

Biblical Worldview Scope for *Algebra 1*, 4th ed.

Introduction: Mathematics is not neutral. The following document is our attempt to answer the question “What must a student understand and value to see *Algebra 1* from a biblical perspective?” We believe that the following themes are essential for Algebra 1 students to grasp and internalize: foundations, modeling, reasoning, design, and ethics. These biblical worldview themes will help students form a biblical framework for using mathematics to glorify God. The first part of the course should lead students to *explain* and *recall* these themes. Throughout the course, however, students should *evaluate* defective ideas within each theme, *formulate* a Christian understanding of the themes, and *apply* them to various aspects of their lives.

Although each theme is important in its own right, they collectively strike at one fundamental question in *Algebra 1*: Why does math work?

1. Foundations of Algebra

All legitimate interpretation relies on Scripture.

Creation: God communicates truthfully, honestly, and reliably through His Word. The creation narrative (Gen. 1–2) presents God as the sole Creator and shows creation as being in perfect harmony. The world exists—and is upheld—by the speech of God (Gen. 1; Heb. 1:3). Moreover, God has interpreted the world for us in Scripture. His creation is understandable; humans as His image-bearers have been called to understand creation through their filling, subduing, and ruling over the earth (Gen. 1:28, often called the “Creation Mandate”). In the pursuit of the Creation Mandate, the study of algebra can be understood as a creaturely endeavor to describe God’s creation. All descriptions rest on God’s interpretation of the world in His Word.

Fall: The serpent twisted God’s truthful, honest, and reliable word in the garden (Gen. 3:1, 4). Ever since the Fall, humanity’s inclination is to reject God’s commands. People turn away from—and outright reject—God and His interpretation of His own creation. Instead of trusting upon God for understanding, fallen people favor their own ideas (contrary to the instruction of Prov. 3:5–8). In our postmodern world, the rejection of God and His Word has led to the assertion that everyone defines truth in his or her own way.

Humanity’s reliance on itself outside of God’s Word has implications on every realm of life. For example, for fallen people, the consistency of mathematics does not direct attention to God’s consistency and the nature of His creation. Instead, fallen people often use mathematic principles with no regard for the God who created the world they describe.

Redemption: Scripture calls believers to look upon God for all things. He alone is our sufficient source (2 Cor. 3:5). Recognizing one’s insufficiency isn’t easy. It is a challenge. But when people rest on Christ’s atoning work and act according to His commands, they are not easily broken down (Matt. 7:24–27). The believer’s firm authority is Scripture (2 Tim. 3:16–17).

The ability to describe creation consistently and in an orderly manner—as with mathematics—is a spectacular gift of God. Mathematics, then, points us back to the Creator. Instead of usurping God as Creator and Interpreter of His creation, we place our understanding upon Him as our foundation (Prov. 3:5–6).

2. Modeling with Algebra

Modeling is a useful, though incomplete, human way of representing creation.

Creation: God created people with the ability to observe His creation and make simplified representations of it. Moreover, from creation, God instructed humanity on what the nature of work is: subduing and ruling over the earth (Gen.

1:28). Humanity's understanding, ability to represent, subduing, and ruling are all subject to *creaturely* limitations. Humanity cannot observe or experience everything in the world, let alone know everything about everything. Therefore, mathematical models, as simplified representations of God's creation, are useful and effective so long as their design's assumptions are known, considered, and valid. Modeling with algebra must coincide with obedience and thankfulness to God.

Fall: Since the Fall, humans continuously view themselves as equal to—or even above—God. For example, mathematical models can be viewed as certain and objective, even considering their limitations. Rebellious humanity uses modeling to deny God and explain the world in their own way.

Redemption: Scripture is the standard against which all things, mathematical models included, are measured—not vice versa. Creation is complex and intricate. Humanity's modeling capabilities can be useful and effective ways to measure, predict, and understand God's creation. It must be understood, though, that they are not perfect tools. Instead, mathematical models are useful, though fallible, ways that people represent God's world. Models cannot provide ethical insight into decision making. God's Word provides the foundation and the boundaries for our guidance in all of life.

3. Reasoning in Algebra

Valid reasoning is necessary but insufficient to determine truth.

Creation: God created humans with the power to learn. This capacity is one way in which we bear the image of God. God invites us to reason with Him (Isa. 43:26). We reason in a creaturely way, however, as opposed to the way God understands the world (Isa. 55:8–9). Our skill of reasoning, similar to our modeling capabilities, can provide insight into God's creation, His work, and His character. As with anything creaturely, human reasoning has limitations. Rather than determining truth, human reasoning demonstrates consistency with assumptions (i.e., validity).

Fall: Because of sin, humanity often twists this power of reasoning. Fallen humanity has come to view reason—mathematical deduction included—as a means of discovering truth. Those who take this view tend to make mathematical reasoning into an idol. Valid mathematical reasoning is a great tool to reach valid conclusions as long as both its usefulness and limitations are recognized.

Redemption: A biblical view of reasoning acknowledges reasoning's remarkable strengths while also noting its limitations. There has to be balance. For example, the chief strength of humanity's ability to reason is in flagging inconsistencies and contradictions. On the other hand, it cannot discover truth but only demonstrates validity. Through real-world problems, reasoning helps one to see how even valid mathematical deduction can produce untrue conclusions. In such occurrences, locating untrue assumptions that are to blame for the faulty conclusion is a must.

4. Design through Algebra

We live in a world with evident design.

Creation: God created and sustains a world that reveals something of what He is like (Ps. 19:1; Rom. 1:20; Heb. 1:3). Mathematical modeling and reasoning are possible because we live in an orderly world and we are image-bearers of its Creator. The order of the world also points out the marvels of God's complex creativity. Mathematics is helpful in describing some of the patterns seen throughout the world. As math sheds light on and describes the evident design in the world, math ultimately points to the glory of God in His creation.

Fall: Fallen humanity suppresses the truth of God's existence and of creation's evidence of a divine Creator (Ps. 14:1). Instead of recognizing that mathematical patterns and proofs point to a Creator, some have argued the world's apparent design is a result of natural processes by chance. People use mathematical laws and principles which describe the order and complexity of the world to explain the world apart from God rather than in worship of Him.

Redemption: The believer's identification of design through various mathematical means should be a cause for pondering the attributes of God. Subsequently, the identification and descriptions of the world's design should lead the believer to praise God. Because of the Fall, there are pitfalls in this pursuit to praise God as Designer. It can be easy to praise the design over and above the Designer, for instance. Yet, believers are called to praise God in all their pursuits (1 Cor. 10:31; Col. 3:17, 23). The world's mathematical patterns and design declare His excellencies (Ps. 19:1; 50:6; 89:5), and believers are called to proclaim those excellencies to the people around the world (1 Pet. 2:9).

5. Algebra and Ethics

There is a moral aspect to learning and practicing mathematics.

Creation: God desires close communion with His creation and wants His image-bearers to live with Him in accordance with His Word (Micah 6:8). God has also called humanity to subdue and have dominion over the earth (Gen. 1:28). This dominion, however, is not unlike God's care over His creation. Just as the Lord is gracious and compassionate (Isa. 30:18; James 5:11), He calls believers to love fellow image-bearers as themselves (Lev. 19:18). This, in turn, leads to the pursuit of others' wellbeing above and beyond their own (1 Cor. 10:24). The study and application of mathematics must keep in mind the moral aspect inherent in the discipline; math equips people to subdue and have dominion over the earth.

Fall: The Fall makes selfish ambition easier and more desirable than the service of others. Unfortunately, this means even mathematics is used as a tool for those sinful ambitions. Mathematics can be studied and applied in a way that undermines the authority of God and doesn't show love to image-bearers of God. Humanity's undermining of God's authority often comes as people value themselves over against the image of God in all people (Phil. 2:21; 2 Tim. 3:2).

Redemption: The study and application of mathematics must be approached in a way that both honors God and illustrates love to one's neighbor. For the believer, this concept is nonnegotiable. Mathematics equips the believer in practical ways to honor God and love their neighbor. The ability to describe God's creation in mathematical ways and use that knowledge in service of others is a gift from God. That gift, although marred by the Fall, should still be pursued with joy because it is from the Lord that one's enjoyment comes (Eccles. 2:24–26).