

Unit	Standards	Lessons	Textbook Correlation
11	<p>A.APR.6 Rewrite simple rational expressions in different forms; write $a(x)/b(x)$ in the form $q(x) + r(x)/b(x)$, where $a(x)$, $b(x)$, $q(x)$, and $r(x)$ are polynomials with the degree of $r(x)$ less than the degree of $b(x)$, using inspection, long division, or, for the more complicated examples, a computer algebra system.</p> <p>A.APR.7 Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions.</p> <p>A.CED.1 Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions</p> <p>A.CED.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.</p> <p>A.REI.2 Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.</p> <p>F.IF.4 For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function</p>	<p>7 lessons 16 days 1 quiz 1 test</p>	<p>11-1 (2 days) 11-2 (2 days) 11-3 (2 days) 11-4 (2 days) Quiz 11-5 (2 days) 11-6 (2 days) 11-7 (2 days)</p>

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	<p>is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.*</p> <p>F.IF.5 Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.*</p>		
12	<p>N.Q.1 Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays</p> <p>N.Q.2 Define appropriate quantities for the purpose of descriptive modeling.</p> <p>S.CP.1 Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events (“or,” “and,” “not”).</p> <p>S.CP.4 Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.</p> <p>S.CP.7 Apply the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$, and interpret the answer in terms of the model.</p> <p>S.CP.8</p>	<p>6 lessons 9 days 1 test</p>	<p>12-2 12-3 12-4 12-5 (2 days) 12-6 12-7 12-8 (Adv Only)</p>

	<p>Apply the general Multiplication Rule in a uniform probability model, $P(A \text{ and } B) = P(A)P(B A) = P(B)P(A B)$, and interpret the answer in terms of the model.</p> <p>S.CP.9 Use permutations and combinations to compute probabilities of compound events and solve problems.</p> <p>S.IC.3 Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.</p> <p>S.ID.1 Represent data with plots on the real number line (dot plots, histograms, and box plots).</p> <p>S.ID.2 Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.</p> <p>S.ID.3 Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).</p>		
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**STANDARDS FOR
MATHEMATICAL PRACTICE**

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for an express regularity in repeated reasoning.

Unit 11: Rational Expressions and Functions

I can simplify rational expressions.

I can multiply and divide rational expressions.

I can divide polynomials.

I can add and subtract rational expressions.

I can solve rational expressions and proportions.

I can write and graph equations for inverse variations.

I can compare direct and inverse variations.

I can graph rational functions.

Unit 12: Data Analysis and Probability

I can organize data in a matrix.

I can add and subtract matrices and multiply a matrix by a scalar.

I can make and interpret frequency tables and histograms.

I can find mean, median, mode, and range.

I can make and interpret box-and-whisker plots.

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- I can find quartiles and percentiles.
- I can classify data and analyze samples and surveys.
- I can find permutations and combinations.
- I can find theoretical and experimental probabilities.
- I can find probabilities of mutually exclusive and overlapping events.
- I can find probabilities of independent and dependent events.