

ACADEMIC EXCELLENCE

Biblical Worldview Shaping in Algebra

What is Algebra?

The Arabic word al-jabr, from which we get our word algebra, carries the idea of the reunion or restoration of broken parts. Algebra allows us to take the fragmented information of a problem and organize it into a useful mathematical form. In the ninth century AD one of the best known of the ancient mathematicians, al-Khwarizmi, wrote a very important book called Kitab al-Jabr w'al-Mugabala, roughly meaning "the book of integration and equation." From this book, algebra took shape as a separate mathematical discipline. Algebra is a structured system of analyzing and expressing both concrete and abstract conditions with known and unknown values.

The power of algebra is seen in determining unknown quantities by simply manipulating symbols according to established principles. The value of algebra is realized not only in its use in finding solutions to problems but also in its ability to develop our analytical thinking skills—skills that allow us to analyze and solve problems beyond the mathematics classroom.

Our Calling in God's World

All creation exists to declare the glory of God to reveal His greatness and His goodness (Ps. 19:1; Rom. 11:36). Humans, however, play a special role. Shortly after the creation of the first man and woman, God commanded them, "Be fruitful, and multiply, and replenish the earth, and subdue it: and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth" (Gen. 1:28). This dominion is a mandate to control and manage what God has provided. Proper management of His creation requires ever-increasing knowledge, wisdom, and skills.



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The Christian student learns the same algebraic concepts as the non-believer, but the Christian applies these concepts with a different view of life and of the world. Viewing our world as the creation of God and ourselves as created in the image of God (Gen. 1:26-27) provides value and purpose for life as well as unique insight into the world around us. This Christian worldview affects how we apply the math skills we learn through the study of algebra.

Why Is Algebra Important?

The language of algebra expresses complicated relationships using a few simple symbols. It is used to model relationships in nature and science. Understanding the complex dynamics of our physical world requires a thorough understanding of mathematics. Scientific inquiry, from physics to business, depends on algebra's power of symbolic abstraction.

Our entire technological culture depends on algebra's ability to encapsulate the concepts and principles used in the study of related quantities. Algebra, as a tool of analysis, comprehension, and deduction, helps us solve problems in many areas of life, including business, science, engineering, building, medicine, technology, and manufacturing.

In this way, algebra enables us to better fulfill God's command to manage His creation.

But Is It Worth the Effort?

Algebra is a worthwhile study for all students. It develops our thinking skills, training our minds to analyze, organize, rationalize, evaluate, solve, and express results with detailed precision.



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These skills are valuable in every facet of life. Many careers demand the attention to detail and the analytical thinking skills that are developed in the mathematics classroom.

But the development of thinking skills is often a long and sometimes even a painful process. So is it worth it? Algebra provides the skills and experiences required for future education, careers, and challenges in life. The tremendous benefits of proper preparation make the difficulties and challenges well worth the effort. Without an understanding of algebra, many of life's challenges become much more difficult. A thorough understanding of the foundations of mathematics is the key that unlocks many opportunities.

Fulfilling our responsibilities at work, home, and church requires the attainment of much knowledge and many skills through diligence and hard work. For some, algebra hides inside the instruments of their trade as an unseen partner, but for others it is never any farther away than the end of their pencil or their calculator's display. If Christians are to exercise dominion as God commands, algebra remains an important tool in completing His will.

The hand of the diligent shall bear rule: but the slothful shall be under tribute. Proverbs 12:24

