

**A Correlation of
Pearson Mathematics
Algebra 1
Common Core, ©2015**



**To the
Missouri Learning Standards for
Mathematics - Algebra 1**

A Correlation of Pearson High School Mathematics Algebra 1 Common Core ©2015 To the Missouri Learning Standards for Mathematics – Algebra 1

Introduction

This document demonstrates how ***Pearson Algebra 1, Common Core Edition ©2015*** meets the standards of the Missouri Learning Standards for Mathematics, Algebra 1. Correlation references are to the pages of the Student and Teacher’s Editions.

Pearson Algebra 1, Common Core Edition ©2015 balances conceptual understanding, procedural fluency, and the application of mathematics to solve problems and formulate models.

- 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.
- 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 with confidence.

**A Correlation of Pearson High School Mathematics Algebra 1 Common Core ©2015
To the Missouri Learning Standards for Mathematics – Algebra 1**

Missouri Learning Standards for Mathematics Grade-Level Expectations Algebra 1	Pearson High School Mathematics Algebra 1
Number and Quantity	
A Extend and use properties of rational exponents.	
1 Explain how the meaning of rational exponents extends from the properties of integer exponents.	SE/TE: CB 424, 425-429, CB 432, 433-436, 439-442, 448-450 TE: 431A-431B, 438A-438B, 445A-445B, 452A-452B
2 Rewrite expressions involving radicals and rational exponents using the properties of exponents. Limit to rational exponents with a numerator of 1.	SE/TE: CB 447, 448-450, 619-622 TE: 452A-452B, 625A-625B
B Use units to solve problems.	
1 Use units of measure as a way to understand and solve problems involving quantities.	SE/TE: 116-119, CB 122-123, 131-133, 151 (PIAT), 337-338, 808 TE: 121A-121B, 136A-136B, 343A-343B
a. Identify, label and use appropriate units of measure within a problem.	SE/TE: 116-119, CB 122-123, 131-133, 151 (PIAT), 337-338, 808 TE: 121A-121B, 136A-136B, 343A-343B
b. Convert units and rates.	SE/TE: 116-119, CN 122-123, 151 (PIAT) TE: 121A-121B
c. Use units within problems.	SE/TE: 116-119, CB 122-123, 131-133, 151 (PIAT), 337-338, 808 TE: 121A-121B, 136A-136B, 343A-343B
d. Choose and interpret the scale and the origin in graphs and data displays.	SE/TE: 732-734, 810-811 TE: 737A-737B
2 Define and use appropriate quantities for representing a given context or problem.	SE/TE: 116-119, CB 122-123, 131-133, 151 (PIAT), 254-256, 262-264, 389-390, 808 TE: 121A-121B, 136A-136B, 259A-259B, 267A-267B, 392A-392B

**A Correlation of Pearson High School Mathematics Algebra 1 Common Core ©2015
To the Missouri Learning Standards for Mathematics – Algebra 1**

Missouri Learning Standards for Mathematics Grade-Level Expectations Algebra 1	Pearson High School Mathematics Algebra 1
3 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.	SE/TE: 111, 144-149, 387-390, 576-579, 584 TE: 114A-114B, 150A-150B, 392A-392B, 581A-581B, 588A-588B
Seeing Structure in Expressions	
A Interpret and use structure.	
1 Interpret the contextual meaning of individual terms or factors from a given problem that utilizes formulas or expressions.	SE/TE: 46-49, 109-112, 207-210, 274-278, 460-463, 518-520, 523-526, 529-531 TE: 52A-52B, 114A-114B, 213A-213B, 281A-281B, 466A-466B, 522A-522B, 528A-528B, 533A-533B
2 Analyze the structure of polynomials to create equivalent expressions or equations.	SE/TE: 487, 493-494, 498-501, 504-507, 512-515, 518-520, 523-526, 529-531 TE: 491A-491B, 496A-496B, 503A-503B, 509A-509B, 517A-517B, 522A-522B, 528A-528B, 533A-533B
3 Choose and produce equivalent forms of a quadratic expression or equations to reveal and explain properties.	SE/TE: 568-570, 576-579 TE: 572A-572B, 581A-581B
a. Find the zeros of a quadratic function by rewriting it in factored form.	SE/TE: 561-563, CB 567, 568-570, CB 573-574 TE: 566A-566B, 572A-572B
b. Find the maximum or minimum value of a quadratic function by completing the square.	SE/TE: 546-549, 553-556 TE: 552A-552B, 558A-558B
Creating Equations	
A Create equations that describe linear, quadratic and exponential relationships.	
1 Create equations and inequalities in one variable and use them to model and/or solve problems.	SE/TE: 53-56, CB 80, 81-85, 88-91, 94-97, CB 101, 102-105, 124-127, 130-133, 171-174, 178-181, CB 185, 186-189, 200-204, 561-563, 568-570, 576-579, 582-586 TE: 58A-58B, 87A-87B, 93A-93B, 100A-100B, 108A-108B, 129A-129B, 136A-136B, 177A-177B, 183A-183B, 192A-192B, 206A-206B, 566A-566B, 572A-572B, 581A-581B, 588A-588B

**A Correlation of Pearson High School Mathematics Algebra 1 Common Core ©2015
To the Missouri Learning Standards for Mathematics – Algebra 1**

Missouri Learning Standards for Mathematics Grade-Level Expectations Algebra 1	Pearson High School Mathematics Algebra 1
2 Create and graph linear, quadratic and exponential equations in two variables.	SE/TE: CB 59, 61-64, 262-264, 301-304, CB 307, 308-311, 315-318, 322-325, 453-456, 546-549, 553-556, CB 573-574 TE: 66A-66B, 267A-267B, 306A-306B, 314A-314B, 320A-320B, 328A-328B, 459A-469B, 466A-466B, 552A-552B, 558A-558B
3 Represent constraints by equations or inequalities and by systems of equations or inequalities, and interpret the data points as a solution or non-solution in a modeling context.	SE/TE: 387-390, 394-397, 596-599 TE: 392A-392B, 399AA-399B, 601A-601B
4 Solve literal equations and formulas for a specified variable that highlights a quantity of interest.	SE/TE: 109-112, 561-563 TE: 114A-114B, 566A-566B
Reasoning with Equations and Inequalities	
A Understand solving equations as a process, and solve equations and inequalities in one variable.	
1 Explain how each step taken when solving an equation or inequality in one variable creates an equivalent equation or inequality that has the same solution(s) as the original.	SE/TE: 81-85, 88-91, 94-97, CB 101, 102-105, 171-174, 178-181, CB 185, 186-189, 200-204, 207-210, 575-579 TE: 87A-87B, 93A-93B, 100A-100B, 108A-108B, 177A-177B, 183A-183B, 192A-192B, 206A-206B, 213A-213B, 581A-581B
2 Solve problems involving quadratic equations.	SE/TE: 561-563, CB 567, 568-570, 576-579, 582-586 TE: 566A-566B, 577A-577B, 581A-581B, 588A-588B
a. Use the method of completing the square to create an equivalent quadratic equation.	SE/TE: 576-579 TE: 581A-581B
b. Derive the quadratic formula.	SE/TE: 582-586 TE: 588A-588B
c. Analyze different methods of solving quadratic equations.	SE/TE: 561-563, 568-570, 576-579, 582-586 TE: 566A-566B, 572A-572B, 581A-581B, 588A-588B

**A Correlation of Pearson High School Mathematics Algebra 1 Common Core ©2015
To the Missouri Learning Standards for Mathematics – Algebra 1**

Missouri Learning Standards for Mathematics Grade-Level Expectations Algebra 1	Pearson High School Mathematics Algebra 1
B Solve systems of equations.	
1 Solve a system of linear equations algebraically and/or graphically.	SE/TE: 364-367, CB 571, 372-375, 378-381, CB 385-386, 387-390 TE: 369A-369B, 377A-377B, 384A-384B, 392A-392B
2 Solve a system consisting of a linear equation and a quadratic equation algebraically and/or graphically.	SE/TE: 596-599 TE: 601A-601B
3 Justify that the technique of linear combination produces an equivalent system of equations.	SE/TE: 372-375 TE: 377A-377B
C Represent and solve linear and exponential equations and inequalities graphically.	
1 Explain that the graph of an equation in two variables is the set of all its solutions plotted in the Cartesian coordinate plane.	SE/TE: 61-64, 240-243, 246-249, 253-257, CB 260-261 TE: 66A-66B, 245A-245B, 251A-251B, 259A-259B
2 Graph the solution to a linear inequality in two variables.	SE/TE: 394-397, CB 406 TE: 399A-399B, 405A-405B
3 Solve problems involving a system of linear inequalities.	SE/TE: 400-402, CB 406 TE: 405A-405B
Arithmetic with Polynomials and Rational Expressions	
A Perform operations on polynomials.	
1 Add, subtract and multiply polynomials, and understand that polynomials follow the same general rules of arithmetic and are closed under these operations.	SE/TE: 486-489, 492-494, CB 497, 498-501, 504-507 TE: 491A-491B, 496A-496B, 503A-503B, 509A-509B
2 Divide polynomials by monomials.	SE/TE: 678, 681 TE: 683A-683B

**A Correlation of Pearson High School Mathematics Algebra 1 Common Core ©2015
To the Missouri Learning Standards for Mathematics – Algebra 1**

Missouri Learning Standards for Mathematics Grade-Level Expectations Algebra 1	Pearson High School Mathematics Algebra 1
Interpreting Functions	
A Understand the concept of a function and use function notation.	
1 Understand that a function from one set (domain) to another set (range) assigns to each element of the domain exactly one element of the range.	SE/TE: 268-271 TE: 273A-273B
a. Represent a function using function notation.	SE/TE: 268-271 TE: 273A-273B
b. Understand that the graph of a function labeled f is the set of all ordered pairs (x, y) that satisfy the equation $y=f(x)$.	SE/TE: 268-271 TE: 273A-273B
2 Use function notation to evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.	SE/TE: 268-271 TE: 273A-273B
B Interpret linear, quadratic and exponential functions in terms of the context.	
1 Using tables, graphs and verbal descriptions, interpret key characteristics of a function that models the relationship between two quantities.	SE/TE: 240-243, 246-249, 308-311, 315-318, 322-325, 453-456, 546-549, 553-556, 589-592 TE: 245A-245B, 251A-251B, 314A-314B, 320A-320B, 328A-328B, 459A-459B, 552A-552B, 558A-558B, 594A-594B
2 Relate the domain and range of a function to its graph and, where applicable, to the quantitative relationship it describes.	SE/TE: 253-257, 453-456, 546-549 TE: 259A-259B, 459A-459B, 552A-552B
3 Determine the average rate of change of a function over a specified interval and interpret the meaning.	SE/TE: 294-297, CB 559-560 TE: 300A-300B
4 Interpret the parameters of a linear or exponential function in terms of the context.	SE/TE: 308-311, 315-318, 322-325, 336-340, 460-463 TE: 314A-314B, 320A-320B, 328A-328B, 343A-343B, 466A-466B

**A Correlation of Pearson High School Mathematics Algebra 1 Common Core ©2015
To the Missouri Learning Standards for Mathematics – Algebra 1**

Missouri Learning Standards for Mathematics Grade-Level Expectations Algebra 1	Pearson High School Mathematics Algebra 1
C Analyze linear, quadratic and exponential functions using different representations.	
1 Graph functions expressed symbolically and identify and interpret key features of the graph.	SE/TE: 246-249, 308-311, 315-318, 322-325, 453-456, 460-463, 546-549, 553-556, 589-592 TE: 251A-251B, 314A-314B, 320A-320B, 328A-328B, 459A-459B, 466A-466B, 552A-552B, 558A-558B, 594A-594B
2 Translate between different but equivalent forms of a function to reveal and explain properties of the function and interpret these in terms of a context.	SE/TE: CB 307, 308-311, 315-318, 322-325, 460-463 TE: 314A-314B, 320A-320B, 328A-328B, 466A-466B
3 Compare the properties of two functions given different representations.	SE/TE: 322-325, 453-456, 553-556 TE: 328A-328B, 459A-459B, 558A-558B
Building Functions	
A Build new functions from existing functions (limited to linear, quadratic and exponential).	
1 Analyze the effect of translations and scale changes on functions.	SE/TE: 346-348, 548, 553 TE: 350A-350B, 552A-552B, 558A-558B
Linear, Quadratic and Exponential Models	
A Construct and compare linear, quadratic and exponential models and solve problems.	
1 Distinguish between situations that can be modeled with linear or exponential functions.	SE/TE: 589-592 TE: 594A-594B
a. Determine that linear functions change by equal differences over equal intervals.	SE/TE: 294-297 TE: 300A-300B
b. Recognize exponential situations in which a quantity grows or decays by a constant percent rate per unit interval.	SE/TE: 460-463 TE: 466A-466B
2 Describe, using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly or quadratically.	SE/TE: CB 559-560, 589-592 TE: 594A-594B

**A Correlation of Pearson High School Mathematics Algebra 1 Common Core ©2015
To the Missouri Learning Standards for Mathematics – Algebra 1**

Missouri Learning Standards for Mathematics Grade-Level Expectations Algebra 1	Pearson High School Mathematics Algebra 1
3 Construct linear, quadratic and exponential equations given graphs, verbal descriptions or tables.	SE/TE: 308-311, 315-318, 322-325, 453-456, 589-592 TE: 314A-314B, 320A-320B, 328A-328B, 459A-459B, 594A-594B
B Use arithmetic and geometric sequences.	
1 Write arithmetic and geometric sequences in recursive and explicit forms, and use them to model situations and translate between the two forms.	SE/TE: 274-278, 467-470 TE: 281A-281B, 472A-472B
2 Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the set of integers.	SE/TE: 274-278, 467-470 TE: 281A-281B, 472A-472B
3 Find the terms of sequences given an explicit or recursive formula.	SE/TE: 274-278, 467-470 TE: 281A-281B, 472A-472B
Data and Statistical Analysis	
A Summarize, represent and interpret data.	
1 Analyze and interpret graphical displays of data.	SE/TE: 732-735, 746-749, 809-813 TE: 737A-737B, 751A-751B
2 Use statistics appropriate to the shape of the data distribution to compare center and spread of two or more different data sets.	SE/TE: 738-742, CB 745, 746-749 TE: 744A-744B, 751A-751B
3 Interpret differences in shape, center and spreads in the context of the data sets, accounting for possible effects of outliers.	SE/TE: 738-742 TE: 744A-744B
4 Summarize data in two-way frequency tables.	SE/TE: CB 752
a. Interpret relative frequencies in the context of the data.	SE/TE: 732-735, CB 760 TE: 737A-737B

**A Correlation of Pearson High School Mathematics Algebra 1 Common Core ©2015
To the Missouri Learning Standards for Mathematics – Algebra 1**

Missouri Learning Standards for Mathematics Grade-Level Expectations Algebra 1	Pearson High School Mathematics Algebra 1
b. Recognize possible associations and trends in the data.	SE/TE: 733-735, 738-742, CB 745, 746-749, CB 783-784 TE: 737A-737B, 744A-744B, 751A-751B
5 Construct a scatter plot of bivariate quantitative data describing how the variables are related; determine and use a function that models the relationship.	SE/TE: 336-340, 589-592 TE: 343A-343B, 594A-594B
a. Construct a linear function to model bivariate data represented on a scatter plot that minimizes residuals.	SE/TE: 336-340 TE: 343A-343B
b. Construct an exponential function to model bivariate data represented on a scatter plot that minimizes residuals.	SE/TE: CB 545
6 Interpret the slope (rate of change) and the y-intercept (constant term) of a linear model in the context of the data.	SE/TE: 336-340 TE: 343A-343B
7 Determine and interpret the correlation coefficient for a linear association.	SE/TE: 336-340 TE: 343A-343B
8 Distinguish between correlation and causation.	SE/TE: 336-340 TE: 343A-343B