

Create equations that describe numbers or relationships. Limit these to linear equations and inequalities, and exponential equations. In the case of exponential equations, limit to situations requiring evaluation of exponential functions at integer inputs (Standards A.CED.1–4).	
Standard I.A.CED.1: Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and simple exponential functions.	
Concepts and Skills to Master	
<ul style="list-style-type: none"> • Create linear and exponential equations and inequalities in one variable and use them to solve problems. • Show solutions to inequalities using set notation, interval notation, and inequalities. • Use properties of exponents to solve exponential equations and inequalities, limit to situations to integer solutions (solving more complicated exponential functions using Logarithms occurs in Secondary Mathematics III). 	
Related Standards: Current Course	Related Standards: Future Courses
I.A.REI.1 , I.A.REI.3	II.A.CED.1 , III.A.CED.1 , II.A.REI.4

Support for Teachers

Critical Background Knowledge
<ul style="list-style-type: none"> • Create expressions and equations (6.EE.6 and 7.EE.4) • Solve equations (6.EE.7, 7.EE.4a, and 8.EE.7) • Solve inequalities and use inequality notation (6.EE.8, 7.EE.4b, and 8.EE.7) • Understand and use properties of exponents (8.EE.1)
Academic Vocabulary
Exponential equations, set notation, interval notation
Resources
Curriculum Resources : http://www.uen.org/core/core.do?courseNum=5600#70123

Create equations that describe numbers or relationships. Limit these to linear equations and inequalities, and exponential equations. In the case of exponential equations, limit to situations requiring evaluation of exponential functions at integer inputs (Standards A.CED.1–4).	
Standard I.A.CED.2: Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	
Concepts and Skills to Master	
<ul style="list-style-type: none"> • Create and graph an equation to represent a linear or exponential relationship between two quantities. • Create linear and exponential equations from various models. • Graph equations on coordinate axes with appropriate labels and scales. 	
Related Standards: Current Course	Related Standards: Future Courses
I.N.Q.1 , I.N.Q.2 , I.A.CED.1 , I.A.SSE.1 , I.A.SSE.2, I.A.SSE.3, I.A.REI.6 , I.A.REI.10 , I.F.IF.4 , I.F.IF.5 , I.F.IF.7 , I.F.BF.1 , I.F.BF.2 , I.F.BF.3 , I.F.LE.3	II.A.CED.1 , II.A.SSE.1 , II.A.SSE.2 , II.A.SSE.3 , II.F.IF.4 , II.F.IF.5 , II.F.IF.7 , II.F.BF.1 , II.F.BF.3 , II.F.LE.3 , III.A.CED.1 , III.A.SSE.1 , III.A.SSE.2 , III.A.SSE.4 , III.F.IF.4 , III.F.IF.5 , III.F.IF.7 , III.F.BF.1 , III.F.BF.3 , III.F.LE.3

Support for Teachers

Critical Background Knowledge
<ul style="list-style-type: none"> • Create expressions and equations in two variables (6.EE.9 and 7.EE.4) • Construct a function to model a linear relationship between two quantities (8.F.4) • Describe qualitatively the relationship between two quantities by analyzing a graph (8.F.5)
Academic Vocabulary
dependent variable, independent variable, scale
Resources
Curriculum Resources: http://www.uen.org/core/core.do?courseNum=5600#70123

Create equations that describe numbers or relationships. Limit these to linear equations and inequalities, and exponential equations. In the case of exponential equations, limit to situations requiring evaluation of exponential functions at integer inputs (Standards A.CED.1–4).	
Standard I.A.CED.3: Represent constraints by equations or inequalities and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. <i>For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.</i>	
Concepts and Skills to Master	
<ul style="list-style-type: none"> • Write and graph equations and inequalities representing constraints in contextual situations. • Determine whether a point is a solution to an equation or inequality. • Interpret the meaning and viability of a solution based on the context. 	
Related Standards: Current Course	Related Standards: Future Courses
I.N.Q.2 , I.A.CED.1 , I.A.CED.2 , I.A.CED.4 , I.A.REI.5 , I.A.REI.6 , I.A.REI.10 , I.A.REI.11 , I.A.REI.12 , I.F.IF.4 , I.F.IF.5 , I.F.IF.7 , I.S.ID.7	II.A.CED.1 , II.A.CED.2 , II.A.CED.4 , II.A.REI.7 , II.F.IF.4 , II.F.IF.5 , II.F.IF.7 , III.A.CED.1 , III.A.CED.2 , III.A.CED.3 , III.A.CED.4 , III.A.REI.2 , III.A.REI.11 , III.F.IF.4 , III.F.IF.5 , III.F.IF.7 , P.N.VM.13

Support for Teachers

Critical Background Knowledge
<ul style="list-style-type: none"> • Reason about and solve one-variable equations and inequalities (6.EE.5–8) • Solve word problems leading to equations and inequalities (in one variable) (7.EE.4 and 8.EE.7) • Analyze and solve systems of linear equations graphically (8.EE.8)
Academic Vocabulary
Constraint, viable, half-plane, solution region
Resources
Curriculum Resources: http://www.uen.org/core/core.do?courseNum=5600#70123

Create equations that describe numbers or relationships. Limit these to linear equations and inequalities, and exponential equations. In the case of exponential equations, limit to situations requiring evaluation of exponential functions at integer inputs (Standards A.CED.1–4).	
Standard I.A.CED.4: Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. <i>For example, rearrange Ohm’s Law $V = IR$ to highlight resistance R.</i>	
Concepts and Skills to Master	
<ul style="list-style-type: none"> Extend the concepts used in solving numerical equations to rearranging formulas for a particular variable; limit to linear formulas 	
Related Standards: Current Course	Related Standards: Future Courses
I.A.REI.3 , I.A.REI.5 , I.A.CED.1 , I.A.CED.2 , I.A.SSE.1	II.A.SSE.1 , II.A.CED.1 , II.A.CED.2 , II.A.CED.4 , II.F.IF.8 , II.G.GMD.1 , II.G.GMD.3 , III.A.CED.4 , III.F.IF.8 , III.A.SSE.1

Support for Teachers

Critical Background Knowledge
<ul style="list-style-type: none"> Use variables to write equations and solve them (6.EE.2, 6.EE.6, and 6.EE.7) Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how quantities are related (7.EE.2) Solve multi-step equations (7.EE.3, 7.EE.4, and 8.EE.7)
Academic Vocabulary
Constant, variable, formula, literal equation
Resources
Curriculum Resources: http://www.uen.org/core/core.do?courseNum=5600#70123