

Principles of Agricultural Science – Plant Common Core State Standards for High School Mathematics Alignment

		Unit 1 Worlds of Opportunity	Unit 2 Mineral Soils	Unit 3 Soilless Systems	Unit 4 Anatomy and Physiology	Unit 5 Taxonomy	Unit 6 The Growing Environment	Unit 7 Plant Reproduction	Unit 8 Surviving a Harsh Environment	Unit 9 Crop Production and
CCSS: Conceptual Category – Number and Quantity										
The Real Number System	• Extend the properties of exponents to rational exponents.								X	
	• Use properties of rational and irrational numbers.									
Quantities	• *Reason quantitatively and use units to solve problems.		X	X	X		X	X	X	
The Complex Number System	• Perform arithmetic operations with complex numbers.									
	• Represent complex numbers and their operations on the complex plane.									
	• Use complex numbers in polynomial identities and equations.									
Vector and Matrix Quantities	• Represent and model with vector quantities.									
	• Perform operations on vectors.									
	• Perform operations on matrices and use matrices in applications.									
CCSS: Conceptual Category – Algebra										
Seeing Structure in Expressions	• *Interpret the structure of expressions.				X		X	X		
	• *Write expressions in equivalent forms to solve problems.				X		X	X	X	
Arithmetic with Polynomials and Rational Expressions	• Perform arithmetic operations on polynomials.									
	• Understand the relationship between zeros and factors of polynomials.									
	• Use polynomial identities to solve problems.									
	• Rewrite rational expressions.									
Creating Equations	• *Create equations that describe numbers or relationships.				X					
Reasoning with Equations and Inequalities	• Understand solving equations as a process of reasoning & explain the reasoning.			X			X		X	
	• Solve equations and inequalities in one variable.			X			X		X	
	• Solve systems of equations.			X			x			
	• *Represent and solve equations and inequalities graphically.				X		X	X		

		Unit 1 Worlds of Opportunity	Unit 2 Mineral Soils	Unit 3 Soilless Systems	Unit 4 Anatomy and Physiology	Unit 5 Taxonomy	Unit 6 The Growing Environment	Unit 7 Plant Reproduction	Unit 8 Surviving a Harsh Environment	Unit 9 Crop Production and
CCSS: Conceptual Category – Functions										
Interpreting Functions	• Understand the concept of a function and use function notation.									
	• *Interpret functions that arise in applications in terms of the context.									
	• *Analyze functions using different representations.									
Building Functions	• *Build a function that models a relationship between two quantities.									
	• Build new functions from existing functions.									
Linear, Quadratic, and Exponential Models	• *Construct and compare linear, quadratic, and exponential models and solve problems.						X	X		
	• *Interpret expressions for functions in terms of the situation they model.									
Trigonometric Functions	• Extend the domain of trigonometric functions using the unit circle.									
	• *Model periodic phenomena with trigonometric functions.									
	• Prove and apply trigonometric identities.									
CCSS: Conceptual Category – Geometry										
Congruence	• Experiment with transformations in the plane.									
	• Understand congruence in terms of rigid motions.									
	• Prove geometric theorems.									
	• Make geometric constructions.									
Similarity, Right Triangles, and Trigonometry	• Understand similarity in terms of similarity transformations.									
	• Prove theorems involving similarity.									
	• *Define trigonometric ratios and solve problems involving right triangles.									
	• Apply trigonometry to general triangles.									
Circles	• Understand and apply theorems about circles.								X	
	• Find arc lengths and areas of sectors of circles.								X	
Expressing Geometric Properties with Equations	• Translate between the geometric description and the equation for a conic section.									
	• *Use coordinates to prove simple geometric theorems algebraically.									
Geometric Measurement and Dimension	• *Explain volume formulas and use them to solve problems.			X			X			
	• Visualize relationships between two-dimensional and three-dimensional objects.						X			
Modeling with Geometry	• *Apply geometric concepts in modeling situations.									

		Unit 1 Worlds of Opportunity	Unit 2 Mineral Soils	Unit 3 Soilless Systems	Unit 4 Anatomy and Physiology	Unit 5 Taxonomy	Unit 6 The Growing Environment	Unit 7 Plant Reproduction	Unit 8 Surviving a Harsh Environment	Unit 9 Crop Production and
CCSS: Conceptual Category – Statistics and Probability										
Interpreting Categorical and Quantitative Data	• *Summarize, represent, and interpret data on a single count or measurement variable.			X	X		X	X	X	X
	• *Summarize, represent, and interpret data on two categorical and quantitative variables.		X							
	• *Interpret linear models.									
Making Inferences and Justifying Conclusions	• *Understand and evaluate random processes underlying statistical experiments.									
	• *Make inferences and justify conclusions from sample surveys, experiments, and observational studies.		X	X	X		X	X		
Conditional Probability and the Rules of Probability	• *Understand independence and conditional probability and use them to interpret data.							X		
	• *Use the rules of probability to compute probabilities of compound events in a uniform probability model.							X		
Using Probability to Make Decisions	• *Calculate expected values and use them to solve problems.		X	X	X		X	X	X	X
	• *Use probability to evaluate outcomes of decisions.		X					X		X