

## PROGRAM OVERVIEW

# Standards Correlations

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Each topic in this TEKS Advanced Quantitative Reasoning program was written specifically to address the Texas Essential Knowledge and Skills (TEKS). Each topic lists the standards covered in all the lessons, and each lesson lists the standards addressed in that particular lesson. In this section, you'll find a comprehensive list mapping the lessons to the TEKS.

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### TEKS: ADVANCED QUANTITATIVE REASONING STANDARDS CORRELATIONS

#### Unit 1: Descriptive Statistics

Topic	Lesson number	Title	Standard(s)
<b>Topic A</b>	<b>Representing and Interpreting Data</b>		
	1.1	Representing Data Sets	TEKS.AQR.4P
	1.2	Comparing Data Sets	TEKS.AQR.4P
	1.3	Interpreting Data Sets	TEKS.AQR.4O TEKS.AQR.4P
<b>Topic B</b>	<b>Using the Normal Curve</b>		
	1.4	Normal Distributions and the 68–95–99.7 Rule	TEKS.AQR.4P
	1.5	Standard Normal Calculations	TEKS.AQR.4P
	1.6	Assessing Normality	TEKS.AQR.4P
<b>Topic C</b>	<b>Summarizing, Representing, and Finding Patterns in Data</b>		
	1.7	Summarizing Data Using Two-Way Frequency Tables	TEKS.AQR.3A
	1.8	Solving Problems Given Functions Fitted to Data	TEKS.AQR.3A
	1.9	Analyzing Residuals	TEKS.AQR.3A
	1.10	Fitting Linear Functions to Data	TEKS.AQR.3A
<b>Topic D</b>	<b>Interpreting Statistical Models</b>		
	1.11	Interpreting Key Features	TEKS.AQR.3A
	1.12	Calculating and Interpreting the Correlation Coefficient	TEKS.AQR.3A
	1.13	Distinguishing Between Correlation and Causation	TEKS.AQR.3B

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#### Unit 2: Probability

Topic	Lesson number	Title	Standard(s)
<b>Topic A</b>	<b>Events</b>		
	2.1	Describing Events	TEKS.AQR.4B
	2.2	The Addition Rule	TEKS.AQR.4B
<b>Topic B</b>	2.3	Understanding Independent Events	TEKS.AQR.4C
	<b>Conditional Probability</b>		
	2.4	Introducing Conditional Probability	TEKS.AQR.4C TEKS.AQR.4D
<b>Topic C</b>	2.5	Using Two-Way Frequency Tables	TEKS.AQR.4A
	2.6	The Multiplication Rule	TEKS.AQR.4C TEKS.AQR.4D
	<b>Combinatorics</b>		
<b>Topic D</b>	2.7	Combinations and Permutations	TEKS.AQR.2E
	2.8	Probability with Combinatorics	TEKS.AQR.2E
<b>Topic E</b>	<b>Decision Making with Probability</b>		
	2.9	Determining Fairness	TEKS.AQR.4E
<b>Topic F</b>	2.10	Making Decisions Using Probability	TEKS.AQR.4E
	<b>Probability Distributions</b>		
	2.11	Creating Graphs of Probability Distributions	TEKS.AQR.4F
	2.12	Expected Value	TEKS.AQR.4F
	2.13	Developing Probability Distributions	TEKS.AQR.4F
2.14	Using Probability Distributions to Evaluate Outcomes	TEKS.AQR.4F	

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#### Unit 3: Inferences and Conclusions from Data

Topic	Lesson number	Title	Standard(s)
<b>Topic A</b>	<b>Populations Versus Random Samples and Random Sampling</b>		
	3.1	Differences Between Populations and Samples	TEKS.AQR.4M TEKS.AQR.4Q
	3.2	Simple Random Sampling	TEKS.AQR.4M TEKS.AQR.4Q
	3.3	Other Methods of Random Sampling	TEKS.AQR.4M TEKS.AQR.4Q TEKS.AQR.4Q
<b>Topic B</b>	<b>Surveys, Experiments, and Observational Studies</b>		
	3.4	Identifying Surveys, Experiments, and Observational Studies	TEKS.AQR.4L
	3.5	Designing Surveys, Experiments, and Observational Studies	TEKS.AQR.4L
<b>Topic C</b>	<b>Estimating Sample Proportions and Sample Means</b>		
	3.6	Estimating Sample Proportions	TEKS.AQR.4I
	3.7	The Binomial Distribution	TEKS.AQR.4I
	3.8	Estimating Sample Means	TEKS.AQR.4I
	3.9	Estimating with Confidence	TEKS.AQR.4I TEKS.AQR.4Q

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Topic	Lesson number	Title	Standard(s)
Topic D	<b>Comparing Treatments and Reading Reports</b>		
	3.10	Evaluating Treatments	TEKS.AQR.4H TEKS.AQR.4J TEKS.AQR.4K
	3.11	Designing and Simulating Treatments	TEKS.AQR.4H TEKS.AQR.4J TEKS.AQR.4K
	3.12	Reading Reports	TEKS.AQR.2B TEKS.AQR.4H TEKS.AQR.4J TEKS.AQR.4K
Topic E	<b>Making and Analyzing Decisions</b>		
	3.13	Making Decisions	TEKS.AQR.2G TEKS.AQR.4R TEKS.AQR.4S TEKS.AQR.4T
	3.14	Analyzing Decisions	TEKS.AQR.2G TEKS.AQR.4R TEKS.AQR.4S TEKS.AQR.4T

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#### Unit 4: Modeling with Functions

Topic	Lesson number	Title	Standard(s)
<b>Topic A</b>	<b>Units of Measure</b>		
	4.1	Converting Units	TEKS.AQR.2A
<b>Topic B</b>	4.2	Modeling with Units and Precision in Modeling	TEKS.AQR.2A
	<b>Modeling Exponential Functions</b>		
<b>Topic C</b>	4.3	Rewriting Exponential Expressions and Equations	TEKS.AQR.3C
	4.4	Building Functions Including Parameters	TEKS.AQR.3C
<b>Topic D</b>	<b>Modeling Logarithmic Functions</b>		
	4.5	Logarithmic Functions as Inverses	TEKS.AQR.3C
	4.6	Common Logarithms	TEKS.AQR.3C
	4.7	Natural Logarithms	TEKS.AQR.3C
	4.8	Graphing Logarithmic Functions	TEKS.AQR.3C
<b>Topic E</b>	4.9	Interpreting Logarithmic Models	TEKS.AQR.3C
	<b>Graphs of Trigonometric Functions</b>		
	4.10	Periodic Phenomena and Amplitude, Frequency, and Midline	TEKS.AQR.3D
<b>Topic F</b>	4.11	Using Trigonometric Functions to Model Periodic Phenomena	TEKS.AQR.3D
	<b>Modeling Trigonometric Functions</b>		
	4.12	Graphing the Sine Function	TEKS.AQR.3D
<b>Topic G</b>	4.13	Graphing the Cosine Function	TEKS.AQR.3D
	<b>Choosing a Model</b>		
<b>Topic H</b>	4.14	Linear, Exponential, and Quadratic Functions	TEKS.AQR.3C
	4.15	Piecewise, Step, and Absolute Value Functions	TEKS.AQR.3E
<b>Topic I</b>	<b>Algorithms</b>		
	4.16	Introduction to Algorithms	TEKS.AQR.2H
	4.17	Creating and Applying Algorithms	TEKS.AQR.2H

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#### Unit 5: Matrices

Topic	Lesson number	Title	Standard(s)
Topic A	<b>Manipulating Matrices</b>		
	5.1	Performing Operations on Matrices	TEKS.AQR.2F
Topic B	5.2	Using Operations on Matrices	TEKS.AQR.2F
	5.3	Representing and Modeling with Vector Quantities	TEKS.AQR.2F
	5.4	Performing Operations on Vectors	TEKS.AQR.2F
	5.5	Determinants and Vectors	TEKS.AQR.2F
	<b>Using Matrices to Solve Systems of Equations</b>		
Topic C	5.6	Representing a System of Linear Equations as a Single Matrix	TEKS.AQR.2F
	5.7	Finding the Inverse of a Matrix and Using It to Solve a System of Equations	TEKS.AQR.2F

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#### Unit 6: Finance

Topic	Lesson number	Title	Standard(s)
<b>Topic A</b>	<b>Income</b>		
	6.1	Creating Equations and Inequalities—Gross Pay	TEKS.AQR.3F
	6.2	Creating Equations in Context—Net Pay	TEKS.AQR.3F
<b>Topic B</b>	6.3	Income and Constraints	TEKS.AQR.3F
	<b>Credit</b>		
	6.4	Solving Linear Equations—Simple Interest	TEKS.AQR.3G
<b>Topic C</b>	6.5	Analyzing Credit Offers with Linear and Exponential Equations	TEKS.AQR.3G
	<b>Loans and Financed Purchases</b>		
<b>Topic D</b>	6.6	Recursion and Sequences—Payment Plans	TEKS.AQR.3H
	6.7	Finite Geometric Series—Amortized Loans	TEKS.AQR.3H
	<b>Banking</b>		
<b>Topic E</b>	6.8	Interpreting Complicated Expressions—Bank Statements and Savings Accounts	TEKS.AQR.3H
	6.9	Analyzing Savings Account Options Using Equations and Inequalities	TEKS.AQR.3H
<b>Topic E</b>	<b>Investing</b>		
	6.10	Interpreting Expressions and Equations—Stocks and Shares	TEKS.AQR.3H
	6.11	Interpreting Stock Parameters	TEKS.AQR.3H
	6.12	Reading Stock Reports	TEKS.AQR.3H

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**Unit 7: Geometry**

Topic	Lesson number	Title	Standard(s)
<b>Topic A</b>	<b>Investigating Properties of Dilations</b>		
	7.1	Investigating Properties of Parallelism and the Center	TEKS.AQR.2C
	7.2	Investigating Scale Factors	TEKS.AQR.2C
<b>Topic B</b>	<b>Defining and Applying Similarity</b>		
	7.3	Defining Similarity	TEKS.AQR.2D
	7.4	Applying Similarity Using the Angle-Angle (AA) Criterion	TEKS.AQR.2D
<b>Topic C</b>	<b>Proving Similarity</b>		
	7.5	Proving Triangle Similarity Using Side-Angle-Side (SAS) and Side-Side-Side (SSS) Similarity	TEKS.AQR.2D
	7.6	Working with Ratio Segments	TEKS.AQR.2D
	7.7	Proving the Pythagorean Theorem Using Similarity	TEKS.AQR.2D
	7.8	Solving Problems Using Similarity and Congruence	TEKS.AQR.2D
	7.9	Special Right Triangles	TEKS.AQR.2D
<b>Topic D</b>	<b>Exploring Trigonometric Ratios</b>		
	7.10	Defining Trigonometric Ratios	TEKS.AQR.2D
	7.11	Exploring Sine and Cosine As Complements	TEKS.AQR.2D
<b>Topic E</b>	<b>Applying Trigonometric Ratios</b>		
	7.12	Calculating Sine, Cosine, and Tangent	TEKS.AQR.2D
	7.13	Problem Solving with the Pythagorean Theorem and Trigonometry	TEKS.AQR.2D
<b>Topic F</b>	<b>Trigonometry of General Angles</b>		
	7.14	Proving the Law of Sines	TEKS.AQR.2D
	7.15	Proving the Law of Cosines	TEKS.AQR.2D
	7.16	Applying the Laws of Sines and Cosines	TEKS.AQR.2D
<b>Topic G</b>	<b>Using Truth Tables</b>		
	7.17	Using Truth Tables	TEKS.AQR.4G