ENGLISH: *Grammar & Composition*

Two vital abilities, the ability to express one's ideas creatively as well as correctly and the ability to comprehend and interpret the written word skillfully, are built upon the elements studied in English 9. *Grammar and Composition III* provides foundational practice of proper grammar and develops the basic composition skills utilized in outlining, researching, and composing a variety of rhetorical expositions and creative writing.

Added Enrichment

- Review games
- Grammar Court procedures explained

Evaluation

- Grammar quizzes (26)
- Tests (8), 9-weeks exam (2)
- Semester exam, final exam
- Compositions:
  - Book reports: full (2), short (1), oral (1)
  - Paragraph (1)
  - Research paper (1)
- Optional (graded at teacher discretion):
  - Outline
  - Essays: short formal, full formal, comparison and contrast, literary
  - Literary dramatization
  - Short story

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Grammar

- Capitalization:
  - Proper nouns and words formed from proper nouns:
    - Particular persons, places, things
      - Political and economic organizations and alliances
    - Words referring to Deity and Holy Scripture
    - Words from proper nouns
    - Common noun or adjective when part of proper name
  - Titles of persons, titles of works
  - First word of every sentence
  - Pronoun *I* and interjection *O*
  - First word of every line of poetry
- Punctuation:
  - End marks:
    - Period:
      - For declarative sentences and abbreviations
      - ➤ For indirect question and polite request
    - Question mark for interrogative sentences
    - Exclamation point for exclamatory sentences
  - Commas:
    - Before a coordinating conjunction joining two independent clauses
    - To indicate:
      - Omissions or avoid possible misreading
      - Nonessential elements in a sentence:
        - Appositive and appositive phrase
        - Participial phrase
        - Adjective and adverb clauses
        - Direct address
        - *Well, yes, no,* or *why*
        - Parenthetical expressions
    - To set off introductory phrases or clauses
    - In dates and addresses
    - After salutations and closings of letters
  - Semicolons:
    - Between independent clauses:
      - If not using coordinating conjunction
      - Joined by:
        - Transitional words
        - Coordinating conjunction if clauses already contain commas
    - Between items in a series if the items contain commas
  - Colons:
    - Before a list of items
    - To introduce a formally announced statement or quotation
    - Between:
      - Chapter and verse of Bible reference
      - Hour and minute of time reference
    - After salutation of a business letter
  - Italics:
    - For titles of books, magazines, newspapers, plays, works of art, ships, trains, aircraft, and spacecraft
    - For words, letters, numbers referred to as such
    - For foreign words or phrases
  - Hyphens:
    - To divide a word at the end of line
    - In compound numbers
    - In fractions used as adjectives
    - In prefixes before a proper noun or adjective
    - In compound adjectives before a noun
  - Quotation marks:
    - In a direct quotation
    - To enclose:
      - Titles of short poems, songs, chapters, articles, and other parts of books or magazines
      - A quoted passage of more than one paragraph: at the beginning of each paragraph and at the end of the last paragraph
  - Apostrophes:
    - To form:
      - Possessive case of nouns
      - Individual possession within a group
      - Possessive case of indefinite pronouns
    - To show omissions from words
    - With *s* to form plurals of letters, numbers, signs, and words used as words
  - Dashes:
    - After a series of words or phrases giving details about a statement that follows
    - To indicate an abrupt change or break in a sentence
    - To set off parenthetical elements or confidential comments
  - Parentheses:
    - To enclose:
      - Parenthetical elements
      - ➤ Brief confirmatory information

Grammar & Composition cont. p. 154

➤ **RED** *indicates first introduction of content.*

ENGLISH: *Grammar & Composition* *cont.*

Grammar *cont.*

- The sentence:
  - Definition of sentence
  - Kinds of sentences classified by purpose: declarative, imperative, interrogative, exclamatory
  - Recognizing subjects and verbs: complete subject, simple subject, complete predicate, simple predicate, and verb phrase
  - Overcoming problems locating subjects and verbs:
    - Finding:
      - Subject in an inverted sentence: interrogative sentence, sentence beginning with *there* or *here*
      - Subject of an imperative sentence
      - Verb phrase that is interrupted by other words
  - Diagramming subjects and verbs
  - Recognizing and diagramming compound subjects and verbs
  - Recognizing complements
  - Correcting fragments and run-on sentences:
    - Correcting run-ons by comma and coordinating conjunction
    - ➤ Correcting run-ons by semicolon or subordination
  - Sentence structure:
    - Defining dependent and independent clauses
    - Recognizing and diagramming simple, compound, complex, and compound-complex sentences
    - Recognizing noun clauses used as subjects of independent clauses
  - ➤ Consistency of subject, tense, or voice
- ➤ Improving communication
  - ➤ Conciseness and subordination
  - ➤ Business letters and memos
  - ➤ Proofreading skills
  - ➤ Effective listening
  - ➤ Avoiding gobbledygook
  - ➤ Word choice
  - ➤ Parallel structure
  - ➤ Presentations
  - Exact and vivid words
- Parts of speech:
  - Recognizing eight parts of speech
  - Verbs:
    - Recognizing action (transitive and intransitive), linking, and helping verbs
    - Distinguishing verbs from verbals: participles, gerunds, and infinitives
    - Using principal parts of verbs
    - Regular verb endings
    - Irregular verbs
    - Using correct principal parts
    - Verb tenses:
      - Progressive and emphatic forms
      - ➤ When to use the tenses
    - Using consistent verb tense
    - Active and passive voice
    - Mood: indicative, imperative, subjunctive
    - Avoid incorrect verb forms
    - Use troublesome verbs correctly and avoid verb usage errors
    - Use exact and vivid verbs
  - Nouns:
    - Recognizing nouns
      - Compound, common, proper, and collective
      - ➤ Concrete and abstract
    - Keeping agreement of subject and verb
    - Recognizing and diagramming nouns as predicate nominatives, direct objects, indirect objects, objects of prepositions, direct address, and appositives
    - ➤ Using nominative absolutes
    - Using exact and vivid nouns
  - Pronouns:
    - Antecedents
    - Recognizing personal, interrogative, demonstrative, indefinite, compound, relative
    - Keeping agreement of verbs and indefinite pronoun subjects
    - Making pronouns agree with their antecedents in number and in gender:
      - ➤ Using expressions that agree with the object of the preposition such *as one of those who (which, that)*
    - Nominative case:
      - For subjects, predicate nominatives
      - For appositives of subjects, appositives of predicate nominatives, appositives to subjects, and appositives to predicate nominatives
    - Objective case:
      - For direct objects, indirect objects, objects of prepositions
      - For appositives of direct objects, indirect objects, objects of prepositions
      - For appositives to direct objects, indirect objects, objects of prepositions
    - Possessive case
    - Using correct case for *who, whom, whoever,* and *whomever* and in incomplete clauses beginning with *than* or *as*
    - Avoid pronoun usage problems: double subject, possessive case before a gerund
  - Adjectives:
    - Recognizing and diagramming adjectives: participles and proper adjectives and infinitives as adjectives
    - Distinguishing adjectives from nouns and pronouns
    - Recognizing and diagramming predicate adjectives
    - Using and diagramming:
      - Prepositional, participial, and infinitive phrases as adjectives
      - Adjective clauses
    - Placing and punctuating adjective modifiers
    - Using adjectives in comparison
    - Avoiding double comparison and double negatives
    - Using exact and vivid adjectives
  - Adverbs:
    - Recognizing and diagramming adverbs
    - Infinitives as adverbs
    - Distinguishing adverbs from adjectives
    - Using and diagramming:
      - Prepositional and infinitive phrases as adverbs
      - Adverb clauses
    - Correct placement of adverb modifiers
    - Distinguishing dependent clauses:
      - ➤ Advanced technique to determine dependent clauses as noun, adjective, or adverb
    - Using: adverbs in comparison, exact and vivid adverbs
  - Prepositions:
    - Recognizing prepositions, prepositional phrases, and objects of prepositions
    - Distinguishing between prepositions and adverbs
    - Using prepositions correctly

Grammar & Composition cont. p. 155

➤ **RED** *indicates first introduction of content.*

ENGLISH: *Grammar & Composition* *cont.*

Grammar *cont.*

- Conjunctions:
  - Recognizing coordinating, correlative, and subordinating conjunctions
- Interjections:
  - Definition
  - Punctuation with interjections
  - ➤ Other parts of speech used as interjections
  - Diagramming interjections

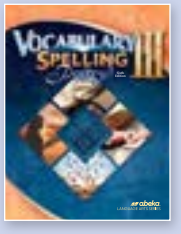
Composition

- The Writing Process: plan, write, rewrite, edit
- Paragraph
  - Introduction to the paragraph
  - Paragraph structure
  - Paragraph unity
  - Paragraph coherence
- Essay answer
- Outline
  - Using proper outline form
  - Steps to preparing an outline
  - Making an outline

➤ Critical book reviews
- ➤ Preparing written book reviews
- ➤ Preparing short form book reviews
- ➤ Giving oral book reviews

- Research paper:
  - Planning the paper: selecting subject, finding sources, writing bibliography cards, making a preliminary outline, taking notes, writing note cards, avoiding plagiarism
  - Writing the paper: introduction, body
  - Using parenthetical citations
  - Rewriting the paper: check organization, introduction, conclusion, unity, coherence, and citations
  - Editing the paper: check each paragraph, sentence, word; capitalization and punctuation
  - Preparing works cited page
  - Typing the paper
  - Documentation for research paper
- The Library: Dewey Decimal System, Library of Congress Classification System, using the catalog and reference section
- Writer's Corners
  - Crafting a thesis sentence
  - ➤ Rhetoric: persuasion by logic
  - ➤ Compare-contrast paragraph and essay
  - ➤ Literary dramatization
  - ➤ Short story
  - ➤ Literary essay

ENGLISH: *Vocabulary, Spelling, Poetry*



The lists of challenging words in *Vocabulary, Spelling, Poetry III* emphasize the application of several spelling rules, the addition of specific suffixes, and the necessity of learning frequently misspelled words. To expand students' vocabulary, words and definitions are taken from *Themes in Literature* and other ninth-grade subjects. The goals of poetry recitation and memorization are an enjoyment and appreciation of poetic beauty and excellence.

Added Enrichment

- Spelling and vocabulary:
  - Spelling lists (32) including review list at end of each 9 weeks:
    - Spelling words (560)
    - Vocabulary words (336)
    - Organized by spelling rules, suffixes and prefixes, compound words, homophones, and commonly misspelled words
    - Practice exercises (140)
  - Each vocabulary word includes:
    - Pronunciation, part of speech
    - Definition, sample sentence
    - Synonym, antonym, related form
  - Pronunciation key
  - Teacher resource: vocabulary mastery sentences
- Poetry: footnotes define and explain unfamiliar words

Evaluation

- Spelling and vocabulary quizzes:
  - Weekly (28)
  - Quarterly review (1 each 9 weeks; each counts as 2 quiz grades)
- Poetry quizzes: written (8), oral (2)

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Spelling & Vocabulary Skills Development

➤ Master spelling lists including:
- ➤ Vocabulary words and definitions
- ➤ Words that follow the spelling rules
- ➤ Sound-alike suffixes
- ➤ Commonly misspelled words
- ➤ Homonyms

- Use vocabulary words 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:
  - ➤ Synonym, antonym, and related forms 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 final consonant before adding suffix beginning with vowel

Vocabulary, Spelling, Poetry cont. p. 156

➤ **RED** *indicates first introduction of content.*

ENGLISH: *Vocabulary, Spelling, Poetry* *cont.*

Spelling & Vocabulary Skills Development *cont.*

- Change *y* to *i* when adding suffixes
- Drop the silent *e* before adding a suffix beginning with a vowel
- Learn exceptions to the spelling rules
- Creating a compound word doesn't change the spelling of the two parts
- Adding a prefix to a word doesn't change the word's spelling

Poetry Skills Development

- Memorize 10 lyrical poems
- 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

ENGLISH: *Literature*

Themes in Literature reflects these twelve themes: truth and wisdom, courage, power of words, humility, beauty, love, justice, temperance, joy and peace, perseverance, faith and hope, and time and eternity. As the student becomes familiar with classics such as *The Wind in the Willows, The Three Musketeers, Don Quixote,* and *The Adventures of Tom Sawyer,* he learns to appreciate a well-written presentation of a theme. This appreciation not only aids in increased enjoyment of literature but also provides the foundation needed to critically analyze it. This then can serve as a stimulus for corresponding creative essays.

Literary Value

- 94 authors, including well-known writers such as Mark Twain, Nathaniel Hawthorne, Helen Keller, William Shakespeare, Edgar Allan Poe, and Leo Tolstoy
- Prose selections (57), poems (49), and plays (5)
- Literary terms such as comic relief, static and dynamic characters, romanticism, realism, paradox, aside, and allegory

Added Enrichment

- Footnotes define and explain unfamiliar words
- Comprehension and discussion questions after selections
- Character-building quotations and verses
- Introductory paragraphs for interest and background information
- Author biographies and photos for important authors to know
- Suggested compositions (descriptions, summaries, poems, plays and imaginative stories)

Evaluation

- Assigned homework reading quizzes (18)
- Tests (8), 9-weeks exam (2)
- Semester exam, final exam

➤ **RED** *indicates first introduction of content.*

Reading Skills Development

- Develop skills in reading speed and comprehension
- Further develop oral reading skills
- Be able to identify significant quotations and the selections in which they are featured
- Increase vocabulary
- Recognize basic literary devices in the selections

Comprehension, Discussion, & Analysis Skills Development

- Develop proper discernment according to the truths of Scripture
- Answer factual, interpretive, and inferential comprehension and discussion questions
- Improve ability to use deductive reasoning, understand cause and effect, and draw conclusions
- Build appreciation for good literature and a love of reading
- Recognize the character-building and life-enriching themes that divide units
- Develop an understanding of people's motives and feelings while recognizing consequences of particular actions
- Learn to analyze literature while studying selections
- Comprehend and appreciate the basic elements of a work of literature
- Learn to appreciate the rhyme, rhythm, and figurative language of poetry

MATHEMATICS: *Algebra 1*

Algebra 1 provides a foundation that students need to enjoy success in future mathematics courses and includes topics such as polynomial arithmetic, factoring, equations, inequalities, graphing, statistics, rational expressions, radicals, functions, and quadratic equations. Algebra supplies the language and patterns of reasoning used in the sciences and other branches of knowledge.

Practice and review problems in each lesson give sufficient opportunity for students to develop and maintain their skills while learning to work quickly and accurately. Word problems, problem-solving strategies, and critical thinking throughout the text ensure that students can apply their mathematical skills to everyday situations and encourage students to connect varying types of mathematical knowledge. Build Up sections allow for further expansion of the concepts covered.

For this grade level, see also *Algebra 2* on p. 174.

Features

- Flexible pacing options in curriculum:
- Build Up sections (8)
- Review exercises for every section (75)
- Mid-chapter reviews (14)
- Chapter reviews (12)
- Nine-weeks reviews (2)
- Semester review
- Final review

Evaluation

- Quizzes (49)
- Tests (8)
- 9-weeks exam (2)
- Semester exam
- Final exam

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Foundations of Algebra

- Classification of numbers
  - Real numbers
  - Natural, whole, positive, negative, integer
  - Rational/irrational numbers
  - Law of trichotomy
  - Comparing numbers
  - Absolute value
- Signed numbers
  - Addition, subtraction, multiplication, division
- Algebraic terminology
  - Variables, terms, factors
  - Variable term, constant term
  - Monomial, binomial, trinomial, polynomial
  - Like terms
- Properties of real numbers
  - Commutative
  - Associative
  - Distributive
  - ➤ Identity
  - ➤ Inverse
  - Additive inverse, multiplicative inverse
  - ➤ Zero product
- Algebraic translation

➤ Writing formulas

Linear Equations in One Variable

- Properties of equality
  - Solutions
  - Addition property
  - Isolating the variable
  - Multiplication property
  - Word problems using either property
- Solving equations
  - Both properties
  - Conditional, identity, contradiction
- Clearing equations of fractions and decimals

➤ Absolute value equations

- ➤ Isolating the absolute value expression
- ➤ Solving absolute value equations
- ➤ Distance problems

➤ Literal equations

- Dependent variable (subject)
- Independent variable
- Evaluating literal equations
- ➤ Distance formula
- ➤ Simple interest
- ➤ Solving literal equations

- Word problems with multiple unknowns
- Percent equations
  - Percent, percentage, base
  - Word problems
- Equations in retail
  - Retail, markup, discount
  - Sales tax, sales tax rate
- Mixture problems
  - Making a table
  - Solving mixture word problems

Linear Equations in Two Variables

- Cartesian plane, origin, *x*-axis, *y*-axis, quadrants, point, ordered pair
- Plotting points
- Graphing a linear equation by plotting points (table)
- Intercepts
  - *x*-intercept, *y*-intercept
  - ➤ Standard form
  - ➤ Graphing by finding intercepts
  - Lines with only one intercept
- Slope
  - Negative slope, positive slope
  - Slope formula
  - Find slope from graph
  - Graph with a point and slope
- Slope-intercept form
  - Write equation from graph in slope-intercept form
  - Graph from slope-intercept form
- Arithmetic sequences
  - Sequence, common difference
  - ➤ Recursive formulas
  - Finding the next term, formula
  - ➤ General term formula
  - ➤ Check sequence by graphing

➤ Point-slope formula

- ➤ Write equation from a point and a slope
- ➤ Write equation from two given points
- ➤ Write the equation from the graph

- Parallel and perpendicular lines
  - Determine if lines are parallel, perpendicular

Algebra 1 cont. p. 158

➤ **RED** *indicates first introduction of content.*

MATHEMATICS: *Algebra 1* *cont.*

Linear Equations in Two Variables *cont.*

- Negative reciprocals
- ➤ Write equation if lines parallel and through a point
- ➤ Write equation if lines perpendicular and through a point

Linear Inequalities

- Inequality notation
  - <, >, ≤, ≥, ≠
- Graphing simple inequality on number line
  - Closed dot, open dot
- Graphing compound inequalities on number line
  - ➤ Conjunction
  - ➤ Disjunction
- Solving inequalities
  - Addition property of inequality
  - Multiplication property of inequality
- Solving compound inequalities
  - ➤ Conjunction, disjunction
  - ➤ All real numbers, no solution
- Inequality word problems
- ➤ Absolute value inequalities
  - ➤ Solve absolute value inequalities
  - ➤ Graph absolute value inequalities on a number line
- ➤ Linear inequalities in two variables
  - ➤ Solve linear inequalities in two variables
  - ➤ Graph linear inequalities in two variables

Systems of Equations

- System of linear equations
  - Consistent and inconsistent systems
  - Dependent and independent equations
  - Point of intersection
- Solve a system of linear equations:
  - Graphing
  - Substitution
  - Elimination
- ➤ Solve word problems with systems of equations
  - ➤ Systems of inequalities
  - ➤ Graph system on Cartesian plane
  - ➤ Determine overlap region
  - ➤ Systems of inequalities word problems
  - ➤ Linear programming
  - ➤ Feasible solution region

Polynomial Arithmetic

- ➤ Degree of polynomial
- Addition/subtraction of polynomials
- Multiplying monomials
  - Product rule for exponents
- Dividing monomials
  - Quotient rule for exponents
- Negative exponents
- Zero exponent rule
- Scientific notation
  - Addition/subtraction
  - Multiplication/division
- Exponent rules
  - Power raised to a power
  - Product raised to a power
  - Quotient raised to a power
  - Multiple rules
- Multiplying polynomials
  - Polynomial by monomial
  - FOIL
  - Larger polynomials
  - ➤ Squaring a binomial
  - ➤ Multiplying conjugates
- ➤ Binomial theorem
  - ➤ Pascal's triangle
  - ➤ Expanding a binomial raised to an exponent
- Dividing polynomials
  - Polynomial by a monomial
  - ➤ Polynomial by a binomial

Polynomial Factoring

- Greatest common factors
  - Common monomial
- Factoring:
  - Factor a common factor from a polynomial
  - ➤ General trinomials (a=1)
  - ➤ By grouping
  - ➤ General trinomials (a≠1)
  - ➤ Trinomials with a second variable
  - ➤ Perfect square trinomial
  - ➤ Difference of squares
  - ➤ Factoring strategies

Radical Expressions and Equations

- Square root
- Radical, radicand, index
- Perfect square, perfect cube
- Principal root
- Approximating irrational roots
- Fractional exponents
- Product rule for radicals
- Simplifying radicals
  - Rational roots
  - Irrational roots
- Adding and subtracting radicals
- ➤ Solving radical equations
- Like radicals
- ➤ Multiplying radical expressions
- ➤ Dividing radical expressions
  - ➤ Quotient rule for radicals
  - ➤ Rationalizing the denominator
  - ➤ Rationalizing two term denominators
  - ➤ Conjugate

Quadratic Equations

- Pure quadratic
- ➤ Solve quadratic equations by:
  - ➤ Extracting the root
  - ➤ Factoring
  - ➤ Completing the square
  - ➤ Quadratic formula
- Pythagorean theorem:
  - Hypotenuse, legs
- ➤ Distance formula
  - ➤ Find distance between two points from formula
- ➤ Discriminant
- Graphing parabolas
  - ➤ Vertex form
  - ➤ Axis of symmetry
  - ➤ Finding the vertex
  - ➤ Finding zeros

Algebra 1 cont. p. 159

➤ **RED** *indicates first introduction of content.*

MATHEMATICS: *Algebra 1* *cont.*

Radical Expressions and Equations

- Radicals
  - Square root, cube root
  - Perfect square, perfect cube
  - Radical, index (indices), radicand
  - ➤ Principal root
  - Approximating irrational roots
  - Expressing a radical as a fractional exponent
  - Finding rational roots using fractional exponents
- Simplifying radicals
  - Product rule for radicals
  - Rational roots
  - Irrational roots
- ➤ Exponents rules with rational exponents
- Solving radical equations
  - ➤ Extraneous solutions
- Like radicals
  - Identifying like radicals
  - Combining like radicals
- ➤ Multiplying radical expressions
  - ➤ Distributive
  - ➤ FOIL
  - ➤ Conjugates
  - ➤ Squaring a binomial
- ➤ Dividing radical expressions
  - ➤ Quotient rule for radicals
  - ➤ Rationalizing one-term denominators
  - ➤ Rationalizing two-term denominators
  - ➤ Rationalizing denominators with larger indices

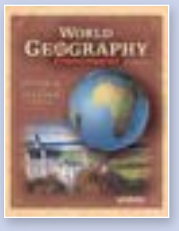
Functions

- Functions
  - ➤ Sets
  - ➤ Element
  - ➤ Set notation
  - Relation, function
  - Domain, range
  - Mapping diagram
  - Sets of ordered pairs
  - Vertical line test
  - Function notation
  - Determine if an equation is a function
  - Evaluation
- Domain of functions
  - ➤ Notation
  - ➤ Radical, reciprocal
- ➤ Graphs of parent functions
  - ➤ Polynomial, constant, linear, quadratic, cubic
  - ➤ Radical, square root, cube root
  - ➤ Absolute value, reciprocal
- Geometric sequences
  - Finding the next term, formula
  - ➤ General term formula
- ➤ Exponential functions
  - ➤ Exponential growth
  - ➤ Compound interest
- Trigonometric functions
  - Legs, opposite, adjacent, hypotenuse
  - Sine, cosine, tangent
  - ➤ Finding the missing side of a right triangle

Probability & Statistics

- Probability
  - Theoretical probability
  - Outcome, event, sample space
  - Finding simple probability
  - Properties of probability
  - Complement
  - Mutually exclusive, not mutually exclusive
- ➤ Venn diagrams
- Counting
  - Fundamental counting principle
  - Tree diagram
  - Factorial
  - Permutations
  - ➤ Combinations
- Conditional probability
  - Independent events
  - Dependent events
- Measures of Center
  - Data, statistics
  - Arithmetic mean
  - Outlier
  - Median
  - Resistance
  - Mode
- Box-and-whisker plot
  - Five-number summary
  - Minimum, Q1, median, Q3, maximum
  - ➤ Skewness
- Statistical representations
  - Bar graphs, simple, segmented, clustered
  - Circle graphs
  - Line graphs
- Frequency distributions
  - Frequency tables
  - Dot plots
  - Histograms
  - ➤ Symmetrical or asymmetrical distribution
  - Two-way frequency table
  - Joint and marginal frequencies
  - Grand total
  - Relative frequencies
  - ➤ Conditional relative frequency
- ➤ Normal distribution
  - ➤ Bell curve
  - ➤ Standard deviation
  - ➤ 68-95-99.7 rule
- Scatterplots
  - ➤ Bivariate data
  - Association, positive, negative, none
  - ➤ Causation
  - ➤ Fallacy of false cause
  - Trend lines
  - Interpolation, extrapolation
- Direct variation
  - Constant of variation
- ➤ Inverse variation

HISTORY & GEOGRAPHY: *World Geography* (one semester)



World Geography presents a physical-cultural study of the earth and mankind from a conservative, Christian perspective. Basic to this perspective is the conviction that God is the Creator of the earth and of man. By applying to the study of geography their knowledge of the Creation, the Flood, the beginning of nations at Babel, and God's dealing with mankind throughout the ages, students can better understand the physical features of the earth as well as the cultures of its people.

While most geography texts approach world geography from the globalist perspective, *World Geography in Christian Perspective* recognizes and discusses the national identities of individual countries. Building on what students have previously learned, this text presents a deeper, more thorough study of the religions, languages, customs, historic backgrounds, resources, and industries to expand the students' knowledge of each continent, region, and country presented.

Added Enrichment

- Special feature boxes (75):
  - Give in-depth look at the continent being studied
  - Present details about the vegetation and wildlife of the region
  - Show diversity of the country's culture and spotlight the history of the country
  - Look at heroes of the mission field
  - Explore the wonders of the world, concepts to consider, and strategic geography of a location
- Maps correlating to text (30)

Evaluation

- Reading quizzes (11)
- Review quizzes (22; includes labeling 12 maps)
- Map projects (8; each counts as quiz grade)
- Current events (15; each counts as quiz grade)
- Tests (4), mid-semester test (1)
- Final exam

➤ **RED** *indicates first introduction of content.*

Introduction to Geography

- ➤ The earth:
  - ➤ The importance of understanding geography in the Christian perspective
  - ➤ Location and topography
  - ➤ Weather and climate
  - ➤ Natural resources and wildlife:
    - ➤ Renewable and nonrenewable resources
- ➤ Mankind:
  - ➤ Culture and the Christian perspective
  - ➤ Cultural characteristics: religion, language, forms of government, economic systems
  - ➤ The geographer's craft: working with and understanding maps, statistics, charts, and graphs

Asia

- ➤ Middle East:
  - ➤ Fertile Crescent: Cradle of Civilization
  - ➤ Arabian Peninsula: Al-Saud family
  - ➤ Northern Plateaus and Transcaucasia
- ➤ Central Asia
- ➤ Southern Asia:
  - ➤ Indian subcontinent: Hinduism, Mount Everest, Buddhism
- ➤ Far East:
  - ➤ Chinese sphere: Communism, Great Wall of China, Great Silk Road, Taiwan
  - ➤ Northeast Asia: Korean War
  - ➤ Southeast Asia: Vietnam War, Roman Catholicism

Europe

- ➤ Mediterranean Europe: Alexander the Great, Greek Orthodoxy, Mount Vesuvius, Vatican City
- ➤ Central Europe: Gauls, Franks, Protestant Reformation, Berlin Wall
- ➤ The Low Countries: Dutch, The Hague, European Union
- ➤ The British Isles: Angles, Normans, Church of England, Scottish Highlands, the British Empire
- ➤ Scandinavia: Lutheranism, geothermal energy
- ➤ Eastern Europe: Ivan the Terrible, Bolshevik Revolution, USSR, Lech Walesa, John Huss

Africa

- ➤ Northern Africa: Sahara, Maghreb, Sahel, French Sahel, Sudan
- ➤ Tropical Africa: Western, Central, and Eastern Africa, hunger and disease
- ➤ Southern Africa: David Livingstone

Australia, the Pacific & Antarctica

- ➤ Australia: Western Plateau, Central Lowlands, Eastern Highlands, Uluru Rock, Great Barrier Reef, Abel Tasman, Captain James Cook, Matthew Flinders, Australian Gold Rush
- ➤ The Pacific: Oceania, New Zealand, Papua New Guinea, Easter Island, Challenger Deep
- ➤ Antarctica: Vinson Massif, Captain Robert F. Scott, Richard E. Byrd, Antarctic Treaty

North America

- ➤ Canada: Leif Ericson, "New France," Henry Hudson, Acadia
- ➤ United States: Native Americans, independence
- ➤ Middle America: Mexico, Central America, the West Indies

South America

- ➤ Northern Andean countries: Simón Bolívar, Auca, José de San Martín, Incas
- ➤ Brazil and the Guianas: the Amazon, Pedro Cabral, environmentalism in the rain forest
- ➤ Southern countries

Geography

- Geography projects (8) correlating to chapters in text, featuring maps, both physical and political, and review questions:
  - Introduction of geography
  - Asia
  - Europe
  - Africa
  - Australia and the Pacific
  - North America
  - South America
  - Nations of the world

Prayer Time

- Learn to pray for our nation and for government officials

SCIENCE: *Science: Matter & Energy*

Science: Matter and Energy builds a foundation for future studies in physics, chemistry, and other fields. The Christian perspective of this text naturally rejects the unproven hypothesis of evolution, recognizing special creation as the only reasonable explanation for the universe's origin. This position is presented throughout the text and highlighted in a chapter on origins, which provides evidence *against* evolution and *for* the reality of the Genesis Creation account.

Science: Matter and Energy also recognizes God's command for man to have dominion over creation. Thus the purpose of science becomes the application of scientific knowledge for mankind's benefit. From physics to chemistry, the goal is to learn how man might extend his "dominion" and make better use of creation. With man's dominion over the earth comes a responsibility to tend, manage, and conserve resources. However, the ultimate purpose of creation must not be forgotten—the earth was made for man to inhabit, and its resources were made for man to use.

Added Enrichment

- Feature boxes with extra information, articles highlighting God's design in creation
- Laboratory exercises (29)
- Critical thinking questions to encourage students to think more deeply about concepts (200)

Evaluation

- Reading quizzes (17)
- Review quizzes (34)
- Complete STEM project (counts as 6 quiz grades and 1 test grade)
- Tests (8), Quarter exams (2)
- Semester Exam, Final Exam

➤ **RED** *indicates first introduction of content.*

Introduction to Physical Science

- Scientific method:
  - 3-step process; theories, laws
  - Predictions: falsifiability, repeatability, reproducibility
  - ➤ Causality
  - ➤ Limitations of science: scope, assumptions, bias, approximations
  - ➤ Biblical reasons to study science
- Basics of matter and energy:
  - Inertia, force
  - Properties of matter:
    - ➤ Physical and chemical changes
    - Mass, weight, volume, density, state, temperature
  - ➤ Branches of physical science: physics and chemistry
- Scientific reasoning:
  - Deductive reasoning:
    - Propositions, inferences
  - Inductive reasoning:
    - Method of difference
    - ➤ Method of concomitant variation
  - Reasoning and the scientific method
  - Fallacies:
    - ➤ Invalid deductive inferences, circular reasoning
    - Post hoc fallacy
    - ➤ Equivocation, ad hominem and authority
- Engineering design:
  - Three steps: defining the problem, designing the solution, evaluating the solution
  - ➤ Safety, societal concerns, subproblems, tradeoffs

Matter and Motion

- Measuring matter:
  - ➤ Mathematics in science
  - ➤ Accuracy, precision, and significant figures
  - Scientific notation
  - Units:
    - Systems of measurement:
      - ➤ Need for systems of measurement
    - Metric system/SI:
      - ➤ Definition of units: meter, liter, kilogram, second
      - Celsius temperature scale
      - ➤ Kelvin temperature scale
  - Volume, density, and specific gravity:
    - ➤ Measuring volume by fluid displacement
- Describing motion:
  - ➤ Brief history of physics
  - ➤ Scalar and vectors, distance and displacement, simple vector addition
  - Speed
  - ➤ Velocity
  - ➤ Acceleration
- Newton's laws of motion:
  - ➤ Second and third laws
- Forces in nature:
  - ➤ Quantitative treatment of gravity
  - ➤ Circular motion: centripetal and centrifugal force
  - ➤ Pendulums
  - Friction:
    - ➤ Causes and types of friction
    - ➤ Quantitative treatment
- Work:
  - ➤ Quantitative treatment
- ➤ Power, momentum
- Simple machines:
  - ➤ Mechanical advantage, efficiency
  - Types of simple machines:
    - Lever, wheel and axle, inclined plane
    - Pulley, wedge, screw
- Fluid Mechanics:
  - ➤ Kinetic theory of matter:
    - ➤ Cohesion, kinetic theory and states of matter
    - Liquids:
      - ➤ Adhesion
      - Surface tension
      - Capillarity:
        - ➤ Meniscus

Science: Matter & Energy cont. p. 162

➤ **RED** *indicates first introduction of content.*

SCIENCE: *Science: Matter & Energy* *cont.*

Matter & Motion *cont.*

- Pressure in liquids:
  - ➤ Mathematical definition; SI units
  - ➤ Gravitational pressure, Pascal's principle
  - ➤ Hydraulic press
- Gases:
  - ➤ Gas laws: Boyle's, Charles's, Amontons's
  - Atmospheric pressure:
    - Barometers:
      - ➤ Physical principles
    - ➤ Applications: straws, breathing
- ➤ Fluid displacement:
  - ➤ Archimedes' principle, buoyancy
  - ➤ Buoyancy in liquids: floating, neutral buoyancy
  - ➤ Buoyancy in air
- ➤ Fluid dynamics
  - Drag:
    - ➤ Factors affecting, streamlining
  - Lift:
    - Airfoil
    - ➤ Cause, factors affecting, Magnus effect
  - ➤ Bernoulli effect

- Energy:
  - ➤ SI unit
  - Forms:
    - ➤ Mechanical
  - Energy changes:
    - ➤ Conservation of mass and energy
  - Kinetic energy:
    - ➤ Forms; calculation of translational kinetic energy; relationship to momentum
  - Potential energy:
    - ➤ Fundamental forces: relationship to potential energy
    - ➤ Types: gravitational and electric fields
    - ➤ Calculation of gravitational potential energy
  - Heat and thermal energy:
    - ➤ Factors affecting thermal energy
    - ➤ Thermal equilibrium
    - ➤ Heat capacity and specific heat
    - ➤ Calorimetry
    - Thermal expansion:
      - ➤ Explained
    - Heat transfer: conduction, convection, radiation:
      - ➤ Direction
      - ➤ Applications: Dewar flask, indoor heating
    - ➤ Thermodynamics: laws of thermodynamics; mechanical equivalent of heat, Carnot engine, entropy, perpetual motion
    - State changes:
      - ➤ Freezing point depression, latent heat, heat of fusion
      - ➤ Volatile, nonvolatile
      - ➤ Scientific definition of boiling; boiling point elevation, heat of vaporization
      - ➤ Vapor pressure: relationship to boiling point; critical temperature
      - ➤ Heat pumps
      - ➤ Sublimation, deposition

- Waves and energy:
  - Medium, structure of waves
  - ➤ Types of waves
  - Measurement of wave properties:
    - Wavelength, frequency
    - ➤ Period, amplitude, speed
  - ➤ Wave behavior
- Sound waves:
  - Nature and transmission of sound waves
  - History of understanding of sound waves
  - ➤ Intensity, loudness, sound intensity level
  - Pitch:
    - ➤ Audible, infrasonic, and ultrasonic sounds
    - Doppler effect
  - ➤ Quantitative treatment of speed, shock waves
  - Behavior of sound waves:
    - Reflection:
      - ➤ Echoes
      - Sonar
      - ➤ Minimizing reflection: acoustics
    - ➤ Refraction, diffraction, interference
  - ➤ Music:
    - ➤ Scientific definition
    - ➤ Interference in music:
      - ➤ Consonance, dissonance, interval
      - ➤ Beats, harmonic series, timbre
    - ➤ Resonance

Light & Color

- Nature of light:
  - History of theories of light
  - ➤ Quantitative relationship between wavelength and frequency
  - Dual nature of light
  - Color:
    - ➤ Relationship to frequency and wavelength; additive and subtractive mixing, primary colors
- Behavior of light:
  - ➤ Reflection, refraction, mirage, scintillation, rainbow formation
  - ➤ Spectroscopy, interference, diffraction, doppler effect, polarization
- Electromagnetic radiation:
  - Electromagnetic spectrum
  - ➤ Properties of radio waves, microwaves, infrared, ultraviolet, x-rays, and gamma rays
  - ➤ Relationship between frequency and energy
  - ➤ Laser light formation, properties, and uses
- Speed of light:
  - ➤ Constant
  - ➤ Brief overview of Einstein's special and general relativity

Electricity & Magnetism

- Electricity:
  - Electrostatics
    - ➤ Brief history of electrostatics
    - Electric charge and fields, law of electric charges
    - ➤ Quantitative treatment of law of electric force
    - ➤ Transferring charges:
      - ➤ Conduction, conservation, grounding
      - ➤ Induction
      - ➤ Nature of current in gases, liquids, solids
      - ➤ Electroscope

Science: Matter & Energy cont. p. 163

➤ **RED** *indicates first introduction of content.*

SCIENCE: *Science: Matter & Energy* *cont.*

Electricity & Magnetism *cont.*

- ➤ Electric current:
  - ➤ Moving charges, direct and alternating current, voltage
  - ➤ Current, power, kilowatt-hours
  - ➤ Resistance, Ohm's law:
    - ➤ Reducing resistance, resistors
  - ➤ Joule heat, superconductors
- ➤ Electric circuits:
  - ➤ Components of a circuit, closed/open circuits
  - ➤ Short circuits, fuses and breakers
  - ➤ Series and parallel circuits
- ▪ Magnets and magnetism:
  - ▪ Brief history, law of magnetic poles, magnetic fields
  - ➤ Quantitative treatment of law of magnetic force
  - ➤ Permeability
  - ➤ Electron spin, domains
  - ➤ Types of materials: diamagnetic, paramagnetic, ferromagnetic
  - ➤ Methods of magnetization
  - ▪ Electromagnets:
    - ➤ Left-hand rule, strength
  - ▪ Demagnetization
  - ➤ Magnetic deflection
  - ▪ Magnetic earth:
    - ➤ Compass, dipping needle
    - ➤ Magnetic declination, isogonic lines
    - ➤ Magnetic inclination, isoclinic lines
    - ▪ Magnetosphere
    - ➤ Celestial magnets
  - ▪ Applications of electrostatics
    - ➤ Electrostatic generators:
      - ➤ Principles of operation
    - ▪ Lightning:
      - ▪ Lightning rods
    - ➤ Leyden jar, capacitor
  - ➤ Using static electricity
- ➤ Using electricity:
  - ➤ Incandescent, fluorescent, and neon lamps
  - ➤ CFLs and LEDs
  - ➤ Solenoid, telegraph, relay, and loudspeaker
  - ➤ Basic structure and motions of electric motors
- ➤ Producing electricity:
  - ➤ Voltaic cells:
    - ➤ Batteries in series and parallel
  - ➤ Electromagnetic induction:
    - ➤ AC and DC generation
    - ➤ MHD generators, transformers
- ▪ Electronics:
  - ➤ Foundations of electronics:
    - ➤ Vacuum tubes, cathode-ray tubes, picture tubes, x-ray tubes
    - ➤ Thermionic emission, diodes, triodes
  - ▪ Semiconductor electronics:
    - ➤ How a semiconductor works, doping
    - ➤ Diodes, transistors
    - ▪ Photovoltaic cells
    - ➤ LED, semiconductor lasers
    - ➤ Integrated circuit production and application
  - ➤ Electronic computers:
    - ➤ History of the computer: ENIAC and UNIVAC I
    - ➤ Analog v. digital
    - ➤ Binary and hexadecimal number systems, ASCII logic gates
    - ➤ Hardware, software
    - ➤ Modern computers: PCs, servers, mainframes, and supercomputers
    - ➤ Robotics

Chemistry

- ▪ Foundations of chemistry:
  - ▪ Chemistry and matter:
    - ➤ Brief history
    - ▪ Definition, characteristics of matter, atomic theory
    - ▪ Elements and compounds
    - ➤ History of atomic symbols
  - ▪ Inside the atom:
    - ▪ Nucleus with protons and neutrons, atomic number, electrons:
      - ➤ Quarks, electron shells, types of ions
    - ➤ Mass number, atomic mass
    - ▪ Atomic models:
      - ➤ Quantum theory, uncertainty principle, quantum numbers, Pauli exclusion principle
  - ▪ Nuclear chemistry:
    - ➤ Nuclear decay
    - ▪ Fission and fusion
      - ➤ Details of process
  - ▪ Electrons and chemical properties:
    - ▪ Valence electron, periodic table of elements:
      - ➤ Periods and groups
    - ▪ Alkali metals, alkaline earth metals
    - ➤ Transition metals, inner transition metals
    - ➤ Groups 13–16
    - ▪ Halogens, noble gases
- ▪ Molecules and chemistry:
  - ▪ Compounds and mixtures:
    - ➤ Molecular mass, isomers
    - ➤ Pure substance, homogeneous, heterogeneous
    - ➤ Solutions, colloids
  - ▪ Chemical bonds:
    - ▪ Covalent bonds:
      - ➤ Single, double, triple; Lewis structures
      - ➤ Polar and nonpolar; electronegativity, partial charge
      - ➤ Covalent network, formula unit
    - ▪ Ionic bonds:
      - ➤ Polyatomic ions; ionic crystals
    - ➤ Metallic bonds
    - ➤ Basic chemical nomenclature; types of chemical formulas
  - ➤ Intermolecular forces:
    - ➤ Types, characteristics, and relative strength
    - ➤ Effects on physical properties: solid structure, state changes
  - ▪ Solution chemistry:
    - ➤ Formation of solutions
    - ➤ Solubility: saturated, precipitate, factors affecting
    - ➤ Solution concentration: mole, amount concentration (molarity), molality
    - ➤ Diffusion
    - ▪ Osmosis

Science: Matter & Energy cont. p. 164

➤ **RED** *indicates first introduction of content.*

SCIENCE: *Science: Matter & Energy* *cont.*

Chemistry *cont.*

- Chemical reactions:
  - ➤ Reactants, products, evidence
  - Chemical equations, conservation of mass:
    - ➤ Balancing equations
  - ➤ Types of chemical reactions
  - ➤ Chemical thermodynamics:
    - ➤ Endothermic and exothermic reactions
    - ➤ Entropy in chemical reactions
  - ➤ Chemical kinetics: activation energy, factors affecting reaction rates; catalysts
  - ➤ Chemical equilibrium: Le Châtelier's principle
  - Salts
  - ➤ Chemistry of acids and bases: dissociation, strong v. weak, neutralization, relationship of pH to concentration, buffers
  - ➤ Redox reactions and electrochemistry:
    - ➤ Basic terms
    - ➤ Types and chemistry of electrochemical cells
- ➤ Organic chemistry:
  - ➤ Uniqueness of carbon, hydrocarbon nomenclature
  - ➤ Alkanes, alkenes, alkynes
  - ➤ Aromatics, substituted hydrocarbons, soaps, and polymers
- Biochemistry:
  - Carbohydrates, lipids:
    - ➤ Disaccharides, glycogen, structure of fats, types of cholesterol
  - ➤ Chemistry and structure of proteins, types and structure of nucleic acids
- Metabolism:
  - ➤ Cellular respiration chemistry of ATP

Science vs. Evolution

- Biblical view of origins:
  - ➤ Origin of time, space, matter, and energy
- History of evolutionary philosophy:
  - Darwin, Lyell, *Origin of Species,* uniformitarianism
  - ➤ Thomas Huxley
  - ➤ Movement to the U.S.: Asa Gray, James Dana
  - Theistic evolution
  - ➤ Neo-Darwinism defined; evolution and secular humanism
  - ➤ Compromise views of origins
- Evolutionary views of origins:
  - Abiogenesis and big bang theory
  - ➤ Stanley Miller's experiment
  - ➤ "Evidence" of the big bang theory
- Modern opposition to evolution:
  - Rise of Creation science
  - ➤ Notable figures and organizations
- Notable scientists who believed in Creation:
  - Isaac Newton
  - ➤ William Gilbert, Samuel Morse
- ➤ Evidences against evolution from chemistry and physics:
  - Impossibility of chemical evolution
  - ➤ DNA complexity, interpretation of DNA
  - Radiometric dating
  - ➤ Inverse square laws, second law of thermodynamics, decay of earth's magnetic field
  - ➤ Complexity of the human brain; bat echolocation; electric fish

SCIENCE: *Health* (one semester)

Health in Christian Perspective will enable students to gain a deeper knowledge of the anatomy and physiology of the human body. They will be encouraged to reach out to others and to live a happy, healthy life as they maintain a consistent walk with the Lord. They will learn how to maintain their physical health through good nutrition and fitness with an emphasis on cardio-respiratory and musculoskeletal health.

A study of the nervous system in light of biblical principles encourages students to maintain good mental and emotional health. Practical aspects of safety and first aid are included in the middle of the course. Students will also learn how the immune system works to prevent disease, how to avoid drug abuse, and how to pursue a right relationship with God and others.

Added Enrichment

- Sidebars containing extra health facts, checklist for personal health, and applications of health information (185)
- Feature boxes including biblical discernment, medical careers, and articles on health-related issues (20)
- Atlas of human anatomy

Evaluation

- Reading quizzes (12)
- Review quizzes (16)
- Tests (4)
- 9-weeks exam, final exam

➤ **RED** *indicates first introduction of content.*

Developing a Healthy Body

- Growth and development:
  - Fetus development from conception to birth
  - Infancy
  - ➤ Adolescent development
- Endocrinology:
  - Endocrine glands and hormones:
    - ➤ Somatotropin, antidiuretic hormone, aldosterone, estrogens, testosterone, melatonin
  - Regulating metabolism, physical changes, and sleep

Health cont. p. 165

➤ **RED** *indicates first introduction of content.*

SCIENCE: *Health* *cont.*

Developing a Healthy Body *cont.*

- Nutritional needs:
  - Gastroenterology: digestion; anatomy and physiology of organs in the digestive system
    - ➤ Gingiva, root canal, uvula, chyme
  - Macronutrients:
    - Carbohydrates, dietary fiber, proteins, fats and oils:
      - ➤ Essential amino acids; triglycerides
  - Micronutrients: vitamins, minerals, electrolytes, water
- Healthful food choices:
  - Energy from food:
    - ➤ Kilocalorie/calorie, basal metabolism, food guide pyramid
  - Nutritional balance: acceptable weight range, weight control

Maintaining Personal Health

- Cardiorespiratory fitness:
  - Cardiology: anatomy and physiology of organs in the cardiovascular system:
    - ➤ Septum
    - Blood pressure and heart rate:
      - ➤ Radial and carotid pulse, stroke volume
  - Pneumology: anatomy and physiology of organs in respiratory system:
    - ➤ Lung capacity
- Musculoskeletal health:
  - Osteology: anatomy and physiology of skeletal system:
    - ➤ Divisions of the backbone
    - ➤ Arm and leg bones, periosteum
    - ➤ Compact and spongy bones
    - ➤ Gliding, saddle, and ellipsoid joints
  - Myology: anatomy and physiology of muscular system:
    - ➤ Fast-twitch and slow-twitch muscle fibers
    - ➤ Flexors and extensors
    - Review 7 muscles and groups
    - ➤ Learn 10 muscles and groups
- Exercise and fitness:
  - Aerobic and anaerobic exercise
  - ➤ Strength training
  - Assessing physical fitness:
    - ➤ Cardiorespiratory endurance
    - Muscular strength and endurance
    - Measuring flexibility, body fat content
  - Total workout: warm-up, work out (training heart rate), cool down, overload
  - ➤ Energy for exercise:
    - ➤ Aerobic and anaerobic processes
    - ➤ Energy efficiency, sports nutrition, maintaining hydration
  - Benefits of exercise
- Personal hygiene:
  - Your protective covering: skin, below the dermis, throughout the dermis, above the dermis
  - Good grooming:
    - Basic skin care, clear complexion, hair that flatters
    - Healthy nails, healthy smile
  - UV protection and skin cancer prevention:
    - ➤ Types of skin cancer
  - ➤ Consumer awareness

Keeping a Sound Mind

- Nervous system:
  - Neurology: anatomy and physiology of organs in the nervous system:
    - ➤ Neuron anatomy and types
    - Central nervous system, peripheral nervous system
    - ➤ Limbic system, somatic and autonomic nervous system
  - Sensory receptors:
    - ➤ Senses of the skin: pain, mechanoreceptors, and thermoreceptors
    - ➤ Senses of smell and taste: chemoreceptors
  - Sense of sight:
    - Anatomy of the eye, vision (rod and cone cells)
    - ➤ Defective vision
  - Sense of hearing:
    - Anatomy of the ear
    - Hearing damage:
      - ➤ Decibels, sensorineural (nerve) deafness
  - Brain and the mind
- ➤ Recognizing mental disorders:
  - ➤ Kinds of mental disorders: eating, anxiety, depression
- Good mental health:
  - ➤ Managing stress: kinds of stress, stress and body systems
  - Mental and emotional well-being:
    - Benefits of exercise, sufficient sleep, thinking right thoughts, controlling emotions, exercising your brain
- ➤ Practicing biblical discernment: biblical discernment and suicide

Practicing Personal Safety

- Household hazards:
  - Electrocution, falls, firearms
  - Fires and burns: fire and burn prevention, fire precautions
  - Poisoning:
    - ➤ Ingested, inhaled, and absorbed toxins
  - Reducing risks:
    - Self protection
    - ➤ Protection of others, protection at work
- Recreational safeguards:
  - Sport safety:
    - ➤ Dehydration
    - Heat exhaustion, heat stroke
  - Water sports:
    - ➤ Swimming safety
    - ➤ Boating basics PWCs (personal watercraft)
    - Water rescue techniques
  - ➤ Skating
  - Wilderness recreation:
    - Poisonous plants and animals: dermatitis, poisonous snakes
    - ➤ Wilderness supplies and precautions
    - ➤ Hunting
  - Winter sports:
    - Frostbite
    - ➤ Specific safety tips
  - ➤ Recreational vehicles: snowmobiles, ATVs (all-terrain vehicles)
- Safety on the road:
  - Bicycle basics
  - ➤ Mopeds and motorcycles: determining risks, developing skills

Health cont. p. 166

➤ **RED** *indicates first introduction of content.*

SCIENCE: *Health* *cont.*

Practicing Personal Safety *cont.*

- ➤ Motor vehicle safety:
  - ➤ Traffic accidents
  - ➤ The leading cause of accidental deaths in the United States
  - ➤ Safe actions, courteous driving
  - ➤ Alcohol and traffic safety
- Environmental safety:
  - Natural disasters:
    - ➤ Blizzards, floods
    - Earthquakes, hurricanes, lightning, tornadoes
  - Environmental hazards:
    - Man's responsibility, pollution problems, radical environmentalism
    - ➤ Checks and balances, assessing risks, proper balance

Administering First Aid

- Emergency preparedness:
  - Knowing priorities:
    - Check, call, care
    - Check airway, breathing, and severe bleeding
    - ➤ Vital signs
  - Respiratory emergencies:
    - Head-tilt and chin-lift position
    - ➤ Rescue breathing
    - Choking:
      - ➤ Unconscious victim, self, infant
    - ➤ Drowning
  - Circulatory emergencies:
    - ➤ CPR (cardiopulmonary resuscitation) instructions
    - Severe bleeding-care instructions
    - ➤ Shock-care instructions
  - ➤ Recovery position
- First aid procedures:
  - Care instructions for burns:
    - First-, second-, and third-degree burns
    - Chemical burns (eye injury care)
  - Care instructions for:
    - ➤ Convulsions, fainting
    - Dislocations, electric shock
    - Fractures: closed and open
    - Frostbite
    - Hyperthermia: heat cramps, heat exhaustion, heat stroke
    - ➤ Hyperventilation
    - Hypothermia, nosebleeds
    - Poisoning:
      - Ingested toxins
      - ➤ Inhaled and absorbed toxins
    - Snakebites: pit vipers (hemolitic), coral snake (neurotoxin)
    - Stings and bites:
      - ➤ Animal bites (rabies and tetanus)
      - Insect stings, tick bites (lyme disease)
    - Strains and sprains:
      - Strain: muscle or tendon stretch or tear
      - Sprain: ligament stretch or tear
    - Wounds:
      - ➤ Closed wound or contusion, internal bleeding, open wound
      - Incisions, abrasions
      - ➤ Lacerations, punctures

Preventing Diseases

- Immunology:
  - White blood cells: leukocytes (phagocytes and lymphocytes)
  - Antibodies
  - Lymphatic system: tissue fluid, lymph vessels, lymph nodes
  - Other body defenses:
    - ➤ Bone marrow, brain, colon, lacrimal glands, liver, lungs
    - Mucous membranes, skin, stomach, tonsils and adenoids
- Infectious diseases and defenses:
  - Classification of diseases:
    - Infectious diseases, noninfectious diseases
    - ➤ Acute, chronic
    - Communicable and noncommunicable
  - Causes of infectious diseases:
    - Bacteria, viruses
    - ➤ Protozoa, fungi, parasitic worms
  - Spread of infectious diseases:
    - Airborne pathogens, contaminated surfaces, direct contact
    - Infected animals, contaminated food or water
  - Immunity against disease:
    - ➤ Gaining immunity (activated lymphocytes and antibodies)
    - ➤ Acquired, inborn, and species immunity
  - Medical defenses: vaccines, drugs, and antibiotics
- Noninfectious diseases and disabilities:
  - Leading causes of death (listed in a chart)
  - Degenerative diseases:
    - Osteoporosis
    - ➤ Dementia, Parkinson's disease
  - ➤ Biblical discernment and euthanasia
  - Genetic and congenital diseases
  - Hormonal diseases: diabetes mellitus
  - ➤ Biblical discernment and abortion
  - Immunological diseases:
    - Allergies
    - ➤ Asthma, autoimmune diseases:
      - ➤ Selected autoimmune diseases: Grave's, lupus, multiple sclerosis, psoriasis, rheumatoid arthritis
  - ➤ Nutritional diseases
  - ➤ Psychosomatic diseases
  - ➤ Diseases caused by harmful substances
  - Cancer:
    - Causes
    - ➤ Types, development
    - Treatment
  - ➤ Disabilities: impaired mobility, hearing, speech, sight
- Systemic diseases and disorders:
  - Cardiovascular diseases—leading cause of death:
    - ➤ Hypertension, arteriosclerosis
    - Atherosclerosis, coronary artery disease
    - ➤ Angina
    - Heart attack, arrhythmia
    - ➤ Ventricular fibrillation, congestive heart failure, stroke, aneurysm
  - Dermatopathy:
    - Acne
    - ➤ Athlete's foot, dandruff, warts
  - ➤ Endocrinopathy: ketoacidosis, hyperglycemia, hypoglycemia

Health cont. p. 167

➤ **RED** *indicates first introduction of content.*

SCIENCE: *Health* *cont.*

Preventing Diseases *cont.*

- Gastrointestinal diseases and disorders:
  - Dental caries, periodontitis
  - ➤ Gingivitis, appendicitis
  - ➤ Colorectal cancer
  - Dysentery
  - ➤ Food-borne illnesses: salmonella, *E. coli,* and staphylococcus poisoning; botulism
  - Peptic ulcer
- ➤ Hemopathy: anemia
- ➤ Hemophilia
- ➤ Hepatopathy: hepatitis, viral hepatitis
- Immune-deficiency and lymphatic diseases:
  - AIDS, HIV
  - ➤ Mononucleosis
- ➤ Musculoskeletal diseases: arthritis, osteoarthritis, rheumatoid arthritis, bursitis, back pain
- Nervous system diseases and disorders:
  - Concussion
  - ➤ Amnesia, coma, meningitis, encephalitis, shingles, cerebral palsy, epilepsy
- Pneumopathy:
  - Common cold
  - ➤ Bronchitis, influenza, pneumonia, tuberculosis
- ➤ Uropathy: kidney failure, kidney stones
- ➤ Biblical discernment and organ donation
- Personal health care:
  - ➤ Medical examination: medical history, general health, physical exam
  - Disease prevention

Avoiding Drug Abuse

- Drug use and medicines:
  - Drugs as medicine: drug, medicine, OTC, prescription, antibiotics
  - Pain relievers:
    - Anesthetics
    - Analgesics:
      - ➤ Aspirin, acetaminophen, ibuprofen
  - ➤ Other common medicines: antihistimines
  - Use medicines responsibly
- Drug abuse and the body systems:
  - Effects of drug use:
    - ➤ Psychoactive drugs, physical vs. psychological dependence
    - Addiction, tolerance
  - Narcotics:
    - Opiates:
      - ➤ Morphine, codeine
      - Heroin
    - ➤ Opioids
  - Hallucinogens:
    - ➤ Psychedelic drugs, LSD, flashback, PCP, MDMA, ketamine
  - Stimulants:
    - Cocaine, crack
    - ➤ Amphetamines
    - Methamphetamine
  - Depressants:
    - ➤ Barbiturates, benzodiazepines (valium, rohypnol)
  - Marijuana and related drugs:
    - ➤ Cannabinoids
  - Inhalants
  - ➤ Steroids
  - ➤ Long-term effects of drug abuse
  - Preventing drug abuse
- Alcohol and health:
  - Alcohol is the most widely abused drug in the world
  - Forms of alcohol
  - Immediate effects:
    - On the brain, liver, and other organs
    - Depressant
    - ➤ Alcohol poisoning
  - Long-term effects:
    - Alcoholism
    - ➤ Delirium tremens
    - Liver and cardiovascular disease
    - Gastrointestinal disorders
  - Alcohol and society:
    - ➤ Crimes
    - Accidents
    - ➤ Fetal alcohol syndrome
  - ➤ Why people drink
- Tobacco and health:
  - Tobacco as a drug: nicotine
  - Effects of smoking:
    - Heart disease, respiratory problems, emphysema, cancer risks
  - Effects on nonsmokers
  - Smokeless tobacco
  - ➤ Biblical discernment and substance abuse

Pursuing Right Relationships

- Putting God first:
  - ➤ Becoming spiritually fit: continuous workout, resting in Him
  - Maintaining spiritual fitness:
    - Essential nutrition, power through prayer
    - ➤ Exercise forgiveness
- Thinking of others:
  - ➤ Maturing relationships: responsible behavior, effective communication, wholesome associations
  - ➤ Family interactions: parent-child relationships, sibling relationships
  - Close friendships: friendship qualities, influence from peers

BIBLE: *Kings of Israel*

Kings of Israel charts the course of Israel's history. First semester covers the lives of Saul, David, and Solomon—the kings of the United Kingdom of Israel—up to the division of the kingdom between Israel and Judah. Second semester covers the kings of Israel and Judah, the Assyrian and Babylonian captivities, and the return of the Jewish people to Jerusalem.

Information is given in an easy-to-follow outline format. Numerous applications are given for nearly every outline to help students understand how these portions of Scripture relate to the temptations and problems they face every day.

Evaluation

- Verses:
  - Verse quizzes (28)
  - 9-weeks verses exams (2)
  - Semester verses exam (1)
  - Final verses exam (1)
- Content:
  - Quizzes (10)
  - Quizzes on the books of the Bible (2)
  - 9-weeks exams (2)
  - Semester exam (1)
  - Final exam (1)

➤ **RED** *indicates first introduction of content.*

Lessons *137*

- Samuel: God directs Samuel to choose a king for Israel
- Saul:
  - Saul is chosen to be king
  - Saul disobeys God
- David:
  - Chosen to be king
  - His faith in God when fighting Goliath
  - Flees from Saul
  - Davidic kingdom established
  - Sin committed with Bathsheba and repentance
  - Importance of proper friendships: David and Jonathan
  - Absalom's rebellion and defeat
  - Sin and consequences in taking census
  - Character of David
- ➤ Psalms:
  - ➤ Decision and destiny
  - ➤ Praising the Lord
- Solomon:
  - Asks for God's wisdom
  - Monarchy of Israel with Solomon as king
  - ➤ Christian and civil authority
  - ➤ Building and dedication of the Temple
  - ➤ Sunset of Israel's Golden Age
- ➤ Proverbs: selected topics such as truths about your heart, communicating with others, work, honesty, correction, money, and relationships
- ➤ The Divided Kingdom: contrasts in North and South
- Elijah:
  - Elijah proclaims drought
  - Mount Carmel contest with Ahab and false prophets
  - Discouraged by Jezebel's letter
  - ➤ Jehoshaphat and Ahab demonstrate need for Christian separation
  - Elijah enters Heaven
- Elisha: his calling and miracles
- ➤ Countdown to captivity
- ➤ Hezekiah: prayer and test
- ➤ Isaiah: prophet of God
- ➤ Josiah: last good king
- ➤ Last kings of Judah witness destruction of Jerusalem
- Daniel:
  - Nebuchadnezzar's dream of world empires
  - Nebuchadnezzar exalted and humbled
  - Belshazzar sees handwriting on wall
- Esther boldly stands before the king
- Ezra: children of Israel return to rebuild the Temple
- Nehemiah shows leadership skills in building wall and working with people

Music *91 songs*

- Choruses, hymns of the faith, holiday songs

Memory Work

- Passages (28 containing 97 verses)
- Books of the Bible

Prayer Time

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