Integration of Faith in Mathematics–K-12
Based on NAD Mathematics Curriculum Guide
Complied by the Atlantic Union Curriculum Committee Subsection: Mathematics:
David Cadavero; Chair, Viola Chapman, Cassie Johnson, Carol McDonald
February 4-6, 2008

Philosophical Basis

The Seventh-day Adventist K-12 system of education must have educators who are Christ centered and who focus on the restoration of the image of God first within themselves and then within each student.

Teachers must implement the example of Christ, the Master Teacher. Experiments, observations, research, and experience must be correlated to reveal and enhance the truths embedded in the Bible and how they relate to nature. The purpose of these strategies is to use mathematical relations and functions to illustrate Biblical truths that God has revealed to us.

The goal of each Christian mathematics teacher will be to assist each student in:

- Understanding that the universe was constructed on mathematical formulas which play a central role in the life of every Christian.
- Seeing that mathematics principles, relationships, and processes contain spiritual truths.
- Accepting and being grateful for the contributions of devout Christian mathematicians.
- Embracing the mathematical concepts of order, accuracy, precision, and balance and implementing them in every aspect of daily life.
- Perceiving new dimensions of the infinite wisdom and creative power of God and as a result will develop a closer relationship with Him.

Personal Strategies

Include basic integrational strategies such as the following:

- Have students keep a journal of personal reflections and spiritual insights gained during mathematics class.
- Pray with students and encourage them to pray whenever grappling with a concept or problem, and to praise God for success.
- When considering a mathematics unit or topic, have students respond to the questions: "What does this have to do with me?" Personal strategies that integrate faith and learning may also be developed in relation to specific topics:
- Coefficients: To what would you compare the positive and negative coefficients in your life? Write in your journal an example or two of how positive influences have improved your spiritual life or how negative influences could reduce the quality of your spiritual life.
- Number line: There are an infinite number of points between zero and one, yet each of them can be represented by a real number. Imagine all the people who have ever existed, yet each is unique and special. Reflect: Who am I to God? To others? To myself?
- Percentage: Have students estimate the time they spend on faith-building activities as compared to other types of activities. Portray the results graphically.
- Probability: What was the probability that among all the people your parents met and among all the genetic combinations, you were produced? Trace your ancestors and reflect on the odds of becoming you. Doesn't this show a special reason for your existence?
- Ratio: Compare the ratio of Christians and non-Christians in various parts of the world. What might be some of the reasons for these differences? How might these ratios be modified?

Thematic Strategies

Themes in mathematics that can contribute to an integrational approach include the following:

- Assumption: In mathematical logic, the premises accepted determine the conclusions reached. Emphasize the need for caution in making assumptions.
- Equality/inequality: All human beings are equal before God. We are not, however, on a same level with the animals or with God.
- Pattern: God is our Pattern. We can also become examples to those around us, modeling God's character in our lives.
- Prediction: God's faithfulness and dependability are illustrated in constancy and predictability of mathematical rules.
- Problems/solution: We all face difficulties, but no problem is too big for God to resolve.
- Process: As in the moral realm, rules and procedures are needed to avoid confusion and achieve the correct results.
- Substitution: Jesus died in our place so that we might be saved.
- Symbol: Symbols represent important concepts or entities, both in mathematics and in religious realm.

Number and Operations Standards		
Standard	Texts	Applications
Addition of Negative Numbers	Rom. 12:17-19 1 Cor. 6:7-8 1 Thes. 5:15 1 Pet. 3:9	•If you repeat evil for evil the end result is even more negative. (negative + negative) •If you respond to evil with good it becomes more positive. (negative + positive) •If you eliminate a negative, the outcome will be positive. (minus a negative) -Do not repay evil for evil -Beginning lawsuits and wronging others -Don't repay wrong for wrong, try to do good -Repay evil with blessings, not evil
Adding of Opposite Signs	Matt. 5:38-44 Rom. 12:21	•Modeling God's character in our lives, the opposite can overpower the original -Turn the other cheek -Overcome evil with good
Counting Money/Stewardship	Luke 15:8 Acts 19:19 1 Cor. 4:1-2 Matt. 10:29	•Be diligent in all things •Surrender all to Jesus •Faithfulness is most important aspect of stewardship -Lost coin -Giving up books of sorcery to follow Jesus -Being faithful to what we are given -Two sparrows sold for a farthing
Division	Matt. 25:33 Luke 9:14	•Sharing -Jesus will divide sheep from goats. -Sat in groups of 50
Multiplication	Matt. 18:21-22 Matt. 25:15-30 Pr. 10:22 Ecc. 11:1	-Forgiveness has no limitation, 70 x 7 -Multiply talents, spiritual gifts for Jesus -God multiplies our riches -Cast your bread upon the waters
Percentage	Acts 19:19	•Calculate times spent on various activities. What would it be to tithe time? -Bringing sorcery scrolls to be burned
Subtraction	Rom. 8:3 Mal. 3:8	-Sinful man - sin(through Jesus) = full man -We rob God when we don't return a faithful tithe -12 disciples minus Judas
Fractions	Gen. 1 Rev. 12:4 Matt. 24:40-41 Num. 15:6 Ez. 5:12	-Creation days -Lucifer taking a third of angels -One taken and one left -Fractions for offerings -Thirds in destruction of Jerusalem
Counting	Matt. 10:30 Luke 15:4-7	-Hairs of head numbered -Count 99 sheep and find one that is lost

Tax	Matt. 22:15-21 Luke 19:2 Mark 2:14	-Give to Caesar what is Caesar's -Zacchaeus, tax collector -Matthew, tax collector
Addition of Positive Integers	Pr. 19:17	-Be kind to the poor, this lends to the Lord and will be repaid in full
Money	Mal. 3:10 Luke 21:3-4 1 Tim. 6:10 Matt. 17:27	•Judas •Jesus experience with fish and temple •Nehemiah collecting for reconstruction -Bring in tithe -Widow gave all -Love of money is root of all evil -Jesus paying taxes with fish miracle...loyalty to law government
Positive Gain	1 Tim. 4:8	-Godliness is profitable for all things
Remainders	Matt. 14:15-21	-12 baskets of loaves and fish
Interest	Pr. 11:15	-Be cautious when lending/cosigning

Algebra Standards		
Standard	Texts	Applications
Equation/Equality	Job 31:6 & 15 Pr. 22:2 Acts 10:28 Gal. 3:28	-God made us equal -The rich and poor are equal in God's sight -All equal in God's sight -All persons are one in Christ
Symbols	Rev. 1:8 Rev. 1:11-20 Gen. 41	-Jesus alpha and omega (Greek characters.) -Symbolism in candle sticks etc. -Pharaoh's dream of corn and cows *Many more examples
Substitution	John 3:16	-Jesus is our substitute
Coefficients	Is. 53:6	•What "coefficients" are in our lives? What affect do they have on us? -We have gone our own way
Absolute Value	James 1:17-18	•Absolute value is always positive. God always values us positively. -Every good and perfect gift is from above...
Binomial Theorem	2 Tim. 2:10 Acts 4:12 Matt. 4:17 Rom. 3:23-24	•Applies to all binomial expressions, but the result depends on variables, salvation is available to everyone, but depends on our acceptance. -Christ made salvation available to all -Only saved through Christ -Repent for the kingdom of God is near -Justified freely through Christ
Constant	Mal. 3:6 Rev. 1:8	•Like God, a constant doesn't change -God does not change -Was, is and is to come
Linear Graphs	Luke 10:27	•x-horizontal relationship between people, y-vertical relationship with God, both important -Love the Lord your God and neighbor as self
Irrational Numbers	Deut. 29:29	•Irrational numbers are beyond or understanding as is God. -Secret things belong to God

Number Lines	Rev. 1:8 &
	  Rev. 21:6 &
	  Rev. 22:13
		-God is infinite past and future, alpha and omega

Inequalities	James 1:9-11 Rev. 1:8	•Finite vs. infinite -We will pass away like a wild flower -Jesus beginning and end
Fixed Ratio	Lev. 27:30 & 32	-Tithe is the Lords and all should be holy unto the Lord

]

Geometry Standards		
Standard	Texts	Applications
Truth Table	Ps. 19:1	•All truth must be consistent and have no contradictions. -Heavens show glory of God
Angles	Pr. 16:3	•Closer to the vertex, the closer together; The closer to God, the closer to others -Commit works to Lord and thoughts will be established
Point	Eph. 2:10 Rom. 8:15-16	•Seems insignificant, but are the building blocks of everything, we may feel unimportant, but our value is found in God. -God has planned good works for us to do -God has adopted us as sons/daughters
Similarity	2 Cor. 3:18 1 Sam. 10:6	•May not be as great as God (Bible heroes), but we become like him. -By beholding we become changed -Holy Spirit will change us
Vertex	Luke 15:11-32	•Small errors near the vertex of an angle affect it as you go away from it. In our lives small mistakes can lead us far from God. -Prodical son
Transformations-Reflections	James 1:22-25 Gen. 1:26 Matt. 1:18-28 & Luke 1-2 & John 1:1-18	-Look at word and do it -God made man in His image -Incarnation

Measurement Standards		
Requirement	Texts	Applications
General	Deut. 3:11 Job 38:4-5 Is. 40:12 & 15 Eph. 3:20 1 Pet. 1:25	-Measurements of a bed -God laid foundations of earth -Nations are drop in a bucket compared to power of God -God's blessings exceed our expectations -God's Word endures forever
Time	Ps. 90:12 Ecc. 3:1 Matt. 24:36&42 Gen. 1 John 7:6	•Stewardship -Time is precious in God's sight -Time for everything -Don't know day or hour of Christ's return -Creation, Sabbath observance -Jesus' time had not yet come
Accuracy and Honesty	Lev. 19:36 Pr. 11:1 Pr. 16:11 Pr. 20:23 Am. 8:5 Hos. 12:7 Luke 16:10	-God believes in absolute honesty and integrity-just balances and just weights etc. -False balances are an abomination to God and just weight is His delight -Just weight and balance is pleasing to God -False balances are not pleasing to God -Falsifying balances has consequences -Chose wisely when deceptions arise -Faithfulness even in little things
Conversion	 Ez. 36:26 & Ez. 11:19	•As we can convert units to new units, God converts our character to be like Him. -Take our heart of stone and give us a heart of -flesh
Estimation/Time	Ex. 12:40-41 Dan. 8:14	-Leaving Egypt -2300 day prophecy
Measuring Time	Ex. 20:8-11 & Gen. 2:2-3 Gen. 1:13 Gen. 1:14	-Sabbath observance -Measurement of a day, evening and morning -Seasons, days, years
Mass/Weight	Pr. 11:1	-Just weights delight God
Space/Length/Area/ Volume	 Rev. 21:16-17 Gen. 6:14-16 Ex. 26	•God is not limited by time or space -Measure New Jerusalem -Noah's Ark -Tabernacle
Estimation	Gen. 18:24-32 Gen. 30:37-40	-Estimation of those faithful in Sodom -Jacob deciding portion of herd

Data Analysis and Probability Standards		
Requirement	Texts	Applications
Probability	Heb 6:18-19 Matt 25:1-30 Matt 18:27	-Impossible for God to lie...never ending hope -10 Virgins -Sincerity has its reward...forgiven debt
Ratio/Proportion	Ex 20:8-11 Mal 3:10	-Honor God by keeping all His commandments -Bring all tithes to store house
Census/Statistics	Ex 38:26 & Num 1:1-4	-Statistical census in Biblical Israel
Prediction	Dan 8:14 Dan 9:24 Matt. 16:3	•Predictability of math can be compared to God's predictability -2300 Day prediction till Sanctuary cleansed -70 weeks to finish transgression and reconciliation -Prediction of weather/God predicts signs of the times

Ratio	Mat. 28:19-20
	
	Gen 6:19-7:9
	Matt 14:15-21 &
	  Mk. 6:35-44 &
	  Luke 9:12-17&
	  John 6:6-13
		-Compare the ratio of Christians to total population in
		  world. What can affect this ratio?
		-Noah's ark, animals came two by two/seven
		-Loaves and fish

Percent Increase or Decrease	Matt 25:14-30	-Talents
Graphs	Numbers 1:1-49	•Stewardship of time/money, graph how used -Graph the number of people in tribes of Israel

• Denotes ideas that can be implemented
-Explanation of text