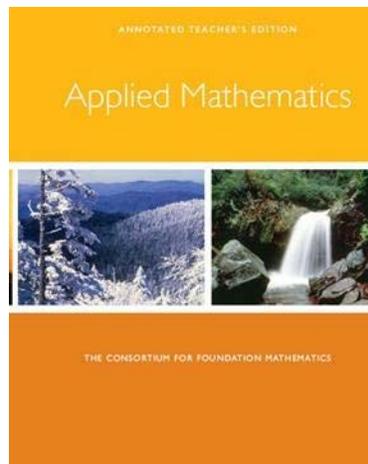A Correlation of

Applied Mathematics
Consortium for Foundation Mathematics
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To the

Alabama Course of Study: Mathematics
Algebraic Connections

Introduction

The following correlation demonstrates the alignment of content between **Applied Mathematics, ©2010** and the Alabama Course of Study Mathematics, Algebraic Connections. This document contains references to the page numbers from the Student and Teacher's Editions.

Applied Mathematics is intended to build on previous mathematics courses, including Algebra I, and to place emphasis on brining about a deeper understanding of those mathematical relationships that will help students gain mathematical literacy in the real world, show the connection between algebra and statistics, and simultaneously help them build a strong foundation for future study in mathematics and other disciplines.

Goals
By using the **Applied Mathematics** book students will be able to achieve the following goals:

- Develop mathematical intuition and a relevant base of mathematical knowledge.

- Gain experiences that connect classroom learning with real-world applications.

- Learn to work in groups as will as independently.

- Increase knowledge of mathematics through explorations with appropriate technology.

- Develop a positive attitude about learning and using mathematics.

- Build techniques of reasoning for effective problem solving.

- Learn to apply, display, and communicate knowledge through alternative means of assessment, such as mathematical portfolios and journal writing

This document demonstrates the high degree of success students will achieve by using **Applied Mathematics.**

ALGEBRAIC CONNECTIONS
Algebraic Connections is a course designed for students who wish to increase their mathematical knowledge and skills prior to enrollment in the Algebra II course or the Algebra II with Trigonometry course. Algebraic Connections expands upon the concepts of Algebra I and Geometry, with an emphasis on application-based problems. This course provides opportunities to incorporate the use of technology through its emphasis on applying functions to make predictions and to calculate outcomes. The prerequisites for Algebraic Connections are Algebra I and Geometry.
Algebra
Modeling

Alabama Course of Study: Mathematics Algebraic Connections	APPLIED MATHEMATICS BY THE CONSORTIUM FOR FOUNDATION MATHEMATICS © 2010
1. Create algebraic models for application-based problems by developing and solving equations and inequalities, including those involving direct, inverse, and joint variation.	**SE/TE:** 228-229, 234-239, 244-245, 247, 254-256, 259-261, 283-284, 473-479
2. Solve application-based problems by developing and solving systems of linear equations and inequalities.	**SE/TE:** 305-307, 310-315, 349-352
3. Use formulas or equations of functions to calculate outcomes of exponential growth or decay.	**SE/TE:** 543-551, 570-575, 581-586, 587-588
Graphing	
4. Determine maximum and minimum values of a function using linear programming procedures.	**SE/TE:** 353-357, 358-368, 371-372, 373-375
5. Determine approximate rates of change of nonlinear relationships from graphical and numerical data.	**SE/TE:** 399-400, 409, 549, 553, 646
a. Creating graphical representations from tables, equations, or classroom-generated data to model consumer costs and to predict future outcomes	**SE/TE:** 310, 543, 547, 552, 596
6. Use the extreme value of a given quadratic function to solve applied problems.	**SE/TE:** 432-434, 461, 468
Finance	
7. Use analytical, numerical, and graphical methods to make financial and economic decisions, including those involving banking and investments, insurance, personal budgets, credit purchases, recreation, and deceptive and fraudulent pricing and advertising.	**SE/TE:** 589-597, 598-600

Alabama Course of Study: Mathematics Algebraic Connections	APPLIED MATHEMATICS I (BY THE CONSORTIUM FOR FOUNDATION MATHEMATICS) © 2010
a. Creating, manually or with technological tools, graphs and tables related to personal finance and economics.	**SE/TE:** 614, 622-624, 691-692
Geometry	
Modeling	
8. Determine missing information in an application-based situation using properties of right triangles, including trigonometric ratios and the Pythagorean Theorem.	The opportunity to introduce this objective is available. See the following: **SE/TE:** A-31
9. Analyze aesthetics of physical models for line symmetry, rotational symmetry, or the golden ratio.	The opportunity to introduce this objective is available. See the following: **SE/TE:** 424
Measurement	
10. Critique measurements in terms of precision, accuracy, and approximate error.	The opportunity to introduce this objective is available. See the following: **SE/TE:** 581, 815
11. Use ratios of perimeters, areas, and volumes of similar figures to solve applied problems.	The opportunity to introduce this objective is available. See the following: **SE/TE:** A-31
Data Analysis and Probability	
12. Create a model of a set of data by estimating the equation of a curve of best fit from tables of values or scatterplots.	**SE/TE:** 454-460, 468-470, 610-612, 614-615, 644-645
a. Predicting probabilities given a frequency distribution	**SE/TE:** 702, 705-707, 709, 711-712, 774-777

SE = Student Edition   TE = Teacher's Edition