

## Model Building – An Applied College Algebra Course Dealing with Observed Patterns

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What are the possible contributions of algebra to the arts? Are there alternatives to traditional college algebra that would better serve as a general education requirement for non-science majors?

The presented material provides an opportunity to study algebraic concepts and skills in the context of applications using real data. The algebraic topics and their order of presentation are common to algebra texts, but the perspective is reversed. Whereas algebra typically starts with algebraic expressions and proceeds to study their numerical and graphical properties, this text will treat data/graphs, which describe relationships between two quantities, as the starting point. The questions that will be asked when we observe a pattern in given data is, "Is there an algebraic expression that will reproduce the pattern?" Algebra will be presented as that language and those tools which may facilitate the description and analysis of patterns that may be observed in relationships. This orientation follows as a fairly natural extension of most traditional topics of algebra.

Meaningful applications will help to motivate learning and at the same time will encourage students to make connections among algebraic, numeric, and geometric perspectives by reversing the usual approach of "graph expression". It is also expected that students will be able to recognize relationships peculiar to their areas of study and will have, through the study of this material, some tools for building models by which they might study those relationships.