Grammar and Composition I’s purpose is to emphasize the orderly structure of our language and to train students to use the English language effectively. The Christian perspective of this textbook promotes standards of correct grammar and usage, equipping students with the tools they need to become effective communicators in both speaking and writing.

Students will learn to recognize the different parts of speech, fit these parts of speech together to form sentences, join sentences together to make paragraphs, and organize paragraphs into compositions. They will also learn to develop complete and orderly thoughts and to communicate those thoughts clearly and concisely, so that they can use God’s gift of language effectively.

**Added Enrichment**
- English DTAs
- Review games
- Grammar Court procedures explained

**Evaluation**
- Grammar quizzes (21)
- Tests (8), quarter exams (2)
- Semester exam, final exam
- Compositions

**Compositions**
- Essays (Answer, Informative, Narrative, Process)
- Letters
- Summaries
- Character sketch
- Book reports
- Research paper

> RED indicates first introduction of content.
Grammar cont.

- The sentence cont.:
  - Correcting fragments and run-on sentences
- Parts of speech:
  - Verbs:
    - Recognizing action, linking, and helping verbs
    - Distinguishing verbs from verbs
  - Using principal parts of verbs
  - Regular verb endings
  - Irregular verbs
  - Using correct principal parts
  - Verb tense
  - Using consistent verb tense
  - Avoid incorrect verb forms
  - Use troublesome verbs correctly and avoid verb usage errors
- Nouns:
  - Recognizing nouns: compound, common, and proper
  - Recognizing collective nouns
  - Keeping agreement of subject and verb
  - Recognizing nouns as predicate nominatives, direct objects, indirect objects, objects of prepositions, direct address
  - Diagramming nouns as predicate nominatives, direct objects, indirect objects, objects of prepositions
  - Recognizing and diagramming nouns as appositives
- Pronouns:
  - Antecedents
  - Recognizing:
    - Personal, demonstrative, indefinite, compound
  - Relative pronouns
  - Keeping agreement of verbs and indefinite pronoun subjects
  - Nominative case:
    - For subjects and predicate nominatives
    - For appositives of subjects and appositives of predicate nominatives
  - Objective case:
    - For direct objects, indirect objects, and objects of prepositions
    - For appositives of direct objects, indirect objects, objects of prepositions
- Possessive case
- Adjectives:
  - Recognizing and diagramming:
    - Adjectives and proper adjectives
  - Participles
  - Distinguishing adjectives from nouns and pronouns
  - Recognizing and diagramming predicate adjectives
  - Using and diagramming:
    - Prepositional phrases as adjectives
  - Participial phrases as adjectives
  - Adjective clauses
  - Placing and punctuating adjective modifiers
  - Using adjectives in comparison
  - Avoiding double comparison and double negatives
- Adverbs:
  - Recognizing and diagramming adverbs
  - Distinguishing adverbs from adjectives
  - Using and diagramming:
    - Prepositional phrases as adverbs
  - Adverb clauses
  - Correct placement of adverb modifiers
  - Using adverbs in comparison
  - Prepositions:
    - Recognizing prepositions, prepositional phrases, and objects of prepositions
    - Distinguishing between prepositions and adverbs
    - Using prepositions correctly
  - Conjunctions:
    - Recognizing:
      - Coordinating and correlative conjunctions
    - Subordinating conjunctions
  - Interjections
  - Sentence structure:
    - Defining dependent and independent clauses
    - Recognizing and diagramming:
      - Simple and compound sentences
      - Complex and compound-complex sentences

Composition

- Manuscript form: abbreviations, numbers
- Essay Answer
  - Writing Letters:
    - Friendly: letter parts, thank-you note
    - Business: letter parts, appropriateness
- Summaries
  - The Writing Process: plan, write, rewrite, edit
  - Outline:
    - Topical outline
    - Sentence outline
    - Format of outline
    - Parallelism in an outline
    - Steps to preparing an outline
- Book reports:
  - Preparing:
    - Written book reports including introduction, body, conclusion
    - Oral book reports: written preparation and oral presentation
  - Introducing paragraphs:
    - Topic sentence
    - Summarizing sentence
    - Paragraph development with details
    - Paragraph unity
  - Paragraph coherence:
    - Chronological order, order of importance, and transitional expressions
    - Space order, pronoun reference, and repetition
- Informative Essay
  - Writing descriptions: character sketch
    - Steps: point of view, careful selection of details, arrangement of details, use of exact nouns and verbs
- The library: Dewey Decimal System, Library of Congress Classification System, using the catalog and reference section
- Research paper:
  - Planning the paper: selecting subject, finding sources, noting bibliography information, making a preliminary outline, taking notes, avoiding plagiarism
  - Writing the paper: introduction, body, conclusion
  - Using parenthetical citations

Grammar & Composition cont. p. 109
**ENGLISH: Grammar & Composition**

- Rewriting the paper:
  - Check:
    - Organization, introduction, and conclusion
    - Unity, coherence, and citations
- Editing the paper: check each paragraph, sentence, word; capitalization and punctuation
- Preparing works cited page
- Finalizing the paper

**ENGLISH: Vocabulary, Spelling, Poetry**

Vocabulary, Spelling, Poetry I emphasizes the application of spelling rules to lists of challenging words and the utilization of an expanded vocabulary. All of the spelling words are practical, and many are words that are frequently misspelled. A majority of the vocabulary words are taken from the stories in *Of People*. The goals of poetry recitation and memorization are an enjoyment and appreciation of poetic beauty and excellence.

**Added Enrichment**
- English DTAs
- Spelling and vocabulary lists (28) including review list at end of each quarter:
  - Spelling words (560)
  - Vocabulary words (280)
  - Organized by spelling rules, suffixes, homonyms, compound words, and commonly misspelled words
- Application exercises (56)

**Evaluation**
- Spelling and vocabulary quizzes:
  - Weekly (28)
  - Quarterly review (1 each quarter; each counts as 2 quiz grades)
- Poetry quizzes:
  - Written (7)
  - Oral (2)

**Spelling & Vocabulary Skills Development**

- Master spelling and vocabulary lists that include:
  - Vocabulary words and definitions
  - Words that follow the spelling rules
  - Sound-alike suffixes
  - Commonly misspelled words
  - Homonyms
- Use vocabulary words in sentences and in proper context
- Memorize vocabulary definitions
- Be able to identify commonly misspelled words
- Apply spelling and phonics concepts through daily teacher-directed oral practice and independent written practice
- Learn:
  - Antonyms and synonyms of vocabulary words
  - To distinguish between homophones
  - Practical spelling tips and suggestions by studying *Keys to Good Spelling*
  - Spelling rules:
    - Use *i* before *e*, except after *c*, or when sounded like long *a*
    - Double a final consonant before adding a suffix beginning with a vowel

**Poetry Skills Development**

- Memorize 7 lyrical poems and 1 hymn
  - Develop appreciation of poetry
  - Lay foundation for future literature study
  - Perform in front of an audience
  - Recite in unison
  - Use appropriate expression and volume
  - Increase vocabulary
  - Demonstrate comprehension of emotion and content
  - Develop a mental visualization of the poem
  - Discuss meaning and purpose of poems
  - Use proper observation of punctuation
Basic Mathematics is the capstone of arithmetic studies. Students must solidify their skills in arithmetic and be confident, competent operational problem solvers before moving on to algebra.

Basic Mathematics builds on the foundation set in grades 1–6 by the incremental review and practice of whole numbers, fractions, decimals, ratios, percents, and measurements. Students continue to practice their arithmetic skills by applying them to finances and mathematics in daily life. Units on statistics, algebra, plane and solid geometry introduce students to higher mathematics.

Word problems and the Problem Solving Strategies feature ensure that students can apply their mathematical skills to everyday situations, and it encourages them to connect varying types of mathematical knowledge. Skills development exercises and abundant practice problems help students to work quickly and accurately.

**Numbers**
- Place value:
  - Whole numbers to the 100 billions’ place
  - Decimals to the millionths’ place
  - Writing numbers up to 100 billions
- Terms: notation, numeration, prime numbers, composite numbers
- Reading numbers
- Rounding: whole numbers, money, decimals
- Roman numerals:
  - Value of I, V, X, L, C, D, M
  - Rules for forming Roman numerals
- Prime numbers
- Eratosthenes sieve
- Prime pair, reciprocal
- Composite numbers
- Number line
- Signed numbers:
  - Reading and writing, zero as a reference point
  - Absolute value, comparing, adding, subtracting, multiplying, dividing
- Using number sense

**Evaluation**
- Quizzes (34)
- Skills development exercises (54)
- Tests (8)
- 9-weeks exam (2)
- Semester exam, final exam

Red indicates first introduction of content.
MATHEMATICS: Basic Mathematics cont.

Addition
- Terms: addend, sum
- Whole numbers, fractions, decimals, compound measures
- Signed numbers with and without a number line
- Checking by addition and by casting out 9s
- Mental arithmetic
- Timed mastery
- Arithmetic progression
- Word problems
  - Principle: distributive
  - Axiom

Subtraction
- Terms: minuend, subtrahend, difference
- Whole numbers, fractions, decimals, compound measures
- Signed numbers
- Checking by addition
- Mental arithmetic
- Timed mastery
- Word problems

Multiplication
- Terms: factors, partial product, product
- Whole numbers, fractions, decimals, compound measures
- Signed numbers
- Checking by reversing factors and by casting out 9s
- Recognize symbol: • (raised dot)
- Mental arithmetic
- Timed mastery
- Word problems
- Factors:
  - Finding common and greatest common factor
  - Prime factors
  - Prime factoring:
    - Division by primes
    - Factoring tree
  - Least common multiple
  - Factorial
  - Axiom

Division
- Terms: dividend, divisor, quotient, remainder
- Estimating quotients
- Whole numbers, fractions, decimals
- Compound measures
- By powers of ten
- Signed numbers
- Checking by multiplying and by casting out 9s
- Divisibility rules
- Divisors: 4 digits
  - Division with end zeros
- Mental arithmetic
- Timed mastery
- Word problems

Fractions
- Terms: numerator, denominator
- Equivalent fractions
- Reducing
- Types:
  - Proper, improper, mixed
  - Complex
- Addition, subtraction, multiplication, division
- Timed mastery
- Word problems
  - Simplifying complex fractions
  - Changing fractions to decimals and decimals to fractions

Decimals
- Place value to the millionths’ place
- Mixed
- Reading and writing
- Comparing
- Addition, subtraction, multiplication, division
- Timed mastery
- Word problems
- Rounding
- Money
- Multiplying and dividing by powers of ten
- Changing fractions to decimals
  - Terminating, repeating
  - Nonterminating and nonrepeating
  - Converting repeating decimals to fractions

Ratios
- Terms: antecedent, consequent
- Reading and writing
- Equivalents
- Word problems

Proportions
- Terms: means, extremes
- Reading and writing
- Finding missing terms
- Word problems

Percents
- Recognize symbol: % (percent)
- Reading and writing:
  - Percent as a fraction, decimal
  - Decimals as a percent
  - Fractions as a percent
  - Subtracting from 100%
  - Percents over 100% and under 1%
  - Percents ending in fractions
  - Percent given as more or less than

Basic Mathematics cont. p. 112
Measures
- Metric prefixes
- Length:
  - English: inch, foot, yard, mile
  - Metric: millimeter, centimeter, decimeter, meter, decameter, hectometer, kilometer
- Biblical: cubit, span, finger, fathom
- Capacity:
  - English: teaspoon, tablespoon, fluid ounce, cup, pint, quart, gallon, peck, bushel
  - Metric: milliliter, centiliter, deciliter, liter, decaliter, hectoliter, kiloliter
- Biblical: log, hin, ephah, homer, cor
- Time: second, minute, hour, day, week, month, year, leap year, decade, score, century, millennium
- Weight:
  - English: ounce, pound, ton
  - Metric: milligram, centigram, decigram, gram, decagram, hectogram, kilogram
- Biblical: shekel, dram, menah, gerah, talent, mince, litra

Mathematical Geography
- Time:
  - Table of time: second, minute, hour, day, week, month, year, leap year, decade, score, century, millennium
  - Prime Meridian, International Date Line
- Time zone conversions
- Daylight Savings Time
- Longitude and latitude, degrees
- Temperature:
  - Thermometer, degrees
  - Climate zones: torrid, temperate, frigid
  - Converting Celsius to Fahrenheit and Fahrenheit to Celsius
  - Temperature and altitude: finding the drop in temperature

Geometry
- Plane Geometry:
  - Symbols and definitions:
    - Point, line segment, congruent, line, ray, angle, vertex
    - Right angle, intersection of lines, perpendicular lines, parallel lines, plane
  - Geometric plane shapes:
    - Simple closed shape, similar shapes, congruent shapes
    - Polygon, triangle, quadrilateral, parallelogram, rectangle, square
    - Rhombus, trapezoid, pentagon, hexagon, heptagon, octagon
  - Perimeter of rectangle, parallelogram, square, triangle
  - Area:
    - Of rectangle, square, parallelogram, triangle
      - Of trapezoid
- Angles:
  - Right, acute, obtuse, straight, in a circle
  - Measuring, constructing, and bisecting angles
  - Triangles: right, isosceles, equilateral, sum of angles
  - Using a compass and protractor
  - Constructions:
    - Angles, bisecting angles
    - Perpendicular lines
- Using algebra in geometric problems
  - Circle:
    - Center, radius, diameter, arc, semicircle, angle, vertex, degree
    - Circumference using diameter and radius formulas
    - Area
MATHEMATICS: Basic Mathematics cont.

- Solid geometry:
  - Solid figures: rectangular solid, cube, triangular prism, square pyramid, cylinder, cone, sphere
  - Formulas for finding surface area of rectangular solid, cube, square pyramid, cylinder
  - Formulas for finding volume of rectangular solid, cube, square pyramid, cylinder

Trigonometry

- Terms: hypotenuse, legs, sine, cosine, tangent
- Pythagorean rule: finding length of hypotenuse and legs
- Finding the sine, cosine, and tangent using the formula and trigonometric ratios chart

Problem Solving & Applications

- Word problems:
  - Addition, subtraction, multiplication, division, fractions, decimals
  - Money, averages, proportions, percents, measures, time, graphs
  - Equations, trigonometry
  - Mixed operations
  - One- to four-step problems
  - Choosing the better method
  - Simplifying the problem

HISTORY & GEOGRAPHY: World History

History of the World is presented from a conservative, Christian perspective as part of a well-rounded program designed to give students a better understanding and a working knowledge of the geography of the Eastern Hemisphere. The interesting narrative style of the text and the many illustrations, maps, and photographs invite students to explore the past and learn about the people behind the events of world history.

The goal of the text is threefold: first, to show God’s hand in the history of the world; second, to emphasize the role of individuals in history; and third, to teach the many lessons that can be learned from history. Above all, History of the World emphasizes the providence of God in the actions of men. It provides students with heroes to emulate and goals to fulfill by focusing on the individuals whose character, initiative, and hard work have made a positive impact on world history.

Added Enrichment

- Special feature boxes (42):
  - Highlight important people and events of history
  - Present fascinating facts and intriguing details from a Christian perspective
  - Introduce the foundations of history and place importance on knowing current history
  - Maps correlating to text (62)

Evaluation

- Review quizzes (40)
- Reading quizzes (27)
- Current event reports (31; each presentation counts as quiz grade)
- Geography projects (13; each counts as quiz grade)
- Tests (8), 9-weeks exam (2)
- Semester exam, final exam

Beginning of World History: The Ancient Middle East

- The beginning:
  - Creation
  - Fall of man:
    - Cain, Abel, Seth
    - Capital punishment
  - Flood
  - Dispersion
- From Sumer to Canaan
  - Sumerian civilization and religion
  - Call of Abraham
  - Hammurabi and Babylon

> **RED** indicates first introduction of content.
New Empires & Cultures
- Assyria, Babylon, and Persia
  - Assyrian Empire:
    - Shalmaneser V and Ashurbanipal
    - Chaldean Empire: Nebuchadnezzar
  - Persian Empire: Cyrus the Great:
    - Darius and the Royal Road
- Greece
  - Early Greek civilization:
    - Dorians
  - Homer and the Olympian gods
  - Greco-Persian Wars
  - Athens and Sparta:
    - Greek politics and philosophy
    - Peloponnesian War
  - Alexander the Great
- Rome before Christ
  - Foundation of Rome
  - Roman republic
  - Punic Wars
  - Julius Caesar
  - Roman drama
  - Caesar Augustus
  - Measuring time
- Rome after Christ
  - Gospel of Christ
  - Persecution of early church:
    - Claudian and Flavian emperors
    - Constantine the Great:
      - Edict of Milan
    - Fall of the Roman Empire
  - Understanding why the Roman Empire fell

The Middle Ages & the Distortion of Christianity
- Early church history
  - New Testament
  - Early church
  - Rise of Roman church and popes
- Islam and the Crusades
  - Mohammed and Islam
  - Europe’s Crusades:
    - Christendom and Islam: checks and balances
- From empire to feudalism
  - Merovingian and Carolingian Kings:
    - Papal states
    - Charlemagne and his empire
    - Treaty of Verdun
  - Feudalism
- Age of Darkness
  - Distorted Christianity:
    - Doctrines of the Roman church
    - Scholasticism
    - Holy Roman Empire
    - Renaissance

Beginning of the Modern Age
- Protestant Reformation
- Forerunners of the Reformation
- John Wycliffe and John Huss

- Inquisition
- Gutenberg and the printing press
- Erasmus
- Martin Luther:
  - Luther’s reforms
  - Zwingli and Calvin
  - Anabaptists and Mennonites
- Post-Reformation Europe
  - Peasant’s Revolt
  - State churches: Peace of Augsburg
  - Counter-Reformation
  - Thirty Years’ War: Peace of Westphalia
  - Seventeenth-century Europe:
    - Swiss Confederation
    - Franks and Capetian Dynasty
- English nation
  - Alfred the Great
  - Norman Conquest:
    - Domesday Book
  - Witan and the Great Council
  - Plantagenet kings:
    - Henry II, Richard I, John
    - Magna Carta and Parliament
  - Hundred Years’ War and Wars of the Roses
  - Henry VIII
  - Scottish and English Reformation
  - Elizabethan Age: Spanish Armada
  - Great English Civil War
  - Restoration of the monarchy
  - Glorious Revolution
- Age of Exploration
  - Asia’s mysterious land: India, China, and Japan
  - Time of discovery:
    - Effects of the Crusades
  - New World: Christopher Columbus, Vasco da Gama, and Amerigo Vespucci
  - Other nations explore: Portugal, France, England
- United States
  - Pilgrims
  - Philipp Spener
  - Wesleyan Revival and Great Awakening
  - War for Independence
  - Constitution of the United States
  - Expansion and progress
  - Rise as a world power
  - Revival and missions

Rise of Modern Europe
- France in the Modern Age
  - Huguenots:
    - Edict of Nantes
  - Reign of Louis XIV
  - Age of Enlightenment: Voltaire, Montesquieu, and Rousseau
  - French Revolution
  - Robespierre and Reign of Terror
  - Napoleon Bonaparte:
    - Battle of Nations and Battle of Waterloo
    - Congress of Vienna
    - July Revolution
HISTORY & GEOGRAPHY: World History cont.

- British Empire: Asia, Africa, and Australia
  - Victorian Age
  - British Empire:
    - Conflicts of England and Ireland
    - Christianity and charity
      - Missions
  - India and the Far East:
    - Sepoy Rebellion
  - Africa:
    - Slave trade
    - Samuel Adjai Crowther
    - Australia and Canada:
      - British North America Act
- Science and industry in the Modern Age
  - Failures of ancient and medieval science
  - Founders of modern science
  - Darwin and evolution:
    - Understanding evolution’s threat to science
  - Agricultural advancement
  - Industrial Revolution:
    - Inventors and captains of industry
    - Triumph of capitalism
- New world of classics
  - Ancient and modern classics
  - Medieval music
  - Post-Reformation music, art, and literature

An Era of Change
- World War I and the rise of Communism
  - Unification of Germany and Italy
  - World War I:
    - Battles: Verdun, Sommé, Jutland
    - Treaty of Versailles
  - Czarist Russia
  - Karl Marx and Communism:
    - Capitalism, socialism, and Communism
  - Bolshevik Revolution
  - Vladimir Lenin and Joseph Stalin:
    - Five Year Plan
    - Soviet Union
- Before and during World War II
  - Anti-Christian philosophies
  - Mussolini and Fascist Italy
  - Hitler’s Third Reich
  - 1920s and the Great Depression
- World War II:
  - Battle of Britain
  - American involvement: Pearl Harbor
  - War in Africa
  - European and Pacific Theater
    - Atomic bomb and the Holocaust
- Cold War Era:
  - United Nations
  - Cold War
  - NATO
  - Berlin Wall:
    - Operation Airlift
- Space Age
  - Communist takeovers
    - China
  - Korean War:
    - 38th Parallel
  - Communist Cuba
  - Vietnam Conflict:
    - Gulf of Tonkin Resolution
- Modern Middle East:
  - Balfour Declaration; independence for India and African nations
  - Collapse of Soviet Union
    - Ronald Reagan
  - Gorbachev’s influence: perestroika and glasnost
  - Tiananmen Square
- Toward a new millennium
  - New World Order
  - European Union
  - NAFTA
  - World Changes
    - Persian Gulf War
    - United States, Central and South America, Russia
  - Modern culture: literature, music, art, architecture
  - Changes in technology
  - Change in the new millennium
    - 9/11 Attack: Osama bin Laden and al-Qaeda
    - War on Terror:
      - Operation Iraqi Freedom
      - Arab Spring
    - Change in politics
      - Nuclear nations
      - Israeli/Palestinian conflict
      - African Union
        - Kosovo, Venezuela, Cuba
    - Economic world change
      - United States’ financial crises
    - Asian economies
    - Changes in the natural world
      - Environmentalism and global warming

Geography
- Fertile Crescent
- The Modern Middle East
- Asia
- Ancient Empires
- Greek Lands
- Italy
- World Geography
- Europe
- The British Isles
- France
- Australia
- Africa
- Nations of the World

Prayer Time
- Learn to pray for our nation and for government officials
SCIENCE: Science: Order & Design

Many life science textbooks study the "simple" cell as the origin of life and discuss the "evolution" of life through the plant and animal worlds. Science: Order and Design uses a different approach. This life science text begins with the more complex plant world and human anatomy and physiology. Evolutionary hypotheses are discussed and discarded as unscientific. Similarities between man and animals are explored and proved to be the result of a common Designer, laying a biblical foundation of origins. A look at the complexity of the "simple" cell, the basis of all life, emphasizes the hand of the Creator in its design. A study of ecology shows God's providential design in the relationships between living things and their environments.

Added Enrichment
- Feature boxes with activities, puzzles, extra information, hands-on investigations for the classroom and at home
- Short articles highlighting God's design in Creation (16)
- Science Investigations (28)
- Challenging homework questions to provoke thinking more deeply about concepts taught (88)
- Thought-provoking review exercises (7)
- Highlighted fun facts (131)
- Review activities to prepare for tests (33)

Evaluation
- Reading quizzes (27)
- Review quizzes (40)
- Insect collection (counts as 3 quiz grades)
- In-class STEM project (counts as one quiz grade and one test grade)
- Tests (8), quarter exams (2)
- Semester exam, final exam

Introduction to Life Science
> Introduction of basic terms: biology, organism, divisions of biology, characteristics of living things
> Symmetry in living things
> Observing nature: how to set up an observation notebook and observation kit
> Overview of environments: meadow, woodlands, freshwater, and marine
> Biological classification:
  - Pioneers in classification: John Ray and Carolus Linnaeus
  - Classification system:
    - Kingdom, phylum, class, order, family, genus, species, scientific name
> Six–kingdom system
> Scientific method:
  - Six-step process
  - Explains process of the experimental method
  - Differentiate hypotheses, theories, and scientific laws
  - Differentiate experimental and control groups, types of variables
  - Scientific reasoning, scientific models

Plants
> Purpose and design of flowers:
  - Functions and structures of flowers:
    - Style, anther, filament, receptacle
  - Pollination and fertilization:
    - Process, provisions for fertilization, results, development:
      - Sperm cell, egg cell, embryo, endosperm, plumule, radicle
    - Seed dispersal:
      - Fruit
      - Mechanical and agent dispersal
  - Germination:
    - Requirements
    - Process
  - Plant life expectancies:
    - Angiosperms vs. gymnosperms
  - Familiar flower families:
    - Buttercup, mint, honeysuckle, parsley, milkweed, and amaryllis families

Human Anatomy & Physiology
> Outward divisions: head, trunk, appendages
> Cardiovascular system:
  - Arterioles, venules
  - Blood flow through veins
  - Pericardium
  - Pulmonary, coronary, and systemic circulation
> Respiratory system:
  - Nasal cavity, pleura
> Digestive system:
  - Enzymes, peristalsis, sections of small intestine, rectum, feces
  - Excretory system:
    - Urinary system, ureters, urethra
  - Lymphatic system:
    - Neutrophils, macrophages, phagocytes
  - Main types of lymphocytes; types of immunity
  - Integumentary system:
    - Adipose tissue

RED indicates first introduction of content.
SCIENCE: Science: Order & Design  cont.

- Skeletal system:
  - Axial and appendicular skeleton
  - Maxilla, mandible
  - Pelvis
  - Hinge joint, pivot joint, ball-and-socket joint
  - Fracture repair
- Muscular system:
  - Largest body system by weight
- Nervous system:
  - Impulses
- Endocrine system:
  - Gland defined, parathyroid glands, epinephrine
  - Types of diabetes mellitus
- Reproductive system: eggs, sperm
- Tissue types
- Prenatal growth and development:
  - Pictures and detailed descriptions of development at weekly intervals:
    - Conception, fertilization, uterus

A Healthy Life

- Proper nutrition:
  - Carbohydrates, fiber, protein, fats, vitamins, minerals, and water:
    - Amino acids, lipids
  - Calories, metabolism, healthy diet:
    - Basal metabolic rate
- Exercise:
  - Anaerobic
  - Aerobic, training heart rate, benefits
- Rest
- Outward appearance: cleanliness, grooming, sun exposure, acne, dental care
- Introduction to disease:
  - Bacteria, viruses
  - Infectious
  - Noninfectious
  - Spread of pathogens
  - Common diseases:
    - Common cold, AIDS, allergies
    - Cardiovascular disease, cancer
- Substance abuse:
  - Medications, abuse
  - Dependence, withdrawal
  - Narcotics, hallucinogens, stimulants, depressants, inhalants
- Personal safety: falls, electrical safety, fire and burns, poisons, power tools
  - First aid: basic principles, sprains, strains, fractures, dislocations, wounds, choking, poisoning, burns
- Emotions: adolescence
- Spiritual health: Bible study and prayer

Creation & Science

- Design in nature: introduction, history, and evidence of design
- Homology; similar structures
- Information in living things: complexity, DNA, mutations
- Natural selection: kind, speciation vs. macroevolution, specific examples
- Three views of life: "tree of life"—evolution, "lawn view," "orchard view"—Creation science
- A Christian’s faith: what I believe and why

- History of science:
  - Materialism, Aristotle, Middle Ages
  - General and special revelation
  - Protestant Reformation
  - The Bible and science: advances in modern life science
  - Law of biogenesis: experiments by Redi and Pasteur
  - Worldviews and science: ordered or accidental, who determines truth, faith
  - Development of modern evolutionary thought: Darwin, Lyell, uniformitarianism, missing links

  Evolution as a retreat from true science:
  - Abiogenesis, evolutionary relationships, phylogenetic trees
  - Recapitulation, vestigial organs, mutations
  - Evolution of horses, whales, humans
  - Mutations: most are harmful or deadly, gradualism, punctuated equilibrium

Mammals

- Vertebrates and invertebrates
  - Characteristics of vertebrates
  - Characteristics of mammals:
    - Four-chambered heart
  - Hair, mammary glands, endoskeleton, warm-blooded
  - Orders of placental mammals: 16 orders taught with more than 90 specific example animals
  - Marsupials: mammals with pouches
  - Egg-laying mammals—monotremes
  - Endangered animals

Birds

- Internal anatomy:
  - Skeletal and muscular systems
  - Respiratory, cardiovascular, and digestive systems
  - Senses:
    - Sight, hearing
    - Smell
  - Feathers:
    - Flight and down feathers, structure, preening
    - Contour feathers, growth, molting
  - Flight: motions, types of flight; airfoil, lift, thrust, drag
  - Behavior:
    - Audible communication
    - Visual communication
    - Baths
    - Dusting, anting, mobbing, running, migration
    - Courtship, egg laying, nesting, incubation
    - Identifying features: wings, tails, bills, feet, field marks
  - Groups: perching, birds of prey, water, game, tropical, flightless

Fish, Reptiles, & Amphibians (Cold-Blooded)

- Fish anatomy and groups:
  - External and internal structures of bony and cartilaginous fish:
    - Types of fins, types of scales, myomers
  - Circulatory, digestive, excretory, nervous, and reproductive systems
- Reptile anatomy and groups:
  - External and internal structures, and characteristics:
    - Lizard and snake groups, snake movement, snake venom, tuataras
  - Dinosaurs and similar creatures: descriptions of various types
- Amphibians:
SCIENCE: Science: Order & Design cont.

Fish, Reptiles, & Amphibians (Cold-Blooded) cont.

- Anatomy
  - Metamorphosis
  - Salamanders, frogs, and toads:
    - Salamander life cycles, estimation
    - Caecilians (limbless amphibians)

Insects

- Common characteristics of arthropods:
  - Basic common traits:
    - Open system of circulation
  - Jean-Henri Fabre—entomologist
  - Insect anatomy and life cycles:
    - Complete and incomplete metamorphosis
    - Structure of compound eyes
  - Insect orders:
    - Coleoptera (sheathed wings), Hemiptera (half-wing)
    - Homoptera (same wings), Diptera (two wings)
    - Orthoptera (straight wings), Odonata (toothed)
    - Neuroptera (nerve wings)
    - Hymenoptera (membrane wings), Lepidoptera (scale-wing)
  - Insects and man: helpful and harmful characteristics of insects
  - Assorted invertebrates
    - Crustacean anatomy and orders (aquatic arthropods):
      - Common anatomy
        - Groups:
          - Decapods
          - Amphipods, copepods, branchiopods
          - Cirripedes
        - Krill
      - Isopods, includes woodlice
    - Arachnid anatomy and groups:
      - Details of common anatomy
      - Spiders, daddy longlegs (harvestmen), scorpions
    - Pseudoscorpions
    - Mites, ticks
    - Centipedes and millipedes: comparison and contrast of traits
    - Non-arthropod invertebrates
      - Worms
        - Annelids, (segmented worm, platyhelminth (flatworm), nematode
      - Mollusks: bivalve, gastropod, cephalopod
        - Echinoderm, coelenterate
      - Sponges

Microbiology

- Cell theory: introduction to the cell, Robert Hooke
- Cell structure:
  - Basic structures and functions:
    - Plant cell structure and differences from human and animal cells
- Microscope parts and operation
- Genetics and heredity
  - Gene, allele, homozygous, heterozygous, genotype, phenotype
  - Asexual and sexual reproduction, mitosis, meiosis
  - Replication, transcription, translation
  - Laws of heredity, Punnett square, pedigree chart
  - Selective breeding, genetic engineering
- Algae:
  - Characteristics and types:
    - Classification; volvox, spirogyra

Fungi

- Characteristics and types:
  - Classification
  - Rusts, smuts
  - Yeast reproduction

Protozoa

- Leeuwenhoek, sarcodines, ciliates
  - Flagellates, sporozoa, vorticella, stentor
- Bacteria: eukaryotes and prokaryotes, characteristics, examples of helpful and harmful bacteria

Forestry

- Tree groups:
  - Basic traits of angiosperm and gymnosperm trees:
    - Cycads, ginkgoes
- Tree structure:
  - Details of roots, stems, branches, and leaves:
    - Bark and wood as vascular tissue
    - Pith
    - Bud structure and types
    - Nodes and lenticels
    - Sun and shade leaves, leaf pigments
- Locations of American forests: introduction and geographical description of North American forests
- Branches of forestry: introductory concepts regarding forestry
- Functions and resources of forests
- Using forests: harvesting methods and renewing the resources
- Notable tree species: details and characteristics of 24 types of North American trees
- Forest conservation: Theodore Roosevelt, sustainability, reforestation, forest fires, disease, insects

Ecology

- Factors in an ecosystem:
  - Overview of factors affecting an ecosystem
  - Tolerance vs. optimum range
  - Limiting factor
  - Carrying capacity, overpopulation
  - Biodiversity
  - Biogeochemical cycles
  - Ecological succession
- Levels of ecology: biosphere, atmosphere, lithosphere, hydrosphere, community, population
- Types of biomes:
  - Overview of traits and communities of:
    - Tundra, boreal forest, temperate deciduous forest
    - Grassland, tropical rainforest
    - Aquatic biomes
- Nutrition types: traits and types of producers and consumers:
  - Food chains
  - Trophic levels
  - Energy pyramids
  - Food webs
- Special nutritional relationships: predation, symbiosis, competition, and neutralism
- Dominion and stewardship: role of man in the environment, biblical stewardship
- Dangers of modern environmentalism: bias, pantheism
- Biblical conservation:
  - Bible examples
BIBLE: Exodus (one semester)

Exodus is designed to give students a basic overview of the way God miraculously delivered His people out of captivity and led them into the Promised Land. When we understand many of the Israelites’ struggles and how God’s people often turned away from His leading, it shows us how God will deal with us if we stray from trusting in His perfect plan. By studying Exodus, students will clearly see God’s patience and mercy as He deals with His people.

Lessons 142 Abeka Flash-a-Cards
- Abraham through Joseph (14 lessons)
- Moses in Egypt (17)
- Journey to Sinai (15)
- Journey through the Wilderness (18)
- Tabernacle (6)

Music 37 songs
- Hymns of the faith, choruses, holiday songs

Evaluation
- Verses:
  - Verse quizzes (11)
  - 9-weeks verses exam (1)
  - Final verses exam (1)
- Content:
  - Quiz on the books of the Bible (1)
  - 9-weeks content exam (1)
  - Final content exam (1)

Memory Work
- Passages (11 containing 34 verses) and the books of the Bible

Prayer Time
- Learn to pray for each other, our nation, those in authority over us

BIBLE: Life of Christ (one semester)

This second-semester course focuses on the many narratives in the Gospels and covers Christ’s life from His birth through His ascension. The example that Christ set for believers, both then and now, helps us pattern our lives after our Savior. Christ’s teaching and miracles show us what He valued and help us understand His earthly ministry in a more complete way.

Lessons 178 Abeka Flash-a-Cards
- First Christmas (8 lessons)
- Boyhood & Early Ministry of Jesus (17)
- Jesus Heals & Helps (13)
- Later Ministry of Jesus (12)
- Crucifixion and Resurrection (17)

Music 40 songs
- Hymns of the faith, holiday songs, choruses

Evaluation
- Verses:
  - Verse quizzes (13)
  - 9-weeks verses exam (1)
  - Final verses exam (1)
- Content:
  - 9-weeks content exam (1)
  - Tests (4)
  - Final content exam (1)

Memory Work
- Passages (13 containing 35 verses)

Prayer Time
- Learn to pray for each other, our nation, those in authority over us