A.APR.7 A.SSE.2	now in regular Sec III
	2B.1.5 HONORS	HONORS: Dividing Rational Expressions	A.APR.6 A.APR.7 A.SSE.2	now in regular Sec III
<b>Solving Rational and Radical Equations</b>				
<b>Lesson 2</b>	2B.2.1	Solving Rational Equations	A.REI.2	
	2B.2.2	Solving Radical Equations	A.REI.2	
	2B.2.3	Solving Systems of Equations	A.REI.11★	
NEW SECTION ADDED TO UNIT				
<b>Solving Systems of Equations with Polynomials</b>				
<b>Unit 2</b>	2A.4.1	Solving Systems of Equations Graphically	A.REI.11★	
<b>Unit 3: Trigonometry of General Triangles and Trigonometric Functions</b>				
Lesson	Sub-lesson number	Title	Standard(s)	Notes
<b>Radians and the Unit Circle</b>				
<b>Lesson 1</b>	3.1.1	Radians	F.TF.1 F.TF.2	
	3.1.2	The Unit Circle	F.TF.2	
	3.1.3	Special Angles in the Unit Circle	F.TF.3	
	Sec II 5.8.2	Writing Trig Expressions in Equivalent Forms	F.TF.3	Pull from Sec II
	3.1.4	Evaluating Trigonometric Functions	F.TF.2	

<b>HONORS: Trigonometry of General Angles</b>				
<b>Lesson 2</b>	3.2.1 HONORS	HONORS: Proving the Law of Sines	G.SRT.9 G.SRT.10	now in regular Sec III
	3.2.2 HONORS	HONORS: Proving the Law of Cosines	G.SRT.10	now in regular Sec III
	3.2.3 HONORS	HONORS: Applying the Laws of Sines and Cosines	G.SRT.11	now in regular Sec III
	HONORS Sec II 5.9.6	Prove the addition and subtraction formulas for sine, cosine, and tangent	F.TF.4	Pull from Sec II
<b>Graphs of Trigonometric Functions</b>				
<b>Lesson 3</b>	3.3.1	Periodic Phenomena and Amplitude, Frequency, and Midline	F.TF.5★	
	3.3.2	Using Trigonometric Functions to Model Periodic Phenomena	F.TF.5★	
<b>Unit 4A: Mathematical Modeling of Inverse, Logarithmic, and Trigonometric Functions</b>				
<b>Lesson</b>	<b>Sub-lesson number</b>	<b>Title</b>	<b>Standard(s)</b>	<b>Standard(s)</b>
<b>Inverses of Functions</b>				
<b>Lesson 1</b>	4A.1.1	Determining Inverses of Quadratic Functions	F.BF.4a	
	4A.1.2	Determining Inverses of Other Functions	F.BF.4a	
	4A.1.3 HONORS	HONORS: Finding Inverses of Functions in Various Forms	F.BF.4c	
	4A.1.4 HONORS	HONORS: Restricting the Domain to Find Inverses	F.BF.4d F.TF.6	
	4A.1.5 HONORS	HONORS: Inverses of Exponential and Logarithmic Functions	F.BF.5	

<b>Modeling Logarithmic Functions</b>				
<b>Lesson 2</b>	4A.2.1	Logarithmic Functions as Inverses	F.BF.4a F.LE.4★	
	4A.2.2	Common Logarithms	F.IF.8 F.LE.4★	
	4A.2.3	Natural Logarithms	F.IF.8 F.LE.4★	
	4A.2.4	Graphing Logarithmic Functions	F.IF.7e★	
	4A.2.5	Interpreting Logarithmic Models	F.IF.4★ F.IF.5★ F.IF.6★	
<b>Modeling Trigonometric Functions</b>				
<b>Lesson 3</b>	4A.3.1	Graphing the Sine Function	F.IF.7e★	
	4A.3.2	Graphing the Cosine Function	F.IF.7e★	
<b>Unit 4B: Mathematical Modeling and Choosing a Model</b>				
<b>Lesson</b>	<b>Sub-lesson number</b>	<b>Title</b>	<b>Standard(s)</b>	<b>Standard(s)</b>
<b>Creating Equations</b>				
<b>Lesson 1</b>	4B.1.1	Creating Equations in One Variable	A.CED.1★ F.LE.5	
	4B.1.2	Representing and Interpreting Constraints	A.CED.3★	
	4B.1.3	Rearranging Formulas	A-CED.4★	
<b>Transforming a Model and Combining Functions</b>				
<b>Lesson 2</b>	4B.2.1	Transformations of Parent Graphs	F.BF.3	
	4B.2.2	Recognizing Odd and Even Functions	F.BF.3	
	4B.2.3	Combining Functions	F.BF.1b★	
	4B.2.4 HONORS	HONORS: Composition of Functions	F.BF.1c★	
	4B.2.5 HONORS	HONORS: Verifying Function Inverses by Composition	F.F.4b	

Comparing Properties Within and Between Functions				
Lesson 3	4B.3.1	Reading and Identifying Key Features of Real-World Situation Graphs	F.IF.4★ F.IF.5★ F.IF.6★	
	4B.3.2	Calculating Average Rates of Change	F.IF.6★	
	4B.3.3	Comparing Functions	F.IF.6★ F.IF.9	
Choosing a Model				
Lesson 4	4B.4.1	Linear, Exponential, and Quadratic Functions	A.CED.2★ F.IF.4★ F.IF.5★ F.BF.3	
	4B.4.2	Piecewise, Step, and Absolute Value Functions	F.IF.4★ F.IF.5★ F.IF.7b★ F.BF.3	
	Sec II 2.7.1	Step Functions	F.IF.7b	Pull from Sec II
	4B.4.3	Square Root and Cube Root Functions	F.IF.4★ F.IF.5★ F.IF.7b★ F.BF.3	
Geometric Modeling				
Lesson 5	4B.5.1	Two-Dimensional Cross Sections of Three-Dimensional Objects	G.GMD.4 G.MG.1★	
	HONORS Sec II 6.5.3	HONORS: Cavalieri's Principle	G.GMD.2	Pull from Sec II
	4B.5.2	Density	G.MG.2★	
	4B.5.3	Design	G.MG.3★	

Standards not covered:

HONORS N.CN.3 - Find the conjugate of a complex number

HONORS N.CN.4 - Represent complex numbers on the complex plane

HONORS N.CN.5 - Represent operations on the complex plane

HONORS N.CN.6 - Calculate the distance between numbers as the modulus

HONORS N.CN.10 - Multiply complex numbers in polar form and use DeMoirvre's Theorem

F.IF.7d - Graph rational functions, identify zeros and asymptotes

HONORS F.TF.4 - Use the unit circle to explain symmetry and periodicity of trig functions

HONORS F.IF.7d - graph rational functions, identify point discontinuities

HONORS F.IF.7f - Define a curve parametrically and draw its graph

F.TF.7 - use inverse functions to solve trig equations

F.LE.3 - observe that exponential graphs increase faster than other graphs