



Common Core State Standards (CCSS)
MATHEMATICS
DOMAINS AND CLUSTERS
GRADES 9-12

AT – A – GLANCE

Mathematics Common Core State Standards High School

This table shows the domains and clusters in each conceptual category

Number and Quantity	<p>The Real Number System</p> <ul style="list-style-type: none"> Extend the properties of exponents to rational exponents. Use properties of rational and irrational numbers. 	<p>Quantities</p> <ul style="list-style-type: none"> Reason quantitatively and use units to solve problems. 	<p>The Complex Number System</p> <ul style="list-style-type: none"> Perform arithmetic operations with complex numbers. Represent complex numbers and their operations on the complex plane. Use complex numbers in polynomial identities and equations. 	<p>Vector and Matrix Quantities</p> <ul style="list-style-type: none"> Represent and model with vector quantities. Perform operations on vectors. Perform operations on matrices and use matrices in applications. 		
Algebra	<p>Seeing Structure in Expressions</p> <ul style="list-style-type: none"> Interpret the structure of expressions. Write expressions in equivalent forms to solve problems. 	<p>Arithmetic with Polynomials and Rational Expressions</p> <ul style="list-style-type: none"> Perform arithmetic operations on polynomials. Understand the relationship between zeros and factors of polynomials. Use polynomial identities to solve problems. Rewrite rational expressions. 	<p>Creating Equations</p> <ul style="list-style-type: none"> Create equations that describe numbers or relationships. 	<p>Reasoning with Equations and Inequalities</p> <ul style="list-style-type: none"> Understand solving equations as a process of reasoning and explain the reasoning. Solve equations and inequalities in one variable. Solve systems of equations. Represent and solve equations and inequalities graphically. 		
Functions	<p>Interpreting Functions</p> <ul style="list-style-type: none"> 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. 	<p>Building Functions</p> <ul style="list-style-type: none"> Build a function that models a relationship between two quantities. Build new functions from existing functions. 	<p>Linear, Quadratic, and Exponential Models</p> <ul style="list-style-type: none"> Construct and compare linear, quadratic, and exponential models and solve problems. Interpret expressions for functions in terms of the situation they model. 	<p>Trigonometric Functions</p> <ul style="list-style-type: none"> Extend the domain of trigonometric functions using the unit circle. Model periodic phenomena with trigonometric functions. Prove and apply trigonometric identities. 		
Geometry	<p>Congruence</p> <ul style="list-style-type: none"> Experiment with transformation in the plane. Understand congruence in terms of rigid motions. Prove geometric theorems. Make geometric constructions. 	<p>Similarity, Right Triangles, and Trigonometry</p> <ul style="list-style-type: none"> 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. 	<p>Circles</p> <ul style="list-style-type: none"> Understand and apply theorems about circles Find arc lengths and areas of sectors of circles. 	<p>Expressing Geometric Properties with Equations</p> <ul style="list-style-type: none"> Translate between the geometric description and the equation for a conic section. Use coordinates to prove simple geometric theorems algebraically. 	<p>Geometric Measurement and Dimension</p> <ul style="list-style-type: none"> Explain volume formulas and use them to solve problems. Visualize relationships between two-dimensional and three-dimensional objects. 	<p>Modeling with Geometry</p> <ul style="list-style-type: none"> Apply geometric concepts in modeling situations.
Statistics and Probability	<p>Interpreting Categorical and Quantitative Data</p> <ul style="list-style-type: none"> Summarize, represent, and interpret data on a single count or measurement variable. Summarize represent and interpret data on two categorical and quantitative variables. Interpret linear models. 	<p>Making Inferences and Justifying Conclusions</p> <ul style="list-style-type: none"> Understand and evaluate random processes underlying statistical experiments. Make inferences and justify conclusions from sample surveys, experiments and observational studies. 	<p>Conditional Probability and the Rules of Probability</p> <ul style="list-style-type: none"> Understand independence and conditional probability and use them to interpret data. Use the rules of probability to compute probabilities of compound events in a uniform probability model. 	<p>Using Probability to Make Decisions</p> <ul style="list-style-type: none"> Calculate expected values and use them to solve problems. Use probability to evaluate outcomes of decisions. 		