

Subject: Algebra

Year 1, 2

Unit Title	Intro to Functions and Equations	Analyzing Solar Energy (interdisciplinary unit)	Systems of Equations and Inequalities	Crowding and Claustrophobia	Boomerang Math	Radical Yet Rational Math	Prove Your Point
SOI	Logical processes allow representations of equivalence	Understanding solar changes through modeling systems allows us to relate patterns in space and time.	Models of quadratic and exponential relationships allow us to make generalizations about sustainability in our world.	We use patterns in quantity and relationships to understand globalization and sustainability.	We make connections using models to represent relationships.	We model relationships using equivalence with different mathematical models.	Communication with good representations can justify personal beliefs and influence culture.
Key Concept	Logic	Change	Systems	Relationships	Connections	Relationships	Communications
Related Concepts	Representation Equivalence	Modeling Systems Patterns	Models Simplification	Quantity Patterns	Model Representation	Model Equivalence	Justification Representation
Global Context	Scientific and Technical Innovation (through processes)	Orientation in Space and Time	Scientific and Technical Innovation	Globalization and Sustainability	Identities and Relationships	Scientific and Technical Innovation (explored through systems, models, and methods)	Personal and Cultural Expression
Criterion	A. i,ii,iii C. i,ii,iii,iv,v	A. i,ii,iii C. i,ii,iii,iv,v D. i,ii,iii,iv,v	A. i,ii,iii	B. i,ii,iii D. i,ii,iii,iv,v	A. i,ii,iii C.i,ii,iii,iv,v	A. i,ii,iii B. i,ii,iii	A. i,ii,iii C. i,ii,iii,iv,v D. i,ii,iii,iv,v
ATL	Communication Self-Management	Communication Thinking Research	Communication Self-Management Thinking	Research Thinking	Social Self-Management	Thinking	Communication Research Thinking
Content	Variables, expressions, order of operations, distributive property, equations, relations, functions, interpreting graphs of functions, writing and solving multi-step equations, ratios and proportions, percent change, weighted averages	Graphing and solving equations, rate of change/slope, direct variation, arithmetic sequences, proportional and nonproportional relationships, graphing in intercept form, parallel and perpendicular lines, scatter plots, inverse functions	Solving inequalities, multi-step and compound inequalities, graphing systems of inequalities, substitution, elimination	Properties of exponents, rational exponents, scientific notation, exponential functions, growth and decay, recursive formulas	Operations with polynomials, special products, factoring trinomials, squares and perfect squares, graphing, quadratic formula, successive differences, special functions	Square root functions, radical expressions and equations, Pythagorean Theorem, Trigonometric Ratios, Inverse Variation, Rational functions, operations with rational expressions, rational equations	Samples and studies, statistical parameters, distributions of data, comparing sets of data simulation, permutations and combinations, probability of compound events, probability distributions