

Algebra, Functions, and Data Analysis (AFDA) – Crosswalk (Summary of Revisions): 2016 Mathematics Standards of Learning and Curriculum Framework

Additions (2016 SOL)	Deletions from AFDA (2009 SOL)
<ul style="list-style-type: none"> • AFDA.1f – Determining values of a function for elements in its domain • AFDA.1g – Making connections between and among multiple representations of a function • AFDA.3 EKS – Evaluate the reasonableness of a mathematical model of a practical situation. 	<ul style="list-style-type: none"> • AFDA.1a – Continuity • AFDA.3 – Generate and use a best fit logarithmic equation • AFDA.3 – Describe errors inherent in extrapolation beyond the range of the data • AFDA.3 – Estimate the correlation coefficient when given data and/or scatterplots • AFDA.7b – Analyze a normal distribution using percentiles
Parameter Changes/Clarifications (2016 SOL)	Moves within AFDA (2009 SOL to 2016 SOL)
<ul style="list-style-type: none"> • AFDA.1 US – Clarified that solutions and intervals may be expressed in different formats, including set notation, using equations and inequalities, or interval notation. • AFDA.5 – Solve systems limited to four or fewer equations or inequalities 	<ul style="list-style-type: none"> • AFDA.1b – [Moved to AFDA.1c] • AFDA.1c – [Moved to AFDA.1a] • AFDA.1f – [Moved to AFDA.1b] • AFDA.7c – [Rewritten and moved to AFDA.7b] • AFDA.7d – [Rewritten and moved to AFDA.7c]

EKS = Essential Knowledge and Skills, referring to the column on the far right of the Curriculum Framework

EU = Essential Understandings, referring to the column on the far left of the Curriculum Framework

Comparison of Mathematics Standards of Learning – 2009 to 2016

2009 SOL		2016 SOL	
Algebra and Functions			
AFDA.1	The student will investigate and analyze function (linear, quadratic, exponential, and logarithmic) families and their characteristics. Key concepts include a) continuity; b) local and absolute maxima and minima; c) domain and range; d) zeros; e) intercepts; f) intervals in which the function is increasing/decreasing; g) end behaviors; and h) asymptotes.	AFDA.1	The student will investigate and analyze linear, quadratic, exponential, and logarithmic function families and their characteristics. Key concepts include a) domain and range; b) intervals on which a function is increasing or decreasing; c) absolute maxima and minima d) zeros; e) intercepts; f) values of a function for elements in its domain; g) connections between and among multiple representations of functions using verbal descriptions, tables, equations, and graphs; h) end behavior; and i) vertical and horizontal asymptotes.
AFDA.2	The student will use knowledge of transformations to write an equation, given the graph of a function (linear, quadratic, exponential, and logarithmic).	AFDA.2	The student will use knowledge of transformations to write an equation, given the graph of a linear, quadratic, exponential, and logarithmic function.
AFDA.3	The student will collect data and generate an equation for the curve (linear, quadratic, exponential, and logarithmic) of best fit to model real-world problems or applications. Students will use the best fit equation to interpolate function values, make decisions, and justify conclusions with algebraic and/or graphical models.	AFDA.3	The student will collect and analyze data, determine the equation of the curve of best fit in order to make predictions, and solve practical problems using models of linear, quadratic, and exponential functions.
AFDA.4	The student will transfer between and analyze multiple representations of functions, including algebraic formulas, graphs, tables, and words. Students will select and use appropriate representations for analysis, interpretation, and prediction.	AFDA.4	The student will use multiple representations of functions for analysis, interpretation, and prediction.
AFDA.5	The student will determine optimal values in problem situations by identifying constraints and using linear programming techniques.	AFDA.5	The student will determine optimal values in problem situations by identifying constraints and using linear programming techniques.

2009 SOL		2016 SOL	
Data Analysis			
AFDA.6	The student will calculate probabilities. Key concepts include a) conditional probability; b) dependent and independent events; c) addition and multiplication rules; d) counting techniques (permutations and combinations); and e) Law of Large Numbers.	AFDA.6	The student will calculate probabilities. Key concepts include a) conditional probability; b) dependent and independent events; c) mutually exclusive events; d) counting techniques (permutations and combinations); and e) Law of Large Numbers.
AFDA.7	The student will analyze the normal distribution. Key concepts include a) characteristics of normally distributed data; b) percentiles; c) normalizing data, using z-scores; and d) area under the standard normal curve and probability.	AFDA.7	The student will a) identify and describe properties of a normal distribution; b) interpret and compare z-scores for normally distributed data; and c) apply properties of normal distributions to determine probabilities associated with areas under the standard normal curve.
AFDA.8	The student will design and conduct an experiment/survey. Key concepts include a) sample size; b) sampling technique; c) controlling sources of bias and experimental error; d) data collection; and e) data analysis and reporting.	AFDA.8	The student will design and conduct an experiment/survey. Key concepts include a) sample size; b) sampling technique; c) controlling sources of bias and experimental error; d) data collection; and e) data analysis and reporting.