CCS Standards for Mathematics
Space Academy
2017

	Apollo	Astronomy Night - Planets	Astronomy Show	Astrobiobound	Commercial Spaceflight	Explore the Universe	Full STEAM Ahead-Intro to ISS	Heat Shield Design Challenge	Mercury-Gemini	Model Rockets-Academy	Science of Spaceflight	Science on Orbit	Shuttle History	SLS/Orion	Space Suits	Station Build
GRADE 7																
Ratios & Proportional Relationships																
Analyze proportional relationships and use them to solve real-world mathematical problems																
The Number System																
Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.				X				X		X						
Expressions & Equations																
Use properties of operations to generate equivalent expressions																
Solve real-life and mathematical problems using numerical and algebraic expressions and equations.				X						X						
Geometry																
Draw, construct and describe geometrical figures and describe the relationships between them.						X		X								X
Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.								X								
Statistics & Probability																
Use random sampling to draw inferences about a population.																
Draw informal comparative inferences about two populations.																
Investigate chance processes and develop, use, and evaluate probability models.																
GRADE 8																
The Number System																
Know that there are numbers that are not rational, and approximate them by rational numbers.																
Expressions & Equations																
Work with radicals and integer exponents.																
Understand the connections between proportional relationships, lines, and linear equations.																
Analyze and solve linear equations and pairs of simultaneous linear equations.																
Functions																
Define, evaluate, and compare functions.																
Use functions to model relationships between quantities.																
Geometry																
Understand congruence and similarity using physical models, transparencies, or geometry software.																
Understand and apply the Pythagorean Theorem.																
Solve real-world and mathematical problems involving volume of cylinders, cones and spheres.																
Statistics & Probability																
Investigate patterns of association in bivariate data.																

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HIGH SCHOOL																
The Real Number System																
Extend the properties of exponents to rational exponents																
Use properties of rational and irrational numbers.																
Quantities																
Reason quantitatively and use units to solve problems																
Seeing Structure in Expressions																
Interpret the structure of expressions																
Write expressions in equivalent forms to solve problems																
Arithmetic with Polynomials & Rational Functions																
Perform arithmetic operations on polynomials																
Understand the relationship between zeros and factors of polynomials																
Use polynomial identities to solve problems																
Rewrite rational functions																
Creating Equations																
Create equations that describe numbers or relationships																
Reasoning with Equations and Inequalities																
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																
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 & Exponential Models																
Construct and compare linear and exponential models and solve problems																
Interpret expressions for functions in terms of the situation they model																
Congruence																
Experiment with transformations in the plane																
Understand congruence in terms of rigid motions																
Prove geometric theorems																
Make geometric constructions																X
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																
Find arc lengths and areas of sectors of circles																
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																
Visualize relationships between two-dimensional and three-dimensional objects																X
Modeling with Geometry																
Apply geometric concepts in modeling situations																X
Interpreting Categorical & Quantitative Data																
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																
Conditional Probability and the Rules of Probability																
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																
Using Probability to Make Decisions																
Calculate expected values and use them to solve problems																
Use probability to evaluate outcomes of decisions																