# Integrating Math and the Bible

*Tom Hilgeman is the office manager and administrative assistant to the ACSI Europe regional director. He was the director of the Santa Cruz (Bolivia) Christian Learning Center from 1981 to 2000, and he was awarded the highest medal of honor that the government of Bolivia gives to an educator for his contribution to education in that country. He and his wife Mariellyn live in Budapest, Hungary.*

Fluffy white snow blankets the Swiss landscape outside my window as I write. I am vacationing here, and watching the snow fall is a most welcome change after several decades of enduring "brown" Christmases in hot and humid tropical Bolivia, where I grew up as the son of missionaries and later served as a school administrator. As I listen to the song "Winter Wonderland," the words take on reality instead of simply creating a Christmas atmosphere in a country south of the equator.

To appreciate the snow, however, I need to stop watching it and go outside to touch it and maybe make a snowball or two. If I limit myself to the input I've received through my senses, I will have enjoyed it, and I may decide that this minimal experience is sufficient. Sadly, though, my self-imposed limitation will keep me from discovering all the amazing things that the snow can teach me. If instead I make a determined effort to learn all I can about it, I will soon notice that each snowflake has a mathematically symmetrical design consisting of six points. This discovery may in turn lead me to believe in a Creator whose existence is being shown to me through a general revelation, or I may choose to believe that all this happens by chance and is governed by natural laws. Going this far is pretty much the limit of scientific investigation.

Suppose I decide that a Creator made the snow, and that He left me the Bible to reveal Himself to me. I still have not learned everything I can about the snow until I have opened His Word to see what, if anything, it tells me about this amazing substance.

Snow now has a much deeper and richer meaning for me because I have studied it by using my senses, by applying existing scientific knowledge, and by reading the message left by its Creator. Leaving out any one of these could leave me with false perceptions. Watching the snow through a window would not teach me that it is cold. I might erroneously assume it is warm. The application of science would teach me that snow forms only when the temperature falls to a certain level, but science can't yet explain why snowflakes all have exactly six points but are so uniquely designed that no two identical snowflakes have ever been found. Only when I discover that the snow is created and managed by God (Psalm 147:16 and 148:8) do all the facts make sense.

This has been an example of integrated learning, in which one exhausts all available resources to learn the truth about something of interest. In Christian education, the Bible is an important resource for every academic discipline, not because it is a textbook for any one academic discipline but *because it has something significant to say that relates to every area of importance.*

The educator who is ignorant of God's truth or excludes it from his teaching does a great disservice to his students. History, for example, is usually divided into church history and secular history. Each is taught as a separate subject, with the result that neither is seen as significantly influencing the other. Students have no reason to believe that the church is important to the rest of life. Both kinds of history should be taught together, but we have no textbook that combines the two. If the teacher depends on the textbook alone to define his curriculum goals, he will not relate what happens in the church to what happens in the rest of the world. Is it any wonder that most of the world places little importance on spiritual matters when it has been taught by omission that the church is not meaningful to life?

Many Christian schools seriously ignore the integration of the Bible and math, failing to perceive that God's Word can be a resource for the math course. Perhaps teachers have never been trained to think that the Bible has any relevance to math. After all, one would have to struggle to find any passage of Scripture that teaches a mathematical principle, and isn't that what math is all about?

If a teacher does attempt to integrate the Bible and math, the focus is usually, for a very brief time, on the order we observe in certain phenomena (such as snow) that points to a Creator. After that, we go back to teaching the day's particular mathematical principle and assigning homework that, if completed successfully, will cement that principle in the student's mind.

No one questions the importance of learning math. If we wish to be successful in life, we need a knowledge of mathematical principles to help us in completing even the simplest tasks, such as going to the store to buy groceries. We need to know how to use numbers to save money or avoid being cheated. We need to understand measures to plan a trip or bake a cake.

Word problems are an important part of a mathematics course. They are real-life simulations in which students can implement newly learned principles in practical ways. Students who learn principles without their application to life will never consider math important, and they will have to learn the necessary skills on their own in the more difficult school of "hard knocks."

*We integrate math and the Bible when we teach students to use math as a tool for increasing their understanding of God's truth.* All Christian educators would agree, at least in principle, that the study of the Bible should be an important part of every Christian's life. We would also agree that we ought to use every resource available to enhance our students' understanding of Scripture. Unfortunately, few of us consider it important to apply the resource of mathematical principles to the study of God's Word.

Yet the Bible is a very mathematical book, from the first chapter of Genesis to the last chapter of Revelation. It begins and ends with the mathematical concept of infinity. It provides understandings that are impossible to reach by means of human reason alone. Human logic tells us that everything must have a beginning and an end, yet it also tells us that there must have been something before the "beginning" and something must come after the "end." Only an infinite God who has said, "[M]y thoughts are not your thoughts … As the heavens are higher than the earth, so are … my thoughts than your thoughts" (Isaiah 55:8, 9) provides a satisfactory explanation.

Is infinity an important mathematical principle? Apart from the fact that it is important to geometry and mathematical theory, infinity is very important spiritually. Every student needs to face the fact of his infinite future existence. He is assured of eternal life, whether he wants it or not, but will he spend it in heaven or hell? What better opportunity is there to introduce that question than during a class discussion of the mathematical concept of infinity? The teacher can take a few moments or even a full period to discuss the question without affecting the overall goals of math instruction. Indeed, such a discussion may produce the richest of blessings for students who face for the first time the reality of their future life and learn the biblical solution to their sin problem. Students who already know the Lord will be encouraged as they are reminded that they will spend eternity with their Savior.

The Bible is full of measures of volume, length, time, and currency. Some of the latter are foreign to students, having been replaced by more modern ones. Can they fully understand Scripture that speaks of cubits, stadia, mites, gerahs, and shekels? You need only ask a Christian friend what these terms mean to see how uneducated most of us are. When presenting proportions or ratios, you might want to use a few word problems that require students to compare biblical measurements with modern ones. Is tithing an important part of a Christian's life? Shouldn't there be a word problem or two relating to tithing while students are learning to calculate percentages?

When the concepts of sets and subsets are introduced, why not have students, as part of their homework, study Revelation 5 through 16 and diagram the set relationship between the seven seals, seven trumpets, and seven bowls? Students often enjoy Revelation more than any other book of the Bible. This exercise will help your students understand the interrelationships of the future Tribulation judgments. They are likely to view this assignment as "fun math."

The measurements of the New Jerusalem are given in Revelation 21:15–17. Are they important? If not, why did God give them to us? He said, "*All* Scripture is God-breathed and is useful for teaching, rebuking, correcting and training in righteousness, so that the man of God may be thoroughly equipped for every good work" (2 Timothy 3:16, 17). After teaching Revelation for several years in Sunday schools and skipping over this passage because it was "boring" in comparison to the glories of the rest of the chapter, I finally decided one day that if the Lord included these measurements, He did it for a reason. I soon found that these verses are important if we are to fully appreciate the rest of the chapter. I shared my findings several times in chapel, and students often told me it was one of the chapels they remembered most. I even had students accept Christ as a result!

The spiritual results of this application of math to the Bible are truly awesome, but think also of all that the students learn without realizing it as they do the research necessary for comparing these biblical measurements with the ones they use today. They have to exercise their knowledge of fractions, percentages, ratios, areas, and volume; and they must discover how to use such tools as calculators, rulers, scales, Bible dictionaries, and Bible encyclopedias. You might have your students build a scale model, drawn to the scale of the class globe. (If you don't have one, buy one; trust me on this!) Then encourage them to place the model over the United States or over

Israel (where it will be located someday). From this exercise alone, they will gain not just a deeper understanding of future events and their future home (if they're Christians), but a knowledge of what stadia and cubits are, where the modern day word *stadium* comes from, how much land the New Jerusalem will cover, how big it will be compared with the world's largest cities, how high the wall will be compared with the altitudes of today's airplanes and the space shuttle's orbit, and much more.

They will also understand more clearly what the Lord was telling His disciples as He prepared to leave them: "I am going there to prepare a place for you" (John 14:2). You can have students calculate the potential population density of the city, assuming that every resident will have an enormous apartment one mile or kilometer square. They will find out that less than one percent of the city would hold every human being ever born. God's unwillingness that any should perish (2 Peter 3:9) takes on a new dimension since He has made the city large enough to accommodate everyone. I always tell students that this is one chapter of the Bible in which, if they are Christians, they all appear. The implications for any who are not believers are obvious, and I challenge them to make the Lord their Savior.

Since there are few published textbooks integrating math and the Bible, a math teacher must depend heavily on her own creativity to develop word problems that are relevant to the math principles being taught and appropriate to the ages of the students. Integration must always be meaningful, or students will develop a lack of respect for God's truth. Bathing your preparation with prayer and personal study of Scripture will yield eternal results in the lives of your students. Don't teach math without it!