A Correlation of

Pearson
Algebra 1
Common Core
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to the

Common Core State Standards for Mathematics High School

PARRC Model Content Frameworks Mathematics Algebra 1

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PARRC Model Content Frameworks, Mathematics Algebra 1

Introduction

This document demonstrates how ***Pearson Algebra 1 Common Core* ©2015** meets the Common Core State Standards for Mathematics High School, PARRC Model Content Frameworks Mathematics Algebra 1. Correlation references are to the pages of the Student and Teacher's Editions, Concept Bytes, and Learning Resources within the Teacher's Editions.

Pearson Algebra 1 Common Core ©2015 is a rigorous, flexible, and data-driven high school math program designed to ensure high school students master the Common Core State Standards. The program's 5-step lesson design was built for the requirements of the Common Core, and independent research has proven the program's lesson design is effective for all learners.

Pearson Algebra 1 Common Core ©2015 balances conceptual understanding, procedural fluency, and the application of mathematics to solve problems and formulate models. The lesson design of the program was built specifically to meet the "rigor" criterion of the Common Core State Standards.

- Each lesson begins with **Interactive Learning**, the *Solve It!*, which immediately engages students in their daily learning according to the Standards for Mathematical Practice.

- The second step of the lesson, **Guided Instruction**, uses visual learning principles and a Thinking/Reasoning strand (seen in the *Know/Need/Plan* and *Think/Plan/Write* boxes) to introduce the Essential Understanding of the lesson by teaching THROUGH and FOR problem-solving. **Interactive Learning** and **Guided Instruction** are both deliberately designed to address the essential elements in the Common Core conceptual category of mathematical modeling.

- In the third step of the lesson, the **Lesson Check**, *Do you know HOW?* exercises measure students' procedural fluency, while *Do you UNDERSTAND?* problems measure students' conceptual understanding.

- In the fourth step of the lesson, **Practice** problems are designed to develop students' fluency in the Content Standards and proficiency with the Mathematical Practices. Real-world STEM problems as well as problems designed to elicit the use of one or more of the Standards for Mathematical Practice are clearly labeled in the **Practice** step of the lesson.

- The final phase of the lesson, **Assess and Remediate,** features a Lesson Quiz to measure students' understanding of lesson concepts. By utilizing the balanced and proven-effective approach of Pearson's 5-step lesson design, you can teach the Common Core State Standards with confidence.

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Number and Quantity	
The Real Number System N –RN	
Use properties of rational and irrational numbers.	
3. Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational.	**SE/TE: 1.3:** 16-22, **1.4:** 23-28, **1.5:** 30-36, **1.6:** 38-44, **Concept Byte:** 45 **TE: 1.3:** 22A-22B, **1.4:** 28A-28B, **1.5:** 36A-36B, **1.6:** 44A-44B
Quantities★ N –Q	
Reason quantitatively and use units to solve problems.	
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.	**SE/TE: 2.5:** 109-114, **2.6:** 116-121, **Concept Byte:** 122-123, **2.7:** 124-129, **4.4:** 253-259, **5.7:** 336-343, **12.2:** 732-737, **12.4:** 746-751 **TE: 2.5:** 114A-114B, **2.6:** 121A-121B, **2.7:** 129A-129B, **4.4:** 259A-259B, **12.2:** 737A-737B, **5.7:** 343A-343B, **12.4:** 751A-751B
2. Define appropriate quantities for the purpose of descriptive modeling.	**SE/TE: 2.6:** 116-121, **3.3:** 178-183, **4.5:** 262-267, **5.2:** 301-306, **9.3:** 561-566, **12.3:** 738-744 **TE: 2.6:** 121A-121B, **3.3:** 183A-183B, **4.5:** 267A-267B, **5.2:** 306A-306B, **9.3:** 566A-566B, **12.3:** 744A-744B
3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.	**SE/TE: 2.9:** 137-143, **2.10:** 144-150, **6.4:** 387-392, **9.5:** 576-581, **9.6:** 582-588 **TE: 2.9:** 143A-143B, **2.10:** 150A-150B, **6.4:** 392A-392B, **9.3:** 561A-561B, **9.6:** 588A-588B

★ indicates modeling standards
SE = Student Edition
TE = Teacher's Edition

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Algebra	
Seeing Structure in Expressions A-SSE	
Interpret the structure of expressions	
1. Interpret expressions that represent a quantity in terms of its context.★	**SE/TE: 1.1:** 4-9, **1.2:** 10-15, **1.7:** 46-52, **3.7:** 207-213, **4.5:** 262-267, **4.7:** 274-281, **5.3:** 308-314, **5.4:** 315-320, **5.5:** 322-328, **7.6:** 453-459, **7.7:** 460-466, **7.8:** 467-472, **8.5:** 512-517, **8.6:** 518-522, **8.7:** 523-528, **8.8:** 529-533, **9.1:** 546-552, **9.2:** 553-558, **9.5:** 576-581, **9.6:** 582-588 **TE: 1.1:** 9A-9B, **1.2:** 15A-15B, **1.7:** 52A-52B, **3.7:** 213A-213B, **4.5:** 267A-267B, **4.7:** 281A-281B, **5.3:** 314A-314B, **5.4:** 320A-320B, **5.5:** 328A-328B, **7.6:** 459A-459B, **7.7:** 466A-466B, **7.8:** 472A-472B, **8.5:** 517A-517B, **8.6:** 522A-522B, **8.7:** 528A-528B, **8.8:** 533A-533B, **9.1:** 552A-552B, **9.2:** 558A-558B, **9.5:** 581A-581B, **9.6:** 588A-588B
a. Interpret parts of an expression, such as terms, factors, and coefficients.	**SE/TE: 1.1:** 4-9, **1.2:** 10-15, **1.7:** 46-52, **4.5:** 262-267, **4.7:** 274-281, **5.3:** 308-314, **8.5:** 512-517, **8.6:** 518-522, **8.7:** 523-528, **8.8:** 529-533 **TE: 1.1:** 9A-9B, **1.2:** 15A-15B, **1.7:** 52A-52B, **4.5:** 267A-267B, **4.7:** 281A-281B, **5.3:** 314A-314B, **8.5:** 517A-517B, **8.6:** 522A-522B, **8.7:** 528A-528B, **8.8:** 533A-533B
b. Interpret complicated expressions by viewing one or more of their parts as a single entity. For example, interpret $P(1+r)^n$ as the product of P and a factor not depending on P.	**SE/TE: 3.7:** 207-213, **4.7:** 274-281, **7.7:** 460-466, **8.6:** 518-522, **8.7:** 523-528, **8.8:** 529-533, **9.5:** 576-581 **TE: 3.7:** 213A-213B, **4.7:** 281A-281B, **7.7:** 466A-466B, **8.6:** 522A-522B, **8.7:** 528A-528B, **8.8:** 533A-533B, **9.5:** 581A-581B
2. Use the structure of an expression to identify ways to rewrite it. For example, see $x^4 – y^4$ as $(x^2)^2 – (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 – y^2)(x^2 + y^2)$.	**SE/TE: 5.3:** 308-314, **5.4:** 315-320, **5.5:** 322-328, **8.7:** 523-528, **8.8:** 529-533 **TE: 5.3:** 314A-314B, **5.4:** 320A-320B, **5.5:** 328A-328B, **Concept Byte:** 511, **8.7:** 528A-528B, **8.8:** 533A-533B

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Write expressions in equivalent forms to solve problems	
3. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.★	**SE/TE: 9.4:** 568-572, **9.5:** 576-581 **TE: 9.4:** 572A-572B, **9.5:** 581A-581B
a. Factor a quadratic expression to reveal the zeros of the function it defines.	**SE/TE: 9.4:** 568-572 **TE: 9.4:** 572A-572B
b. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.	**SE/TE: 9.5:** 576-581 **TE: 9.5:** 581A-581B
c. Use the properties of exponents to transform expressions for exponential functions. For example the expression 1.15^t can be rewritten as $(1.15^{1/12})^{12t} \approx 1.012^{12t}$ to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.	**SE/TE: 7.7:** 460-466 **TE: 7.7:** 466A-466B
Arithmetic with Polynomials and Rational Expressions A –APR	
Perform arithmetic operations on polynomials	
1. Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.	**SE/TE: 8.1:** 486-491, **8.2:** 492-496, **8.3:** 498-503, **8.4:** 504-509 **TE: 8.1:** 491A-491B, **8.2:** 496A-496B, **Concept Byte:** 497, **8.3:** 503A-503B, **8.4:** 509A-509B
Understand the relationship between zeros and factors of polynomials	
3. Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial.	**SE/TE: 9.3:** 561-566 **TE: 9.3:** 566A-566B

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Creating Equations★ A –CED	
Create equations that describe numbers or relationships	
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.	**SE/TE: 1.8:** 53-58, **2.1:** 81-87, **2.2:** 88-93, **2.3:** 94-100, **2.4:** 102-108, **2.5:** 109-114, **2.7:** 124-129, **2.8:** 130-136, **3.2:** 171-177, **3.3:** 178-183, **3.4:** 186-192, **3.6:** 200-206, **3.7:** 207-213, **3.8:** 214-220, **9.3:** 561-566, **9.4:** 568-572, **9.5:** 576-581, **9.6:** 582-588, **11.5:** 691-697 **TE: 1.8:** 58A-58B, **2.1:** 87A-87B, **2.2:** 93A-93B, **2.3:** 100A-100B, **2.4:** 108A-108B, **2.5:** 114A-114B, **2.7:** 129A-129B, **2.8:** 136A-136B, **3.2:** 177A-177B, **3.3:** 183A-183B, **3.4:** 192A-192B, **3.6:** 206A-206B, **3.7:** 213A-213B, **3.8:** 220A-220B, **9.3:** 566A-566B, **9.4:** 572A-572B, **9.5:** 581A-581B, **9.6:** 588A-588B, **11.5:** 697A-697B
2. Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	**SE/TE: 1.9:** 61-66, **4.5:** 262-267, **5.2:** 301-306, **5.3:** 308-314, **5.4:** 315-320, **5.5:** 322-328, **7.6:** 453-459, **7.7:** 460-466, **9.1:** 546-552, **9.2:** 553-558, **Concept Byte:** 573-574, **10.5:** 639-644, **11.6:** 698-704, **11.7:** 705-712, **Concept Byte:** 713 **TE: Review:** 60, **1.9:** 66A-66B, **4.5:** 267A-267B, **5.2:** 306A-306B, **5.3:** 314A-314B, **5.4:** 320A-320B, **5.5:** 328A-328B, **7.6:** 459A-459B, **7.7:** 466A-466B, **9.1:** 552A-552B, **9.2:** 558A-558B, **10.5:** 644A-644B, **11.6:** 704A-704B, **11.7:** 712A-712B
3. Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.	**SE/TE: 6.4:** 387-392, **6.5:** 394-399, **9.8:** 596-601 **TE: Concept Byte:** 37, **6.4:** 392A-392B, **6.5:** 399A-399B, **9.8:** 601A-601B
4. Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law V = IR to highlight resistance R.	**SE/TE: 2.5:** 109-114, **9.3:** 561-566 **TE: 2.5:** 114A-114B, **9.3:** 566A-566B

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Reasoning with Equations and Inequalities A -RE I	
Understand solving equations as a process of reasoning and explain the reasoning	
1. Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.	**SE/TE: 2.2:** 88-93, **2.3:** 94-100, **2.4:** 102-108, **2.5:** 109-114, **9.5:** 576-581 **TE: Concept Byte:** 59, 80, **2.2:** 93A-93B, **2.3:** 100A-100B, **Concept Byte:** 101, **2.4:** 108A-108B, **2.5:** 114A-114B, **9.5:** 581A-581B
Solve equations and inequalities in one variable	
3. Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.	**SE/TE: 2.1:** 81-87, **2.2:** 88-93, **2.3:** 94-100, **2.4:** 102-108, **2.5:** 109-114, **2.7:** 124-129, **2.8:** 130-136, **3.1:** 164-170, **3.2:** 171-177, **3.3:** 178-183, **3.4:** 186-192, **3.5:** 194-199, **3.6:** 200-206 **TE: 2.1:** 87A-87B, **2.2:** 93A-93B, **2.3:** 100A-100B, **2.4:** 108A-108B, **2.5:** 114A-114B, **2.7:** 129A-129B, **2.8:** 136A-136B, **3.1:** 170A-170B, **3.2:** 177A-177B, **3.3:** 183A-183B, **Concept Byte:** 184-185, **3.4:** 192A-192B, **3.5:** 199A-199B, **3.6:** 206A-206B
4. Solve quadratic equations in one variable.	**SE/TE: 9.3:** 561-566, **Concept Byte:** 567, **9.4:** 568-572, **9.5:** 576-581, **9.6:** 582-588 **TE: 9.3:** 566A-566B, **9.4:** 572A-572B, **9.5:** 581A-581B, **9.6:** 588A-588B
a. Use the method of completing the square to transform any quadratic equation in x into an equation of the form $(x – p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form.	**SE/TE: 9.5:** 576-581, **9.6:** 582-588 **TE: 9.5:** 581A-581B, **9.6:** 588A-588B
b. Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as a ± bi for real numbers a and b.	**SE/TE: 9.3:** 561-566, **9.4:** 568-572, **9.5:** 576-581, **9.6:** 582-588 **TE: 9.3:** 566A-566B, **9.4:** 572A-572B, **9.5:** 581A-581B, **9.6:** 588A-588B

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Solve systems of equations	
5. Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.	**SE/TE: 6.3:** 378-384 **TE: 6.3:** 384A-384B
6. Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.	**SE/TE: 6.1:** 364-369, **Concept Byte:** 370-371, **6.2:** 372-377, **6.3:** 378-384, **Concept Byte:** 385-386, **6.4:** 387-392 **TE: 6.1:** 369A-369B, **6.2:** 377A-377B, **6.3:** 384A-384B, **6.4:** 392A-392B
Represent and solve equations and inequalities graphically	
10. Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).	**SE/TE: 1.9:** 61-66, **4.2:** 240-245, **4.3:** 246-251, **4.4:** 253-259 **TE: 1.9:** 66A-66B, **4.2:** 245A-245B, **4.3:** 251A-251B, **4.4:** 259A-259B
11. Explain why the x-coordinates of the points where the graphs of the equations y = f(x) and y = g(x) intersect are the solutions of the equation f(x) = g(x); find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where f(x) and/or g(x) are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.★	**SE/TE: Concept Byte:** 260-261, 370, **7.6:** 453-459, **9.8:** 596-601 **TE: 7.6:** 459A-459B, **9.8:** 601A-601B
12. Graph the solutions to a linear inequality in two variables as a halfplane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.	**SE/TE: 6.5:** 394-399, **6.6:** 400-405, **Concept Byte:** 406 **TE: 6.5:** 399A-399B, **6.6:** 405A-405B

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Functions	
Interpreting Functions F-IF	
Understand the concept of a function and use function notation	
1. Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then f(x) denotes the output of f corresponding to the input x. The graph of f is the graph of the equation y = f(x).	**SE/TE: 4.6:** 268-273 **TE: 4.6:** 273A-273B
2. Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.	**SE/TE: 4.6:** 268-273 **TE: 4.6:** 273A-273B
3. Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. For example, the Fibonacci sequence is defined recursively by f(0) = f(1) = 1, f(n+1) = f(n) + f(n-1) for n ≥ 1.	**SE/TE: 4.7:** 274-281, **7.8:** 467-472 **TE: 4.7:** 281A-281B, **7.8:** 472A-472B
Interpret functions that arise in applications in terms of the context	
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 is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.★	**SE/TE: 4.1:** 234-239, **4.2:** 240-245, **4.3:** 246-251, **5.3:** 308-314, **5.4:** 315-320, **5.5:** 322-328, **7.6:** 453-459, **7.7:** 460-466, **9.1:** 546-552, **9.2:** 553-558, **9.7:** 589-594, **11.7:** 705-712 **TE: 4.1:** 239A-239B, **4.2:** 245A-245B, **4.3:** 251A-251B, **5.3:** 314A-314B, **5.4:** 320A-320B, **5.5:** 328A-328B, **7.6:** 459A-459B, **7.7:** 466A-466B, **9.1:** 552A-552B, **9.2:** 558A-558B, **9.7:** 594A-594B, **11.7:** 712A-712B
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.★	**SE/TE: 4.4:** 253-259, **7.6:** 453-459, **9.1:** 546-552, **11.6:** 698-704 **TE: 4.4:** 259A-259B, **7.6:** 459A-459B, **9.1:** 552A-552B, **11.6:** 704A-704B
6. Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.★	**SE/TE: 5.1:** 294-300, **Concept Byte:** 559-560 **TE: 5.1:** 300A-300B

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Analyze functions using different representations	
7. Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.★	**SE/TE: Concept Byte:** 307, **5.3:** 308-314, **5.4:** 315-320, **5.5:** 322-328, **5.8:** 346-350, **7.6:** 453-459, **7.7:** 460-466, **9.1:** 546-552, **9.2:** 553-558 **TE: 5.3:** 314A-314B, **5.4:** 320A-320B, **5.5:** 328A-328B, **5.8:** 350A-350B, **7.6:** 459A-459B, **7.7:** 466A-466B, **9.1:** 552A-552B, **9.2:** 558A-558B
a. Graph linear and quadratic functions and show intercepts, maxima, and minima.	**SE/TE: 5.3:** 308-314, **5.4:** 315-320, **5.5:** 322-328, **9.1:** 546-552, **9.2:** 553-558, **Concept Byte:** 567 **TE: 5.3:** 314A-314B, **5.4:** 320A-320B, **5.5:** 328A-328B, **9.1:** 552A-552B, **9.2:** 558A-558B
b. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.	**SE/TE: 5.8:** 346-350, **Concept Byte:** 351, **9.1:** 546-552, **10.5:** 639-644 **TE: 5.8:** 350A-350B, **9.1:** 552A-552B, **10.5:** 644A-644B
8. Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.	**SE/TE: 7.7:** 460-466 **TE: 7.7:** 466A-466B
a. Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.	**SE/TE: 9.2:** 553-558, **9.4:** 568-572, **9.5:** 576-581 **TE: 9.2:** 558A-558B, **9.4:** 572A-572B, **Concept Byte:** 573-574, **9.5:** 581A-581B
9. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.	**SE/TE: 5.5:** 322-328, **7.6:** 453-459, **9.2:** 553-558 **TE: 5.5:** 328A-328B, **7.6:** 459A-459B, **9.2:** 558A-558B

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Building Functions F-BF	
Build a function that models a relationship between two quantities	
1. Write a function that describes a relationship between two quantities.★	**SE/TE: 4.7:** 274-281, **5.3:** 308-314, **5.4:** 315-320, **5.5:** 322-328, **7.7:** 460-466, **9.2:** 553-558 **TE: 4.7:** 281A-281B, **5.3:** 314A-314B, **5.4:** 320A-320B, **5.5:** 328A-328B, **7.7:** 466A-466B, **9.2:** 558A-558B
a. Determine an explicit expression, a recursive process, or steps for calculation from a context.	**SE/TE: 4.7:** 274-281, **5.3:** 308-314, **5.4:** 315-320, **5.5:** 322-328, **7.8:** 467-472 **TE: 4.7:** 281A-281B, **5.3:** 314A-314B, **5.4:** 320A-320B, **5.5:** 328A-328B, **7.8:** 472A-472B
Build new functions from existing functions	
3. Identify the effect on the graph of replacing f(x) by f(x) + k, k f(x), f(kx), and f(x + k) for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them.	**SE/TE: Concept Byte:** 307, **5.3:** 308-314, **5.4:** 315-320, **5.8:** 346-350, **7.7:** 460-466, **9.1:** 546-552, **9.2:** 553-558 **TE: 5.3:** 314A-314B, **5.4:** 320A-320B, **5.8:** 350A-350B, **7.7:** 466A-466B, **9.1:** 552A-552B, **9.2:** 558A-558B
Linear, Quadratic, and Exponential Models★ F -LE	
Construct and compare linear, quadratic, and exponential models and solve problems	
1. Distinguish between situations that can be modeled with linear functions and with exponential functions.	**SE/TE: 9.7:** 589-594 **TE: 9.7:** 594A-594B
a. Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.	**SE/TE: 9.7:** 589-594 **TE: 9.7:** 594A-594B
b. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.	**SE/TE: 5.1:** 294-300 **TE: 5.1:** 300A-300B
c. Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.	**SE/TE: 7.7:** 460-466 **TE: 7.7:** 466A-466B

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2. Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).	**SE/TE: 4.7:** 274-281, **5.3:** 308-314, **5.4:** 315-320, **5.5:** 322-328, **7.6:** 453-459, **7.8:** 467-472, **9.7:** 589-594 **TE: 4.7:** 281A-281B, **5.3:** 314A-314B, **5.4:** 320A-320B, **5.5:** 328A-328B, **7.6:** 459A-459B, **7.8:** 472A-472B, **9.7:** 594A-594B
3. Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.	**SE/TE: Concept Byte:** 559-560, **9.7:** 589-594 **TE: 9.7:** 594A-594B
Interpret expressions for functions in terms of the situation they model	
5. Interpret the parameters in a linear or exponential function in terms of a context.	**SE/TE: 5.3:** 308-314, **5.4:** 315-320, **5.5:** 322-328, **5.7:** 336-343, **7.7:** 460-466 **TE: 5.3:** 314A-314B, **5.4:** 320A-320B, **5.5:** 328A-328B, **5.7:** 343A-343B, **7.7:** 466A-466B
Statistics and Probability	
Interpreting Categorical and Quantitative Data S-ID	
Summarize, represent, and interpret data on a single count or measurement variable	
1. Represent data with plots on the real number line (dot plots, histograms, and box plots).	**SE/TE: 12.2:** 732-737, **12.4:** 746-751 **TE: 12.2:** 737A-737B, **12.4:** 751A-751B
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.	**SE/TE: 12.3:** 738-744, **Concept Byte:** 745, **12.4:** 746-751 **TE: 12.3:** 744A-744B, **12.4:** 751A-751B
3. Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).	**SE/TE: 12.3:** 738-744 **TE: 12.3:** 744A-744B
Summarize, represent, and interpret data on two categorical and quantitative variables	
5. Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associated and trends in the data.	**SE/TE: 12.2:** 732-737, **Concept Byte:** 752 **TE: 12.2:** 737A-737B

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6. Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.	**SE/TE: 5.7:** 336-343 **TE: 5.7:** 343A-343B
a. Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models.	**SE/TE: 5.7:** 336-343, **9.7:** 589-594 **TE: 5.7:** 343A-343B, **9.7:** 594A-594B, **Concept Byte:** 595
b. Informally assess the fit of a function by plotting and analyzing residuals.	**SE/TE: Concept Byte:** 344-345, 595
c. Fit a linear function for a scatter plot that suggests a linear association.	**SE/TE: 5.7:** 336-343 **TE: 5.7:** 343A-343B
Interpret linear models	
7. Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.	**SE/TE: 5.7:** 336-343 **TE: 5.7:** 343A-343B
8. Compute (using technology) and interpret the correlation coefficient of a linear fit.	**SE/TE: 5.7:** 336-343 **TE: 5.7:** 343A-343B
9. Distinguish between correlation and causation.	**SE/TE: 5.7:** 336-343 **TE: 5.7:** 343A-343B