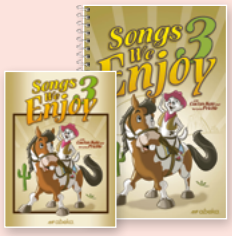
Music



Songs We Enjoy 3 brings together many of the traditional, patriotic, holiday, and fun songs that American children have enjoyed singing for generations. Today's children still love these songs. The sing-along CD makes song time easy for the teacher and delightful for the students.

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

Skills Development *64 songs*

- ➤ Explain meaning of 22 unfamiliar phrases or words in lyrics
- ➤ Sing rounds in two or more parts
- Follow a song leader while singing together with class or CD
- Benefit from fun activities that spark and keep interest:
  - Echo parts, whistling, using props
  - ➤ Group parts
- ➤ Learn patriotism through patriotic music and folk songs
- ➤ Learn to keep time musically with rhythm instruments
- Discover historical information contributing to song's origin
- Reinforce Bible application

Variety of Songs to Memorize

- Folk, fun songs, spirituals and gospels, patriotic, holiday, Americana

Arts & Crafts

Adding to the knowledge of the color wheel, *Art Projects 3* encourages students to express their own creativity and find beauty in the world around them. Students will enjoy working with new media such as clay, charcoal, and watercolors while continuing to learn foundational art and design concepts and techniques. Includes glossary of art terminology.

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

Concept & Technique Development

- Media & Art Types:
  - Crayon, colored pencils, paper, pencil, glitter, painting, glow-in-the-dark painting, fibers and mixed media, chalk, marker, tissue paper, scissor-edge cutting, charcoal, watercolors, clay/ceramics, metallic paints, kneaded eraser, sequins, needlework/embroidery, metal bending
  - Illustrating: color wheel, story, song, Scripture, poem
  - Cutting from template, cutting out centers, creative cutting, poking, fringe cutting, cutting strips, layered cutting
  - Tracing, drawing, drawing step-by-step, geometric shapes, organic shapes, outlining, overlay, directional coloring, stippling, shading, folding, detailing, drawing/painting animated expressions, steps of artistic process, painting from observing illustration, texturizing, hatching, cross-hatching, blotting, dabbing/sponging, drawing using symmetry, kneading, embossing, rounding, imprinting, sponging, lettering, downstroke, double line, serif, script, swash, flourish, wash, wet layering, graduated wash, wet-on-wet, dry-on-dry, scumbling, sponge swiping, masking with tape/rubber cement, scoring, score and slip, salt resist, poster/mural, pop-up, hinge, V fold, box fold, sculpting (rolling, pinching, flattening, poking, scraping, etching), hard/soft edge watercolor painting, brush control, paint by number, quilling, scroll shapes (round, v, s), border shapes (teardrop, petal)
  - ➤ Op Art, landscape, snowscape, still life, mosaic, collage, seascape, indenting, stitchery, weaving, salt painting, creating musical instrument
  - Using loose grip, swab/finger rubbing/smudging; using side of charcoal to shade, side and pressure strokes, lengthwise stroke, squiggles, highlighting
  - Curved, swirled, looped, broken (dashed, dotted), lines, drooping lines, contour lines, scalloped lines
- Color:
  - 12-color color wheel; primary, secondary, intermediate colors, hue, tones
  - Primary, secondary, intermediate color mixing, visual color mixing, using natural colors, blending, color matching, energized colors, pink, transparent, metallic colors, color intensity and muting, gradient, winter colors, using white, pastels, spring colors, muddy colors, creating off-white colors
  - Color family, tints, shades
  - Complementary colors, analogous colors, neutral colors, warm and cool colors, color temperature, color study
  - Color scheme: fall, Christmas, patriotic, sunset, masculine, feminine, Valentine colors, Easter colors, Jewish festival colors,
  - Varying pressure for light/dark colors
  - Overlay, blending, swab blending, swab rubbing
  - Observing color moods: exciting, peaceful, playful, serious, hopeful; observing colors in nature
  - Moods: happy, joyful, sad, peaceful, fearful
  - Color symbolism
- Form, Value, Contrast:
  - Shading, tint, shadow, value, varying pressure for value
  - ➤ Sphere forming, 3D texture
  - Cylinder, cone, vary pressure for gradual light/dark shading
  - Tint, making tints with watercolors
  - ➤ 3D Concept, 3D Forming
  - Value, contrast, shading, fade, cast shadow
  - Blending, highlighting

Art & Crafts *cont.*

Concept & Technique Development *cont.*

- Making a rectangular bag
- ➤ Graduated, gradient, aerial perspective, depth, triarama
- Varied box-forming, contrast in pattern, form, contours, horn forming
- ➤ Hard edge and soft edge, scroll, egg shape
- Movable parts, paper sculpture, 3D crafting, structures, kirigami, template

- Design and Organization:
  - ➤ Color-determining process: block, observe; color-matching process: experiment, compare, determine, correct
  - ➤ Slipknot process, watercolor process
  - Outlining, needlework stitches (running, back, cross-, overcast, feather, French knot), initials, making-needle process, template
  - Orientation: horizontal, vertical, diagonal, radial (pattern), spiral, symmetry, pattern, using line shapes (curved, jagged, straight, looping, zig-zag)
  - Pattern (calico, gingham)
  - ➤ Imprint
  - Line type (dashed, dotted), visual texture (wiggly, jagged, zig-zag lines for wood grain), short curved for rope; brand
  - ➤ One-point perspective (horizon line, vanishing point), lettering (manuscript, stroke, block letter, block-lettering process), trace, space, paper stretching
  - ➤ Braiding
  - Stroke, downstroke, weighted, double line, lettering process, lettering styles, serif, script, flourish, swash, sponging layers
  - Symmetry, balance, proportion, observation, texture (hair, clothing), detailing
  - ➤ Glue spreading, scissor-edge cutting
  - Subject
  - ➤ Art Process: quick inspiration, careful planning, quick analysis & correction, careful execution: brainstorm; thumbnail; value sketch; color study; texture (foliage)
  - ➤ Transparent, plaid, opaque, pattern (geometric—striped, shadow stripe, plaid, gingham, polka dot, chevron, check/checkered, argyle; organic—flower, scroll, leaf, splat, calico, paisley)
  - Odd-numbered items, unity, grid, poster, mural
  - Composition, foreground
  - Line types (scallop)
  - ➤ Horizon line, perspective, ellipse
  - Stylus, forming, indent
  - ➤ Coloring over cardboard for horn texture
  - ➤ Paint-by-number process, simplifying, brush control
  - ➤ Coil (coil tightening, coil loosening)
  - Texture: wispy lines for fur, zig-zag lines for grass, curved/wiggly lines for bark and wood, cross-hatching for fur; texture observation of variety: yarn, paper, button, organic, soft and fuzzy, woodgrain; crumpling for wrinkled texture, pulled cotton for wool, dabbing/sponging for spots, toothbrush spatter, fling spatter
- Communication and Creativity:
  - Making choices, using resources
  - Communicating through order
  - ➤ Creating movement, creating expression
  - Creating animated expressions based on evaluation
  - Communicating through printing and form
  - ➤ Creating brand
  - Mood, self-expression
  - Creating pattern
  - ➤ Emphasis, practice and create lettering style
  - Communicating through sponging
  - Creating an original likeness, autograph
  - Choosing subject, communicating through visual textures
  - Collaborative
  - Solving problems
  - Communicating through creative sculpting techniques
  - Unique patterns and colors
  - Communicating through simplifying
  - ➤ Creating maze
- Appreciation & Evaluation:
  - Observing color
  - Appreciation: God's Earth
  - ➤ Observing quality craftmanship
  - Studying animated expressions: thrilled, worried, mad, dizzy, afraid
  - Calico, gingham
  - Observing nature, evaluating quality and worth, give as gift
  - ➤ Culture of American West, display
  - ➤ Kumihimo, Japanese culture, lettering examples
  - Self-observation from life, comparing family features
  - Problem solving, analyze, critique, emotion (joy, awe, excitement), exhibit, collaborate
  - ➤ Jessie Willcox Smith (*Little Bo Peep, Little Women*) Brian Jekel (*Crucifixion, Resurrection, Christian Soldier*)
  - ➤ Jewish culture, colors, and pattern
  - ➤ Predicting color combinations

Language Arts: Reading

An outstanding variety of children's literature from famous classics to modern selections encourages young readers to come back for more. These beautiful new readers with colorful art and designs will entertain students while deepening their understanding of the written word. With an emphasis on literary elements and concepts, students will grow in their ability to think critically while establishing and developing the foundation for a biblical worldview.

Fourth graders will grow in their ability to read for learning and gain independence through the use of character analysis, setting and plot charting, text structure analysis, and many other activities including creative writing.

Literary Value

- 86 authors, including such well-known writers as Lewis Carroll, Robert Louis Stevenson, Robert Lawson, Robert Frost, Aileen Fisher, Arleta Richardson, A. A. Milne, Hans Christian Anderson, E. B. White, Laura Ingalls Wilder
- Selections and adaptations from children's literature such as "A Narrow Escape" from *Stuart Little*, "Down the Rabbit Hole" from *Alice's Adventures in Wonderland*, "Keeping House" from *On the Banks of Plum Creek*, "When God Knew Best" from *Grandma's Attic*, "Wilbur Meets Charlotte" from *Charlotte's Web*, "Captain Cook" from *Mr. Popper's Penguins*
- Character-building themes such as contentment, optimism, generosity, forgiveness, honesty, kindness, perseverance and service

Materials

- Readers (6) compilations containing stories (97), poems (57), plays (3), recipes (3), crafts (2), science demonstrations (2)
- Novels (Christian historical fiction and Christian classic allegory)
- *Reading Comprehension 4* Skill Sheets
- *Adventures in Other Lands* Speed and Comprehension Reader
- Bible for Scripture reading

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

Reading Skills Development

- Read orally and silently with comprehension
- Strive for increasing: accuracy, fluency, phrasing, alertness to punctuation, expression, appropriate speed, comprehension, volume, poise
- Vocabulary Development through words and definitions
- Development of understanding literary types, terms, and concepts
- Exercise critical thinking through inference, evaluation, analyzation, and personal application—using fact and reasoning in the development of a biblical worldview

Literary Concept Development

- Understanding and applying literary concepts: title, author, character, main character, plot, setting, moral, main idea, stanza, summary, symbolism, climax, autobiography, biography, fiction, nonfiction, act, scene, simile
- Summarizing plot
- Comparing works of the same author
- Comparing similar works from different authors
- Predicting endings
- Discerning fact from opinion
- Introducing and utilizing literary concepts—dialogue, excerpt, inference, point of view, idiom, narrator, rhyme scheme, meter, repetition, dialect, metaphor, drama, cast, and stage directions
- Recognizing and analyzing text structures—narrative, informative, sequential, descriptive, problem/solution, compare/contrast, cause/effect
- Determining point of view—first and third person
- Analyzing characters and setting
- Recognizing genres: realistic fiction, historical fiction, fantasy, biographical stories including autobiographies, folktales, fables, legends, fairy tales, parables, Scripture
- Distinguishing fantasy from reality
- Charting information: word webs, Venn diagrams, compare/contrast, predict possible outcomes
- ➤ Creative collaboration activities for developing critical thinking
- Analyzing illustration and photo
- Interpreting figurative language
- Prompts for creative writing
- ➤ Understanding acts/scenes within a play
- Comparing biography/autobiography
- ➤ Analyzing, making inferences and drawing conclusions from descriptive and persuasive text
- ➤ Providing evidence from text to support analysis
- Discerning author's intent
- ➤ Writing narrative, descriptive, compare/contrast, problem/solution, cause/effect informative selections
- ➤ Recognizing themes in literature
- ➤ Recognizing and implementing good creative writing techniques

Readers

- *Once Upon a Story*—14 stories, 12 poems, 1 hymn, with a fanciful theme including BUILD ON IT concepts, reviewing title, author, main character, setting, plot, moral, main idea, fiction/nonfiction, simile, symbolism, summary, introducing literary concept—narrative text structure, point of view; Think About It, What DO YOU Think?, Think It Through—factual, inferential, and interpretive comprehension/discussion questions; What Can YOU Do? activities; What Would YOU Do? activities including creative ideas for helping others; author/background information prompts, as well as literary type prompts for explanation of terms; story and Christian character themes; silent reading selections; illustration and photo observations; additional enrichment activities include predicting an ending, audio/video demonstrations, creative drawing and writing, charting comparisons, Venn diagrams, charting cause/effect, visual aids, creative collaboration; biblical worldview discussions noted by icons, critical thinking discussions and activities noted by icon, challenging vocabulary and definitions listed at bottom pages of stories; BUILD ON IT literary concept activities: drawing the setting, creative collaboration, writing from different points of view, identifying narrative text structures; graphic organizers challenging character analysis, comparing and contrasting with Venn Diagrams
- *In His Hands*—20 stories, 9 poems, 2 crafts, 1 hymn, Scripture reading, 1 recipe, missionary moment highlights in a variety of styles and literature types with an around the world theme including descriptive/persuasive selections and Scripture selections; BUILD ON IT concepts reviewing skills in recognizing problem solution and cause/

Reading cont.

effect in narrative text; challenging vocabulary and definitions listed at bottom pages of stories; introducing literary concept—Descriptive and Sequential text structure; Think About It, What DO YOU Think?, Think It Through—factual, inferential, and interpretive comprehension/discussion questions; What Can YOU Do? activities, What Would YOU Do? activities including creative ideas for helping others; author and historical background information prompts, as well as literary type prompts for explanation of terms; story and Christian character themes; silent reading selections; interesting informational facts; illustration and photo observations; A World of Words introduces international words/phrases and their meanings with free audio download; additional enrichment activities include bulletin board project, game, creative writing; biblical worldview discussions noted by icons, critical thinking discussions and activities noted by icon; BUILD ON IT literary concept activities: writing a narrative, writing a descriptive paragraph; creative collaboration, character analysis, graphic organizers including charting plot and climax, comparing and contrasting with Venn Diagrams

- *Song of the Brook*—a 15-chapter Christian historical fiction novel, the sequel to *Secret in the Maple Tree*; reconnect with Hilda and her family as they adjust to life in their new home in Washington state; with the overall theme, "The Best Is Yet to Come"; includes advanced vocabulary words and definitions for vocabulary enrichment; reviews literary concepts—main character, plot, moral, summary, setting, title, author; review activities for character analysis and chapter summarization skills in preparation for book report; Bible application, biblical worldview application and critical thinking discussions; story and Christian character themes; chapter reviews including factual inferential and interpretive comprehension/discussion questions; additional enrichment activities; graphic organizers including cause/effect charting, character descriptions, predict an ending
- *Road Trip East*—21 stories, 11 poems, 1 recipe, 1 hymn, 1 newspaper article, 2 author highlight pages, 1 Scripture reading, highlighting a variety of styles and literature types with a road trip theme traveling the eastern United States featuring a fictional family named the Jacksons; challenging vocabulary and definitions listed in stories at bottom of pages, BUILD ON IT concepts reviewing descriptive/sequential text structure, biography, introducing poetry elements, repetition, rhyme scheme, meter, and compare/contrast text structure; Think About It, What DO YOU Think?, Think It Through—factual, inferential, and interpretive comprehension/discussion questions; What Can YOU Do? activities, What Would YOU Do? activities including creative ideas for helping others; author and historical background information prompts, as well as literary type prompts for explanation of terms; introducing The Author's Pen to highlight creative writing techniques; story and Christian character themes; silent reading selections; interesting informational facts; illustration and photo observations; Track My Trip for added geographical information; additional enrichment activities include map, game, creative writing, biblical worldview discussions noted by icons, critical thinking discussions and activities noted by icon; BUILD ON IT literary concept activities: writing a rhyming poem, writing a compare/contrast informative story, creative collaboration, graphic organizers including charting cause/effect and problem/solution, comparing and contrasting topics from informative texts, character analysis
- *Fables and Folktales*—17 stories, 12 poems, 2 plays, 2 Scripture readings, highlighting a variety of folk literature including fairy tales, fables, legends retold through poetry and riddle; challenging vocabulary and definitions listed in stories at bottom of pages, as well as expanding knowledge of literary concepts including imagery, idiom, fable, folktale, parable, legend; BUILD ON IT concepts reviewing act and scene, introducing metaphor, meter, cast, and stage directions; Think About It, What DO YOU Think?, Think It Through—factual, inferential, and interpretive comprehension/discussion questions; What Can YOU Do? activities, What Would YOU Do? activities; The Author's Pen to highlight creative writing techniques; story and Christian character themes; silent reading selections; interesting informational facts; illustration and photo observations; additional enrichment activities; biblical worldview discussions noted by icons, critical thinking discussions and activities noted by icon; BUILD ON IT literary concepts activities; story map, identifying/explaining metaphors, create your own cast, creative writing using imagery, Venn diagram
- *Pilgrim's Progress: Christiana's Journey*—a 14-chapter simplified allegory, the sequel to *Pilgrim's Progress: Christian's Journey*; follows Christiana, Christian's wife as she journeys with her family and friend to the Celestial City; includes advanced vocabulary words and definitions for vocabulary enrichment, map, the Pilgrim's Journey, Background Information from *Christian's Journey*, book report preparation activities; Bible application; story and Christian character themes; factual, inferential, and interpretive comprehension/discussion questions; additional enrichment activities; Bible application, biblical worldview application and critical thinking discussions; Journal to record locations of events, characters, and lessons Christiana learned with correlating scriptural evidence
- *Gifts and Gadgets*—17 stories, 12 poems, 2 newspaper articles, 2 science demonstrations, highlighting a variety of styles and literature types with a scientific theme of inventions and innovative ideas to help improve everyday life, including a focus on the greatest Creator, highlighting some unusual creatures within His creation; Flash Forward modern invention feature; challenging vocabulary and definitions listed in stories at bottom of pages; BUILD ON IT literary concepts highlighting biography and autobiography; introducing first- and third-person point of view and problem and solution text structure; The Author's Pen to highlight creative writing techniques; story and Christian character themes; silent reading selections; interesting informational facts; illustration and photo observations; Think About It, What DO YOU Think?, Think It Through—factual, inferential, and interpretive comprehension/discussion questions; What Can YOU Do? activities; What Would YOU Do? activities including creative ideas for helping others; author and historical background information prompts, as well as literary type prompts for explanation of terms; additional enrichment activities include map, game, creative writing, biblical worldview discussions noted by icons, critical thinking discussions and activities noted by icon; BUILD ON IT literary concept activities: problem/solution creative writing, problem/solution graphic organizers for creative collaboration
- *Road Trip West*—25 stories, 13 poems, 1 recipe, 1 author highlight page, 1 Scripture reading, highlighting a variety of styles and literature types with a road trip theme traveling the western United States featuring a fictional family named the Daniels; challenging vocabulary and definitions listed in stories at bottom of pages; BUILD ON IT literary concepts introducing dialect and cause/effect text structure; Track My Trip for added geographical information; Think About It, What DO YOU Think?, Think It Through—factual, inferential, and interpretive comprehension/discussion questions; What Can YOU Do? activities, What Would YOU Do? activities including creative ideas for helping others; author and historical background information prompts, as well as literary type prompts for explanation of terms; The Author's Pen to highlight creative writing techniques, story and Christian character themes; silent reading selections; interesting informational facts; illustration and photo observations; additional enrichment activities; BUILD ON IT literary concepts include: creative collaboration, charting cause/effect and problem/solution, comparing and contrasting topics from informative texts, writing a cause/effect informative story

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

Reading cont.

- *Reading Comprehension 4*—collection of 43 selections including science articles, short stories, historical informative selections, assessment pages for recall, application, evaluation, and analysis for thinking and problem solving; including index of Literary Application of Concepts: main idea, details, character analysis, author purpose, mood, theme, moral, point of view, visualization, setting, prediction, text evidence, sequence, inference, fact/opinion, foreshadow, context clues, text structure, idiom, dialect, hyperbole, story elements, dialogue, shades of meaning
- *Adventures in Other Lands*—28 timed narrative and informative selections with an international theme; 28 quizzes to assess comprehension and speed; 1 game to chart personal progress (while analyzing scores, students can determine their best reading rate to achieve optimal accuracy in comprehension); quiz key

Comprehension, Discussion & Analysis Skills Development

- Answer factual and interpretive for most stories, poems, and other selections
- Answer inferential comprehension and discussion questions for most stories and poems
- Summarize selected readings
- Apply understanding of literary types, terms, and concepts

Language Arts: Language

The work-text *God's Gift of Language 4* gives students the tools necessary to become effective communicators. Through a variety of practice exercises in both grammar and writing, students continue building on the foundational language concepts learned in third grade. Fourth graders will expand their understanding and knowledge of English as they apply the following concepts: sentence structure and writing style; identifying and correctly using all eight parts of speech including action, helping, being, and linking verbs; identifying sentence patterns; subject-verb agreement including contractions and irregular verbs; punctuation rules including commas, periods, colons, quotation marks, and underlining; capitalization rules; and proofreader's marks.

Correlating with both *Writing with Purpose 4* and the Reading 4 program, *God's Gift of Language 4* allows students to translate grammar and mechanics skills into effective communication through writing applications appropriately spaced throughout the year. Students learn paragraph structure, summarization skills, cause/effect, inference, and persuasive writing (fact/opinion), as well as complete book reports (4), and a five-paragraph historical essay.

Added Enrichment

- Four themes (how things work, unusual animals, countries of the world, fine arts)
- Glossary section of language terms
- Writing section including graphic organizers for historical essay, book report forms
- Dedicated homework section
- Take 5! review mini-quizzes
- Continual spiral review and application of previously taught material

Evaluation

- Book reports (4)
- Historical essay
- Weekly quizzes (33)
- Biweekly tests (17)

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

Grammar

- Capitalization:
  - First word in every sentence
  - Days of the week and months of the year (not seasons)
  - Holidays/special days
  - Names referring to God and the Bible
  - Names, titles of respect, the word *I*, family titles used as names
  - Cities, countries, rivers, oceans, map locations
  - First word and every important word in titles
  - ➤ First word of direct quotations
- Punctuation:
  - Periods:
    - At end of most sentences
    - After initials/titles of respect
    - After abbreviations
  - Question marks at end of interrogative sentences
  - Exclamation points at end of exclamatory sentences
  - Quotation marks:
    - Before and after a direct quotation
    - ➤ Around titles of short stories, poems, songs, articles
  - Commas:
    - After *yes* or *no* at beginning of sentence
    - After names of people you are speaking to (direct address)
    - Separate town or city from state
    - Separate words or groups of words in a series
    - Separate parts of a date
    - After the greeting and closing of a friendly letter
  - Apostrophes:
    - In contractions
    - With *s* to make a singular possessive
    - ➤ With *s* or single apostrophe to make a plural possessive
  - ➤ Colon:
    - ➤ Between chapter/verse of Scripture reference
    - Between hour/minute of written time
  - ➤ Underline:
    - ➤ Titles of books, newspapers, magazines, plays, works of art
    - ➤ Names of ships, planes, trains
- Sentences:
  - Recognize:
    - Complete sentences
    - Kinds of sentences: declarative, interrogative, exclamatory, imperative
    - Run-on sentences
    - ➤ Run-together sentences (corrected using introductory words/commas)

Language *cont.*

Grammar *cont.*

- Complete subject and predicate
- Simple subject and verb (including within contractions, imperative/interrogative sentences)
- Subject-verb agreement (including compound subjects, helping verbs/contractions)

- Diagramming:
  - Subject/verb (including compound)
  - Adjectives
  - Adverbs
  - Conjunctions
  - ➤ Sentence patterns (S, AV, DO) (S, LV, PA) (S, LV, PN)
  - ➤ Compound sentences
- Contractions:
  - Subject-verb agreement within contractions
  - ➤ Avoiding double negatives
- Parts of Speech:
  - Verbs:
    - Past, present, future tense
    - Action (with direct objects)
    - Compound verbs/verb phrases
    - ➤ State of being
    - Helping
    - Irregular verbs (past, present, need helping verbs)
    - ➤ Linking verbs (predicate adjective/predicate nominative)
    - Word usage:
      - *may/can, teach/learn, take/bring*
      - *lie/lay, sit/set*
      - ➤ *should/would/could*
    - Singular/Plural:
      - Plural spelling rules
    - Diagram
  - Nouns:
    - Singular/Plural:
      - Plural spelling rules
      - Irregular plural nouns
    - Common/Proper
    - Compound
    - Possessive (plural possessives)
    - Diagram (subjects, predicate nominatives, direct objects)
  - Pronouns:
    - Define and identify
    - Identify antecedents
    - ➤ Pronoun-antecedent agreement (number/person)
    - ➤ Case: subjective/objective/possessive
    - ➤ Compound
  - Adjectives:
    - Answer *What kind, How many, Which one, Whose,* and *How much*
    - Possessive adjectives (nouns/pronouns)
    - Articles
    - ➤ Proper adjectives
    - ➤ Degrees of comparison
    - ➤ Predicate adjectives
    - ➤ Differentiating *good/well*
    - Diagram (modify subject/other nouns, compound, predicate adjectives)
  - Adverbs:
    - Modify verbs
    - Answer *How, When, How often, Where*
    - ➤ Avoiding double negatives
    - ➤ Degrees of comparison
    - ➤ Differentiating *good/well*
    - Diagram
  - Conjunctions:
    - Define and identify
    - *and, or, but, for, yet*
    - Diagram in compound subjects/verbs,
    - ➤ Diagram in compound modifiers/compliments
  - ➤ Prepositions:
    - ➤ Identify 30
    - ➤ Prepositional phrase
    - ➤ Object of preposition
    - ➤ Differentiating preposition/adverb
    - ➤ Interjections
    - ➤ Correct usage
    - ➤ Punctuation rules (exclamation point, comma)
    - ➤ Related capitalization
- Word study and diction:
  - Contractions (34)
  - Troublesome words:
    - Correct usage: *There/Their/They're, Your/You're, Its/It's*
    - ➤ *accept/except, affect/effect, beside/besides, between/among, burst/bust, have/of, less/fewer, off of/off, to/and, wait on/wait for*
    - ➤ Use negatives correctly
  - Homonyms/Antonyms
  - Transition words/Introductory words
  - Dictionary skills:
    - Alphabetical order
    - Guide words, pronunciation, meaning, spelling, part of speech
  - Thesaurus skills:
    - Synonyms

Composition

- Writing sentences using an assigned word or topic
- Correcting fragments
- Correcting run-on/run-together sentences:
  - Compound sentences
  - ➤ Complex sentences
- Correcting choppy style by combining short sentences
- ➤ Correcting stringy style by dividing long sentences
- Using proofreader's marks for insert, capitalize, lowercase, delete, spelling error
- Writing:
  - Using graphic organizers to identify/organize topics and main points
    - In given paragraph/story/article
    - In researched/original topic to write paragraph
    - Comparison/Contrast
    - Cause/Effect
    - Fact/Opinion
    - Word/Character
  - Book reports (4):
    - Allegory
    - Christian fiction
    - Biography (choice)
    - Fiction (choice)
    - Non-fiction (choice)

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Language *cont.*

Composition *cont.*

- Facts/Opinions (persuasive paragraph)
- Topic/Concluding sentences
- Cause/Effect
- Time order words
- Parts of a friendly letter, including addressing envelope
- Summarizing:
  - Historical text (non-climactic)
  - Informative text (science)
  - Narrative text
- › Historical Essay (5 paragraphs): Using the Writing Process
  - › Research/organize using graphic organizer for each paragraph
  - › Introductory/Concluding paragraphs
  - › Write rough drafts; check/polish, compile, rewrite

Language Arts: Penmanship/Creative Writing

Penmanship: Writing with Purpose 4 contains exercises designed to give fourth graders daily instruction and practice in developing their penmanship skills. Emphasis is placed on neatness and correct letter formation through daily practice. Students will benefit from character building themes and thought-provoking questions through historical biographies and weekly Word Craft activities. Each activity is designed to promote thinking skills, creativity, and class discussion. Activities include the following: name acrostic, idioms, creating a party menu, and completing a boarding pass and passport information.

Creative Writing: Beginning in lesson 87, students apply effective communication skills as writing class focuses primarily on creative writing. A variety of creative writing topics will challenge students' thinking skills, enhance imagination, and prepare students to be skilled writers.

Added Enrichment

- Correlates with Writing Process taught in Language 4
- Decorative writing collection
- Optional collaborative projects
- Extra practice for penmanship review during creative writing focus
- Optional activities for additional creative writing opportunities
- Word Craft activities
- Additional writing exercises included in Language, Reading, History, Science, and Health

Evaluation

- Tests (33)
- Creative Writing selections (5-optional)

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

Skills Development

- Handwriting:
  - Achieve good writing position:
    - Sitting properly in desk
    - Holding pencil correctly
    - Slanting paper correctly
  - Reviewing correct formation of all lower- and uppercase letters and numbers
  - Writing skills for a good overall appearance:
    - Forming difficult letters correctly
    - Placing letter correctly on lines
    - Writing with consistent spacing between letter and words
    - Slanting letters properly
    - Making smooth connections between letters and difficult letters
    - Using key strokes: wave, loop, oval, mountain
    - Writing using ¾ spacing on wide ruled paper
    - Writing using consistent letter size
    - Demonstrate ability to copy from print to cursive
  - › Historical biographies with inspirational/character building quotes

Creative Writing

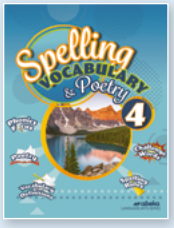
- Reviewing and enhancing the writing process: read and gather, think and plan, write and rewrite, check and polish, share your results
- Use proper punctuation and capitalization
- Organize main ideas into graphic organizers
- Writing topic/concluding sentences
- Constructing paragraphs
- › State history reports correlating with History project *My State Notebook*:
  - › State symbol
  - › Cultural heritage
  - › Vacation spot
  - › Interesting facts
- Developing stories using suggested topics
- Writing a process summary using time-order words
- › Multi-paragraph research reports
- Writing a persuasive letter
- Writing an original play
- › Collaborative project: The Island of __
  - › Design island symbols (map, flag, seal).
  - › Characteristics of citizenship, laws
  - › Acceptance speech
  - › Island website
  - › Travel brochure

Penmanship/Creative Writing cont.

Creative Writing *cont.*

- Creative writing collection
- Guided research reports
- Picture writing prompts
- Story starters
- Stories with alternate endings
- Demonstrating comprehension by engaging in class discussion
- Compositions include these topics:
  - Imaginative pieces
  - ➤ State history research paragraphs
  - ➤ Biographical historical report on state figure
  - ➤ Biographical scientist report
  - "How to" step-by-step process
  - Play: setting, narration, and dialogue
  - ➤ Shape poems
  - ➤ Literary emphasis lessons correlating with *Charlotte's Web*
  - ➤ Compare/Contrast of two and three items

Language Arts: Spelling, Vocabulary & Poetry



Spelling, Vocabulary, and Poetry 4 applies the skills of effective communication by teaching how spelling "works," examining words while applying spelling patterns and phonics. Lists integrate words from everyday life and words from other academic subjects. Words are arranged into four sections: Spelling Rule, Phonics Focus, Vocabulary Words, and Challenge Words. Students will build spelling and vocabulary skills by completing a variety of activities as well as expand spelling knowledge beyond the spelling list. Opportunities to develop a biblical worldview are provided as each list begins with A Word to Live By: a Bible verse and character trait related to a spelling or vocabulary word.

Added Enrichment

- Spelling and vocabulary:
  - Spelling lists (34) including 4 review lists
  - Total words (836)
  - Vocabulary words and definitions (136)
  - Practice Activities (139)
  - Spelling Bridges Applications (34)
  - Spelling Games (19)
  - Character-building Bible verses
  - Quick-reference spelling rules in text
  - Organized by spelling and phonetic patterns
  - Build on previous concepts
  - Reinforce new concepts
- Teacher Resources:
  - Scope and sequence
  - Sentence banks
  - Teaching Tips
  - Spelling Hints
  - Discussion Starters
  - DTAs available for spelling practice and review
- Poetry
  - Poetry section includes:
    - Introduction to each poem
    - Vocabulary words to know
    - Comprehension questions and critical thinking questions
    - Discussion Starters
    - Enrichment ideas
    - Literary terms
    - Biblical worldview
    - DTAs available to enrich interpretation and appreciation

Evaluation

- Spelling tests (34)

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Spelling and Vocabulary Skills Development

- Master spelling lists including:
  - Words arranged according to patterns
  - Compound words
  - Capitalized words
  - Abbreviations
  - Prefixes
  - Suffixes
  - Root words
  - Double consonants
  - Applying spelling and vocabulary words correctly to complete sentences and paragraphs
  - ➤ Memorize vocabulary definitions
  - Commonly misspelled words
  - Syllable rules
  - Four review lists
  - Applying spelling pattern concepts through daily:
    - Teacher-directed oral practice
    - Independent written practice
    - Exercises and games that reinforce spelling skills
    - ➤ Exercises that reinforce learning
    - ➤ Spelling Bridges to make application of acquired spelling skills
  - Hearing spelling and vocabulary words in example sentence, in order to clearly understand each word's meaning; differentiate between sound-alike words

Learn Spelling Rules:

- *i* before *e* except after *c*
- ➤ *i* before *e* except after *c* or when sounded like *a* as in *neighbor* and *weigh*
- Exceptions to the "*i* before *e* except after *c* rule"
- ➤ Double the final consonant before a suffix beginning with a vowel if (1) the word has only one syllable or is accented on the last syllable and (2) the word ends in a single consonant preceded by a vowel.
- When a root word ends in a consonant and a *y*, change the *y* to *i* before adding a suffix unless it begins with an *i*.
- When a root word ends in a consonant and a *y*, change the *y* to *i* before adding a suffix unless it begins with an *i*.

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Spelling, Vocabulary & Poetry cont.

Learn Spelling Rules: *cont.*

- When a root word ends in a vowel and a *y*, add the suffix.
- Double the final consonant in a one-syllable word only if the word ends in one vowel and one consonant. Double the final consonant in a word of two or more syllables if the word ends in one vowel and one consonant and the final syllable is accented.
- Use a *t* for the *ch* sound when followed by *u-r-e*.
- If a word has two or more syllables use c for the final *k* sound.
- The letter *q* is followed by *u* and at least one more vowel.
- When a root word ends in a silent *e*, keep the *e* if the suffix begins with a consonant.
- When a root word ends in a silent *e*, drop the *e* if the suffix begins with a vowel.
- The *f* sound can be spelled *p-h*, *g-h*, or *f*.
- The singular and plural forms of some nouns are spelled the same.
- The plural form of nouns ending in *s*, *x*, *z*, *ch*, or *sh* is formed by adding *-es*.
- The plural form of some nouns ending in *f* or *fe* is formed by changing *f* or *fe* to *v* and adding *-es*.
- The suffixes *-able* and *-ible* say the same sound.
- The *sh* sound is sometimes spelled *c-i* at the beginning of any syllable except the first.
- When *ks* sound is in the middle of a word, it is usually spelled with an *x*.
- When the long *e* sound comes before a final syllable beginning with a vowel, it is usually spelled with *i*.
- Some words contain unusual spellings.

Learn Phonics Focus:

- The long *a* sound can be spelled *a*, *a-i*, *e-a*.
- The long *e* sound can be spelled *e*, *e-e*, *e-a*, *e-o*.
- When *y* comes at the end of a word, it usually says the long *e* sound.
- The long *o* sound can be spelled, *o*, *o-u-g-h*, and *o-a*.
- The long *i* sound can be spelled with a *y*.
- The sound *aw* in *saw* can be spelled *a-u, a-u-g-h*, and *a-l*.
- The sound *oo* in *tooth* can also be spelled *u*.
- The sound *ow* in *owl* can also be spelled *o-u*.
- Words containing silent consonants
- The short sound of *i* can be spelled with a *y*.
- The sound *sion* in *missionary* is spelled *sion* even as a suffix.
- The sound *ar* in *stars* can be spelled *a-r*.
- When *c* comes before *e*, *i*, or *y*, it says the *s* sound.
- When *g* comes before *e*, *i*, or *y*, it says *j*.
- The sound *tion* in *nation* is spelled *t-i-o-n*.
- The spelling *o-u-g-h* represents many sounds.
- The letters *a-r* at the end of words with two or more syllables says *er*.
- The sound *er* at the end of words can be spelled *e-r*, *a-r*, or *o-r*.
- The syllable *p-r-e* can be pronounced *prĕ* or *prē*. The syllable *p-e-r* can be pronounced *pur* or *per*.
- The short *o* sound can be spelled *a-u*.
- The letters *g-h* can be silent or say the *f* sound.
- The letters *d-e* and *d-i* at the beginning of a word can sound alike.
- In French words, the final *t* is silent.
- Long *u* can be spelled *u-e*, *e-w*, *u_e*, and *u*.

Worksheet Activities:

- Identifying root words
- Dividing words according to syllables
- Alphabetizing to the third and fourth letter
- Identifying rhyming words
- Proofreading and using proofreader's marks
- Finding the correct antonym and synonym
- Solving puzzles using spelling words
- Using spelling and vocabulary words to complete sentences
- Identifying variant spellings of the same sound
- Defining vocabulary words
- Identifying homonyms
- Applying spelling rules to complete words
- Creative writing with spelling and vocabulary words
- Adding suffixes correctly
- Using words in biblical context

Poetry Skills Development

- Memorize 8 lyrical poems
- Develop appreciation of poetry
- Introduce personification, rhyme scheme, imagery, onomatopoeia, and other literary terms.
- Perform before an audience.
- Recite in unison.
- Develop appropriate expression and volume.
- Learn the meanings of new and unfamiliar words.
- Improve comprehension through discussion.
- Critical thinking questions to stimulate reasoning
- Discussion Starters to facilitate biblical application
- Enrichment ideas to generate interest in the message of the poem

Arithmetic

The colorful daily worksheets in *Arithmetic 4* provide practice over familiar concepts and new material. Building on a solid foundation of the base ten system and the four basic processes, students expand arithmetic skills including multiplying and dividing by multi-digit numbers, estimation, interpreting graphed data, writing decimals as fractions, and simple geometry. A major emphasis is on working with proper and improper fractions; adding, subtracting, and multiplying fractions; and finding the least common denominator. Students will continue to solve multi-step word problems which encourage the practical application of concepts being learned.

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Added Enrichment

- "Clever Cranium" higher-level thinking activities
- Thematic units: how things work, unusual animals, tiny countries, state fairs
- Review games
- Teaching Tips
- Enrichment activities

Evaluation

- Skills development exercises in each lesson (136)
- Biweekly tests (17)
- Biweekly quizzes (34)

Numbers

- Base ten: Place value to 100,000,000; money
- › Decimals to thousandths place
- Writing numbers:
  - From dictation to 100,000,000 place
  - From number words
  - From expanded form
- Even/odd numbers
- Roman numerals:
  - Value of I, V, X, L, C, D, M
  - › Reading and building numerals 1–3,000
  - › More complex rules for forming Roman numerals
- >, <, =, ≠
- Number sentences:
  - With unknowns
  - Greater than/less than
  - Order of operations (parentheses)
- Number sequences
- Rounding to nearest ten/hundred
- Rounding to nearest dollar
- › Prime/composite numbers
- › Mixed numbers
- › Squared numbers/square root
- › Annexing zeros to add/subtract decimals

Addition

- Addition families 1–18: mixed order
- Timed mastery
- Terms: addend, sum
- Horizontal
- Missing addend/sign
- Rounding addends to estimate sums
- Word problems
- Money
- Properties: commutative/associative
- Inverse operation of addition/subtraction:
  - Related facts
  - Check by addition
- › Mental arithmetic: problems combining addition, subtraction, multiplication, and division up to 7 numbers
- Carrying to any place value
- Addends: column addition
- Averaging
- Number sentences: with unknown
- Fractions:
  - With common denominators
  - › With uncommon denominators
- Measures:
  - Customary
  - › Metric
- Order of Operations (parentheses)
- › Decimals

Subtraction

- Subtraction families 1–18: mixed order
- Timed mastery
- Terms: minuend, subtrahend, difference
- Horizontal
- Missing minuend, subtrahend/sign
- Rounding minuend/subtrahend to estimate difference
- Word problems
- Money
- Inverse operation of addition/subtraction:
  - Related facts
  - Check by addition
- › Mental arithmetic: problems combining addition, subtraction, multiplication, and division up to 7 numbers
- Subtracting with any number of digits, money
- Borrowing from any number in any position
- Fractions:
  - With common denominators
  - › With uncommon denominators
  - › With borrowing from ones place
- Number sentences: with unknown
- Measures:
  - Customary
  - › Metric
- Order of operations (parentheses)
- › Decimals:
  - › Annexing zeros

Multiplication

- Multiplication facts: 0–12 tables
- Timed mastery
- Terms: factor, partial factor, product
  - › Rounding factors to estimate product
- Word problems
- Money
- Properties: commutative/associative
  - Related facts (addition, subtraction, multiplication, division)
  - Check by multiplication
- Inverse operation of multiplication/division
- › Identity/zero properties
- › Mental arithmetic: problems combining multiplication, division, addition, and subtraction up to 7 numbers

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Arithmetic *cont.*

Multiplication *cont.*

- Multiplying:
  - With any number of digits in first factor
  - With carrying
  - ➤ With up to 3 digits in second factor
- Number sentences: with unknown
- Order of Operations (parentheses)
- ➤ Fractions:
  - ➤ With common denominators
  - ➤ With uncommon denominators
  - ➤ Use cross multiplication to check equivalent fractions
  - ➤ Using cancellation
  - ➤ With mixed/whole numbers
- ➤ Factors:
  - ➤ Factoring
  - ➤ Common factors, greatest common factor (GCF)
- ➤ Multiples:
  - ➤ Identify multiples
  - ➤ Common multiples, least common multiple (LCM)

Division

- Division facts: 0–12
- Timed mastery
- Terms: dividend, divisor, quotient
- Missing numbers
- Averaging
- ➤ Rounding dividend to estimate quotient
- Word problems
- Money
- Inverse operation of multiplication/division:
  - Related facts
  - Check by multiplication
- ➤ Mental arithmetic: problems combining division, multiplication, subtraction, and addition up to 7 numbers
- Dividends: any number of digits, money
- Divisors: 1 and 2 digits
  - ➤ Two-digit divisors with 5–9 in ones place
  - 5 steps of division
- ➤ 6 steps of division:
  - ➤ Estimating quotients/divisors
- Remainder written as fraction
- ➤ Divisibility rules: 2, 3, 4, 5, 9, 10
- Number sentences: with unknown
- Order of Operations (parentheses)

Fractions

- Parts of a whole
- Parts of a group
- Terms: numerator, denominator
- ➤ Unit fractions: identify/compare
- Word problems
- Number words
- Reading and writing fractions
- ➤ Decomposing fractions
- Types:
  - Proper, mixed, improper
  - ➤ Write as a whole or mixed number
- Reducing:
  - ➤ Finding least common denominator
  - ➤ Answers to lowest terms using greatest common factor
- Addition:
  - With common denominators
  - ➤ With uncommon denominators
- Subtraction:
  - With common denominators
  - ➤ With uncommon denominators
  - ➤ With borrowing
- ➤ Multiplication:
  - ➤ Using cancellation
  - ➤ With whole or mixed numbers
- Equivalent fractions:
  - ➤ Using cross multiplication to check

Decimals

- Money:
  - Use of a dollar sign/decimal point in addition, subtraction, multiplication, division of money
- ➤ Decimal point
- ➤ Reading and writing: writing a decimal as a fraction
- ➤ Place value to tenths, hundredths, thousandths places
- ➤ Addition and subtraction:
  - ➤ Annexing zeros for addition/subtraction

Problem Solving & Applications

- Word Problems:
  - ➤ Solving strategies based on context
  - ➤ Numberless word problems
  - Missing/unnecessary information
  - Addition, subtraction, multiplication, division
  - Fractions, money, measures
  - Finding averages
  - ➤ Decimals
  - ➤ Geometry: area, perimeter using formulas
  - Graphs
  - Multi-step problems
  - Estimating answers
- ➤ Applications for more comprehensive understanding of concepts: fractions, measures, geometry, spatial awareness, analogies, deductive puzzles, logic puzzles

Time

- Table of time:
  - Second, minute, hour, day
  - Week, year, leap year
  - ➤ Decade, score, century, millennium
- Elapsed time

Money

- Value of all coins, bills, combinations of coins/bills
- Symbols: dollar sign, decimal point
- Word problems with mixed operations
- Addition, subtraction, multiplication, division
- Making change
- ➤ Counting back change

Measures

- Temperature:
  - Reading and writing
  - Term: degrees
  - Celsius and Fahrenheit
  - Reference temperatures: Freezing and boiling points of water; normal body temperature

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Arithmetic *cont.*

Measures *cont.*

- Linear:
  - Customary units: inch, foot, yard, mile
  - Metric system: meter, kilometer, hectometer, decameter, decimeter, centimeter, millimeter
  - ➤ Measure to nearest eighth inch/centimeter
- Mass:
  - Customary units: ounce, pound, ton
  - Metric system: gram, kilogram, hectogram, decagram, decigram, centigram, milligram, metric ton
- Capacity:
  - Customary liquid units: teaspoon, tablespoon, fluid ounce, cup, pint, quart, gallon
  - Customary dry units: pint, quart, peck, bushel
  - Metric system: liter, kiloliter, hectoliter, decaliter, deciliter, centiliter, milliliter
- Order measures from least to greatest
- Convert customary/metric measures within same system
- Measurement equations with converted customary/metric measures within same system
- Multi-step measurement word problems

Graphing, Statistics & Probability

- Interpret, compare, and construct graphs:
  - Horizontal/vertical bar graphs
  - Pictographs
  - Line graphs
  - ➤ Circle graph (no constructions)
  - ➤ Dot plots
- Tally marks
- Scale drawing/maps
- Statistics:
  - ➤ Mean, mode, median, range

Geometry

- Plane figures, closed figures, polygons:
  - Quadrilaterals:
    - Parallelogram: rectangle, square, rhombus
    - Trapezoid, kite
  - Pentagon, hexagon, octagon, decagon
- Triangles:
  - ➤ Right, isosceles, equilateral
  - ➤ Similar, congruent figures
  - Symmetry
  - ➤ Transformations: slide, flip, turn
  - Terms: vertex, side
  - Symbols: hash marks
- Solid figures: sphere, cube, pyramid, cone, cylinder, rectangular prism
  - Terms: face, edge, vertex, height, width, length
- Perimeter/area:
  - ➤ Perimeter of square/rectangle using formulas
  - Perimeter of polygon, adding length of sides
  - ➤ Area of square/rectangle using formulas
- Circle:
  - ➤ Arc, radius, diameter, center
  - ➤ 360°
- Lines:
  - ➤ Naming lines using points/letters
  - Parallel lines
  - Perpendicular lines
  - ➤ Intersecting lines
  - ➤ Line segment
  - ➤ Point
  - ➤ Ray
- Angles:
  - ➤ Naming angles using points, vertex, letters
  - ➤ Obtuse, right, acute
  - ➤ Measure to nearest degree using protractor

Pre-Algebra

- Missing addend, minuend, subtrahend
- Word problems
- Order of Operations (parentheses)
- Solve for the unknown number in an equation

History & Geography

The History of Our United States is an interesting, narrative approach to an age-appropriate study of American history. Beginning with the settlement of the thirteen colonies, students explore how the United States became a free nation, formed a government, and grew to be a powerful world leader. Twenty chapters walk students through America's timeline of successes and struggles that shaped our nation. Important people and events in America's story will inspire students to stand for right, respect their country and its people, and love their native land.

Added Enrichment

- Chapters include:
  - Important terms: names, places, events, dates
  - Maps illustrating locations of early colonization to recent historical events
  - Timelines: at the beginning of each chapter
  - Comprehension Checks: at the end of each lesson, including questions that evoke critical thinking skills
  - Chapter Checkups: at the end of each chapter
- Special feature boxes include presidential homes and libraries, fascinating people, and interesting facts.
- An introduction to each amendment to the Constitution
- An introduction to economics in the United States
- Geography Mastery including geographic terms, U.S. geographic study, five regions of the United States, her territories, and coordinating maps
- Geography Skills worksheets
- World Geography study (2 weeks) in preparation for Old World Geography
- *My State Notebook* for individual state study (6 weeks)

Evaluation

- Quizzes (24)
- Tests (9)
- 9-weeks exam (4)

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U.S. History Study

- ➤ Reasons for exploration of New World: need for natural resources; overcrowded and polluted cities of Europe; search for riches
- ➤ First Americans probably reached New World by land bridge between Asia and North America
- Christopher Columbus claimed New World for Spain
- ➤ New World called America to honor Amerigo Vespucci
- ➤ England, France, and Spain raced for control of New World
- ➤ John Cabot: claimed East Coast of North America for England
- ➤ Hernando Cortes: claimed Mexico for Spain
- ➤ Jacques Cartier: claimed Canada for France
- ➤ Explorers brought disease to America, but also introduced horses that improved Native American way of life
- ➤ St. Augustine, FL: first permanent settlement in America
- ➤ Roanoke Island: failed English colony led by John White
- Jamestown: first permanent English settlement
- Pilgrims founded Plymouth Colony in 1620
- ➤ Puritan Work Ethic: encouraged man to serve God by doing his best at his work
- ➤ Thirteen original colonies: Virginia, Massachusetts, Rhode Island, New Hampshire, New York, Connecticut, Maryland, Delaware, New Jersey, Pennsylvania, North Carolina, South Carolina, Georgia
- ➤ Three divisions of first thirteen colonies: New England, Middle, Southern
- ➤ Roger Williams: founder of Rhode Island, first colony to offer complete religious freedom
- ➤ Captain John Mason: founded New Hampshire
- ➤ John Winthrop: founder of Connecticut
- ➤ Thomas Hooker's Fundamental Orders of Connecticut became a pattern for the U.S. Constitution
- ➤ New York colony claimed by Holland, France, England
- ➤ Delaware settled by Dutch; New Sweden first successful settlement
- Pennsylvania settled by William Penn; Penn's Charter of Privileges was its plan of government
- ➤ New Jersey colony claimed by England, offered religious and political freedom
- ➤ Virginia government called House of Burgesses
- ➤ Slavery in colonies: began in Virginia in 1619
- ➤ The Carolinas became North and South Carolina; first permanent settlement was Charles Town
- ➤ Maryland founded by George Calvert; offered religious freedom to Catholics
- ➤ Georgia founded by James Oglethorpe to help English debtors; first permanent settlement was Savannah
- Everyday life in the colonies: homes, work, worship
- Colonial school: hornbook, *New England Primer,* dame school, old field school, Harvard College
- ➤ Colonial industries: fishing, farming, hunting, forestry
- ➤ The Great Awakening: spiritual revival in colonies; preachers included Jonathan Edwards and George Whitefield
- ➤ Isaac Watts: hymnwriter during Great Awakening
- French and Indian War: fought between France and England over land in America
- ➤ Colonist George Washington: became guide and adviser to English General Edward Braddock during French and Indian War
- King George III: created Stamp Act to tax only American colonists
- Boston Massacre: resulted in England dropping all taxes except tea tax
- Boston Tea Party: carried out by Sons of Liberty
- ➤ Intolerable Acts: created to punish citizens of Boston
- ➤ First Continental Congress: met to declare rights of colonists
- ➤ Patriots: colonists who stood against England
- ➤ Loyalists: colonists who remained loyal to England
- Patrick Henry: "Give Me Liberty or Give Me Death" speech
- Paul Revere: rode to warn Lexington and Concord of British troops
- ➤ 1775: Beginning of American War for Independence, "shot heard 'round the world"
- Second Continental Congress: decisions made to prepare the colonies for the war to come
- ➤ Ethan Allen, Green Mountain Boys: capture of Fort Ticonderoga
- ➤ Battle of Bunker Hill: showed British that colonies were ready to fight
- ➤ Olive Branch Petition: offered by colonies to create peaceful agreement with England
- ➤ Hessians: hired by British to fight against colonists
- Thomas Jefferson: main author of Declaration of Independence
- July 4, 1776: Declaration signed by John Hancock
- Famous war battles: Brooklyn, Saratoga, Valley Forge, crossing of the Delaware at Trenton, Yorktown

History & Geography cont.

U.S. History Study cont.

- Patriot spies: James Armistead, Culper Spy Ring, Nathan Hale
- Creation of American flag
- George Rogers Clark: won control of northwest frontier during War for Independence
- John Paul Jones: captain of *Bonhomme Richard*; called "Father of the American Navy"
- General Lord Charles Cornwallis: British army leader
- Nathanael Greene: Colonial general who led troops in Southern colonies in the Battle of Kings Mountain
- Battle of Yorktown: last major battle in War for Independence
- 1781: end of American War for Independence
- Treaty of Paris: treaty in which England gave up her thirteen colonies
- Articles of Confederation: first plan of government for United States
- Constitutional Convention: George Washington (president of convention)
- James Madison: known as Father of the Constitution
- 1787: Constitution adopted
- Three branches of U.S. government: Legislative, Executive, Judicial
- Bill of Rights: first 10 amendments to the Constitution
- Constitutional republic: United States' form of government
- President George Washington: first U.S. president; served two terms
- Three capitals of the United States: New York City; Philadelphia; Washington, D.C.
- Daniel Boone: built Wilderness Road, Kentucky; Boonesborough named in his honor; "great pathfinder"
- Settling the Northwest Territory, Land Ordinance of 1785, Northwest Ordinance of 1787
- Ohio Territory: first area settled in Northwest Territory
- Louisiana Purchase: President Thomas Jefferson's purchase of land from France
- Lewis and Clark: explored Louisiana Territory with Corps of Discovery, Sacagawea
- Zebulon Pike: explored upper Mississippi River area
- War of 1812: 1812–1815; war between United States and Britain over shipping rights
- Battle of Lake Erie: Captain Oliver Hazard Perry led U.S. Navy to victory
- Battle of Fort McHenry: Francis Scott Key, "The Star-Spangled Banner"
- Battle of New Orleans: General Andrew Jackson, nicknamed "Old Hickory," defeated British
- Cumberland Road: first federally funded highway
- Erie Canal: connected Great Lakes to New York City and Atlantic Ocean; improved shipping
- Purchase of Florida: President James Monroe
- Missouri Compromise: made slavery illegal in some areas of U.S. territories
- Monroe Doctrine: President Monroe's policy stating the Western Hemisphere was not open to more colonization; U.S. would not interfere with governments of European countries
- Peter Cartwright: circuit riding preacher who helped start the Second Great Awakening
- Charles Finney: best-known evangelist during Second Great Awakening
- Richard Allen: former slave who founded African Methodist Episcopal Church
- Adoniram Judson: Father of American Missions
- Lott Carey, Colin Teague: American missionaries to Africa
- President Andrew Jackson: first president from Democratic party
- Indian Removal Act, Trail of Tears: relocated Cherokee nation to Oklahoma
- Battle of the Alamo: Davy Crockett, Santa Anna
- Battle of San Jacinto followed Battle of the Alamo; led by Sam Houston and won by Texas army
- Mexican War: fought over land that Texas and Mexico both claimed
- Mexican Cession: agreement ended Mexican War and gave United States a large area of western land
- Gadsden Purchase: land from Mexico completed the continental United States
- Webster-Ashburton Treaty: established a northeastern border between the United States and Canada from Maine to Minnesota
- Oregon Territory settled; Oregon Treaty created the United States-Canadian border
- Oregon Trail started in Missouri; led settlers to the West
- Marcus and Narcissa Whitman: medical missionaries to Native Americans
- California Gold Rush, forty-niners, ghost towns
- American textbook writers: Noah Webster and William H. McGuffey
- Inventors of tools and machines: Eli Whitney, John Deere, Cyrus McCormick, Samuel Slater, James Watt
- Transatlantic Slave Trade Act: put a stop to bringing enslaved people to America, but did not end slavery
- Abolitionist Frederick Douglass; Harriet Beecher Stowe wrote *Uncle Tom's Cabin*
- Underground Railroad led to free northern states; Harriet Tubman led over seventy people to freedom
- Compromise of 1850: set of bills to balance power in the Senate; included Fugitive Slave Act
- Dred Scott Decision: declared slavery legal in new territories
- Kansas-Nebraska Act: admitted Kansas as a slave state and Nebraska as a free state
- President Abraham Lincoln: first president from Republican party
- Secession/formation of Confederate States of America
- Jefferson Davis: president of Confederate States of America
- American Civil War: 1861–1865
- Union generals: General George McClellan, General Ulysses S. Grant
- Confederate general: Robert E. Lee
- Fort Sumter, Charleston, South Carolina: American Civil War began
- Richmond, Virginia: permanent capital of Confederacy
- Famous Civil War Battles: Bull Run, Antietam, Gettysburg, Vicksburg
- Battle of ironclad ships: *Monitor* and *Merrimack*
- Lincoln's Emancipation Proclamation: freed slaves in states that had seceded from the Union
- Gettysburg Address: Lincoln's speech to honor fallen at Gettysburg battlefield
- Sherman's march to the sea
- Appomattox Court House: location where Lee surrendered to Grant, ending Civil War, 1865
- Thirteenth Amendment: constitutional amendment outlawing slavery in the United States
- Lincoln's assassination
- Reconstruction: a period of rebuilding Southern states after the Civil War
- Freedmen's Bureau: formed to provide help for freed slaves and poor Southern families after the Civil War
- Republican party split into Radicals/Conservatives
- Civil Rights Act of 1866: declared all persons born in the United States, except for Native Americans, to be citizens
- Reconstruction Act of 1867: divided former Confederate states into five military districts
- Fourteenth Amendment: declared freedmen were citizens of the United States

History & Geography cont.

U.S. History Study cont.

- Discrimination: unjust treatment of another person because of a category such as race or skin color
- Impeachment of President Andrew Johnson; found not guilty
- Carpetbaggers and scalawags: often took advantage of poor Southerners
- Fifteenth Amendment: declared that no man could be kept from voting because of "race, color, or previous condition of servitude"
- President U. S. Grant: created Yellowstone National Park, National Weather Bureau, Department of Justice
- Sharecroppers: worked for a land owner and shared in the profits
- Compromise of 1877: ended Reconstruction
- Booker T. Washington: Tuskegee Institute
- Segregation and Black Codes: caused more struggles for freedmen
- Black Americans in government: Hiram Rhodes Revels, Joseph Rainey
- Homestead Act: passed by Lincoln during Civil War to encourage Americans to move West
- Great Plains: area in central United States where many went under Homestead Act
- Pony Express: mail delivery between Missouri and California using horses and riders
- Samuel Morse: inventor of telegraph
- Transcontinental railroad: built by Union Pacific Company and Central Pacific Company; railroad that connected the continent from coast to coast
- Promontory Summit, Utah: location of the golden spike driven into the last rail of transcontinental railroad
- Battle of Little Bighorn (Custer's Last Stand): battle between Sioux led by Chief Crazy Horse and U.S. soldiers led by General George Custer in which all U.S. soldiers were killed
- Dawes Act: broke up tribal lands and offered them to U.S. citizens or Native American families who would take up farming or ranching
- Wounded Knee Massacre: event in which over 200 members of the Lakota tribe were killed by U.S. army
- Indian Reservation: U.S. government set aside areas of land for Native Americans
- Indian Citizenship Act: declared that Native Americans were citizens of the United States
- Indian Reorganization Act: made large areas of land available to Native Americans
- American cowboys: cared for cattle owned by ranchers
- Cattle drive: herded cattle to cow towns by way of the Chisholm Trail
- Range wars: disagreements between ranchers and farmers over grazing rights
- Oklahoma Land Rush: event that allowed settlers to claim Unassigned land in Oklahoma territory
- International Meridian Conference: established time zones around the world
- U.S. Immigration stations: Ellis Island, east coast; Angel Island, west coast; coastal cities
- Chinese Exclusion Act: written to prevent Asian laborers from entering United States
- Dwight L. Moody: started Sunday school movement in Chicago
- Billy Sunday: famous baseball player, evangelist
- Spanish-American War: fought between Spain and the United States to set Cuba free from Spain; began after sinking of USS *Maine*
- Admiral George Dewey: led U.S. naval fleet that destroyed Spain's Pacific fleet
- Theodore Roosevelt: led Rough Riders to victory at Battle of San Juan Hill
- Philippines, Guam, Puerto Rico became territories of the U.S. after Spanish-American war
- Panama Canal: Isthmus of Panama, canal started by France, finished by U.S.; connects Atlantic and Pacific Oceans
- Deadly U.S. disasters in the early 1900s: Johnstown Flood, Galveston Hurricane, San Francisco Earthquake
- *Titanic*: sunk after hitting iceberg, over 1,500 lives lost
- American pastimes: New York's Coney Island called a Poor Man's Paradise; football; baseball
- Industrial Age: time of great progress in the way goods were made
- American inventors: Robert Fulton, Alexander Graham Bell, Thomas Edison, Henry Ford, Garrett Morgan, Orville and Wilbur Wright, Robert Goddard
- Andrew Carnegie and John D. Rockefeller: oil and steel millionaires who gave away much of their wealth
- Chicago, Illinois: first center of skyscraper architecture
- Child labor laws: put an end to children working long hours in dangerous jobs
- First U.S. subway system: built in Boston, Massachusetts
- Progressive Movement: a time between 1900 and 1920 when government focused on being more efficient, meeting the needs of voters
- Theory of evolution: began to be taught in some schools and colleges during Progressive Movement
- The Great War, later called World War I: 1914–1918
- Kaiser Wilhelm II: ruler in Germany who wanted more power; strengthened his army and navy
- Austria's Archduke Franz Ferdinand and wife assassinated; World War I began when Austria declared war on Serbia
- Central Powers: Germany, Austria-Hungary, Turkey, Bulgaria
- Allied Powers: Great Britain, France, Belgium, Russia, (United States later)
- Neutral nations: countries that did not participate in war
- German U-boats: submarines sank *Lusitania* passenger ship
- Zimmermann Note: Germany asked Mexico to help if United States entered the war
- President Woodrow Wilson asked Congress to declare war in 1917
- Selective Service Act: instituted the draft of men 21–30 years of age
- General John Pershing: general of the U.S. armies
- Women's role in war: munitions, factory assembly lines, nurses, ambulance drivers, etc.
- Children's role in war: scrap metal drives, raise pigs or sheep, help with gardens, gather wood, knit, help at home
- United States Food Administration: formed to provide food for troops, allies, citizens
- Bolshevik Revolution took Russia out of war; Vladimir Lenin and Communism; formation of Soviet Union (USSR)
- Eddie Rickenbacker: famous American flying ace
- Battle of Argonne Forest: deadliest battle in U.S. history
- 1918 Flu Pandemic: took more American lives than those lost in WWI
- Treaty of Versailles: officially ended WWI
- Roaring Twenties: decade after WWI
- National Broadcasting Company (NBC): first public radio station
- 1920s Americans began buying on credit
- Babe Ruth: most popular baseball player of 1920s
- Women's Suffrage: gained right to vote (19th Amendment) through efforts of Elizabeth Cady Stanton, Susan B. Anthony
- NAACP: formed to encourage racial equality
- The Great Migration: time when many Black Americans moved to less segregated north
- Harlem Renaissance encouraged Black culture and equality in arts, literature, music
- American Civil Liberties Union (ACLU) and the Scopes Monkey Trial
- Great Depression: occurred after the stock market crash of 1929

History & Geography cont.

U.S. History Study cont.

- Stocks: company shares of ownership traded through the stock market
- Public works program: started by President Herbert Hoover to provide jobs; built Boulder Dam
- Dust Bowl: area of the Great Plains that experienced severe drought during time of Great Depression
- Walt Disney: created animated cartoons of Mickey Mouse
- New Deal: President Theodore Roosevelt's recovery program for Americans during Great Depression; created jobs through Tennessee Valley Authority, Works Progress Administration, Civilian Conservation Corps
- Social Security Act: passed by Congress during Great Depression, creating fund for employees to contribute to in preparation for retirement
- American Economics: special section that teaches basic principles of economics, differences between capitalism and socialism, introduces economic terms; includes biblical money wisdom
- World War II: 1939–1945
- Communism: built on ideas of Karl Marx
- Russia: Communism under Joseph Stalin
- Italy: Fascism under Benito Mussolini
- Germany: National Socialism, Nazi government under Adolph Hitler
- Japan: Militarism under Emperor Hirohito, Tojo
- German concentration camps; Holocaust took millions of Jewish and other lives
- Axis Powers: Italy, Germany, Soviet Union, Japan
- Allied Powers: France, Great Britain (also United States and Canada)
- Battle of Britain: German air raids over London
- Winston Churchill: British prime minister during World War II
- Germany's attack on the Soviet Union: led Russia to join Allies
- World War II involved three continents: Europe, Africa, and Asia
- Japanese attack on Pearl Harbor: brought United States into the war
- Women join military: World War II
- War effort at home: victory gardens, ration books, scrap drives
- General Dwight D. Eisenhower, Allied commander in Europe
- Douglas MacArthur: Allied commander in the Pacific
- Colonel Jimmy Doolittle: led air attack over Japan in the Doolittle Raid
- General George S. Patton: led Allied forces in Italy
- D-Day: Allied troops landed on the beaches of Normandy, France
- Fighting Red Tails: Black American squadron led by Colonel Benjamin O. Davis
- Battle of the Bulge: one of the greatest battles of World War II
- Battle of the Coral Sea, Battle of Midway, Iwo Jima: important battles in the Pacific
- Atomic bomb: President Harry S. Truman ordered bomb dropped on Japanese cities Hiroshima and Nagasaki to end World War II
- United Nations: peace-keeping association formed after World War II
- Cold War between United States and USSR: threat to use nuclear weapons
- Iron Curtain: term that describes Communist border
- Truman Doctrine: stated the United States would use its power to stop the Communist overthrow of a free country
- East and West Germany, East and West Berlin, Berlin Wall: Communist and free areas in Germany; led to Berlin Airlift to provide food to West Berlin
- National Security Act: created the Central Intelligence Agency (CIA)
- Marshall Plan: helped European countries recover from World War II
- North Atlantic Treaty Organization (NATO) formed to defend member countries against a Communist invasion
- Korean War: United Nations sent army to defend South Korea against Communism
- General Chappie James: Korean War hero and first Black four-star general in U.S. Air Force
- Formation of National Aeronautics and Space Administration (NASA)
- Civil Rights Act of 1957: protected Black Americans' right to vote
- Cuban Missile Crisis: Monroe Doctrine allowed President John F. Kennedy to succeed in removing Soviet weapons from Cuba
- Peace Corps: established by President Kennedy
- John Glenn: first American astronaut to orbit Earth
- Kennedy assassination: by Lee Harvey Oswald
- Vietnam War: United States war to help free South Vietnam from Communist North Vietnam
- Medicare Bill: passed by President Lyndon Johnson to provide health insurance to senior citizens
- Billy Graham: evangelist who held large meetings that were televised around the world
- Civil Rights Movement: time of important gains in Black Americans' civil rights during 1950s and 1960s
- *Brown v. Board of Education of Topeka:* desegregation of public schools
- Rosa Parks, Montgomery bus boycott
- Dr. Martin Luther King, Jr., peaceful civil rights protests: freedom rides, sit-ins, March on Washington
- Southern Christian Leadership Conference: formed to peacefully ensure civil rights for Black Americans
- Several laws passed regarding equality: Civil Rights Act of 1964, Voting Rights Act of 1965, Fair Housing Act of 1968
- Assassination of Dr. Martin Luther King, Jr.
- Thurgood Marshall: first Black American Supreme Court Justice
- Rights for Native Americans: Indian Civil Rights Act
- MMR and polio vaccine developed
- Pacemaker: device developed to control heart rhythm
- USS *Nautilus:* first nuclear-powered submarine
- First U.S. atomic power station: Shippingport Atomic Power Station
- Alan Shepard: first American in space
- Apollo 11: first moon landing
- Neil Armstrong: first man on the moon
- Development of computer mouse, early internet
- 1962 Supreme Court ruling regarding school-led prayer in public schools; beginning of Christian school movement
- President Richard Nixon brought end to Vietnam War
- SALT talks: Nixon met with Soviet leader Leonid Brezhnev about weapons
- Watergate Affair: Nixon resigned; first president to resign from office; Gerald Ford became president
- President Jimmy Carter: Camp David Accords to form peace between Egypt and Israel
- Carter Doctrine: U.S. military would use force to defend U.S. interests in Persian Gulf
- Iran Hostage Crisis during Carter presidency
- New Energy Resources: Department of Energy formed
- U.S. Economy's Inflation and Recession; Arab Oil Embargo, Trans-Alaska Pipeline
- Inventions of email, cell phone, MRI
- Advances in Space Travel: Apollo 13, *Voyager 1*, *Voyager 2* space probes
- Traditional Values: James Dobson, Focus on the Family; Jerry Falwell, Moral Majority
- Reaganomics: President Ronald Reagan's plan to help America become stronger financially

History & Geography cont.

U.S. History Study cont.

- Sandra Day O'Connor: first female on Supreme Court; appointed by Reagan
- Development of B-1 bomber, Peacekeeper missile
- American troops stopped Cuba's invasion of Grenada
- Reagan Doctrine: belief that a strong military could stop Communist takeovers
- Black Monday: event in 1982 that started a national recession
- Martin Luther King, Jr., Day: federal holiday honoring King; established by Reagan
- Space Shuttle *Challenger*: explosion after launch
- Air Force built Stealth Bomber, radar-resistant plane
- Robert Jarvik: invented artificial heart
- Steve Jobs, Bill Gates: Apple and Microsoft personal computers
- Mount St. Helens volcanic eruption, earthquake: deadliest volcanic eruption in U.S. history
- Exxon Valdez Oil Spill: covered over 1,000 miles of Alaskan shoreline, killed thousands of ocean animals
- San Francisco Earthquake of 1989
- Chemical Weapons Accord: agreement of Bush and Gorbachev to stop producing chemical weapons and destroy existing ones
- Commonwealth of Independent States: group of former Soviet countries
- Saddam Hussein: Iraq's dictator who began invasion of other countries; Operation Desert Storm began; Persian Gulf War followed
- General Colin Powell, General Norman Schwarzkopf: military leaders of Persian Gulf War
- North American Free Trade Agreement (NAFTA): leaders of United States, Canada, and Mexico agreed to charge no trade fees between their countries
- Oslo Accords: peace agreement between Israel and Palestine that President Bill Clinton helped to bring about
- Iraq Liberation Act: proposed by Congress and signed by Clinton, stated that the United States should support removing Hussein from power
- Women in Leadership: Janet Reno, Ruth Bader Ginsburg, Madeline Albright, Hillary Clinton
- Oklahoma City Bombing
- al-Qaeda, Osama bin Laden: linked to terrorist bombings at U.S. embassies, USS *Cole*
- Hubble Space Telescope: launched to orbit Earth and to send images of space
- *Mars Pathfinder* and rover landed on Mars
- John Glenn return to space at age 77 on *Discovery*
- Advances in Computer Technology: World Wide Web, Amazon Corporation, Google web browser
- America attacked: September 11, 2001, World Trade Center, Pentagon, four commercial planes overtaken by terrorists; Osama bin Laden claimed responsibility
- Department of Homeland Security: created by President George W. Bush to help protect Americans from future terrorist attacks
- War on Terror
- Afghanistan: bin Laden's hiding place; became target in War on Terror
- Operation Iraqi Freedom: military plan to capture terrorists, destroy weapons, remove Hussein from power
- 9-11 memorials dedicated
- Space Shuttle *Columbia*: exploded in reentry
- Condoleezza Rice: first female Black American secretary of state
- Federal Reserve: lowered interest rates led to a housing crash and Great Recession
- President Barack Obama: first Black American president
- Affordable Care Act: national healthcare insurance called Obamacare became law
- Tea Party: a conservative political group
- Hurricane Katrina
- Technology in the 2000s: hybrid automobiles, social media, smartphone
- Navy SEAL Team 6: soldiers who found Osama bin Laden
- Obama declared the end of the War in Iraq
- Obama's visit to Cuba: hoped to improve relations between countries
- President Donald Trump elected 2016
- Trump created stricter immigration limits
- Kilauea volcano: eruption in Hawaii
- Kim Jong-Un: Communist North Korean leader who met with President Trump
- U.S. embassy in Israel: Trump moved to Jerusalem
- Trump impeachment: found not guilty
- COVID-19 pandemic: quarantine, social distancing, development of vaccines
- Civil unrest during pandemic: George Floyd, public response
- President Joseph F. Biden won 2020 Presidential election
- Trump believed election was not conducted correctly
- Breaching of the Capitol Building; first time since the War of 1812
- President Biden inauguration
- Trump second impeachment: not guilty verdict
- Biden's goal of COVID-19 immunization met
- Biden takes U.S. troops out of Afghanistan; Taliban remained in control
- Challenge to students to take their place in history

State History Study

- 6 weeks of lessons including the following:
  - Political and physical maps, region, border states, climate, weather, population, latitude, longitude
  - Symbols: flag, motto, seal, nickname, flower, bird, tree, song, additional symbols
  - State history: native people groups, early colonization/settlement, historical figures, war heroes, military bases, famous landmarks, timeline
  - State government: leaders, state constitution, hierarchy of leaders
  - State industry, agriculture, natural resources
  - Cities: state capital, my city, my county, local leaders, educational institutions
  - Additional information: wildlife, plant life, sports, vacation spots, recreational spots, state/national parks, cultural heritage, museums, travel brochure

Document Recitation

- Gettysburg Address
- First Amendment to the Constitution
- States/Capitals
- U.S. presidents

Geography Study

- Maps, map key, map grid, distance scale, compass rose
- Cardinal and intermediate directions
- Hemispheres: Northern, Southern, Western, Eastern
- Seven continents; five oceans
- Lines of Latitude: Arctic Circle, Tropic of Cancer, Equator, Tropic of Capricorn, Antarctic Circle
- Lines of Longitude: Prime Meridian

History & Geography cont.

Study of North America

- Bay: Hudson Bay
- Canal: Panama Canal
- Gulf: Gulf of Mexico
- Seas: Caribbean Sea
- Rivers: Colorado River, Mississippi River, Missouri River, Ohio River, Rio Grande, St. Lawrence River
- Great Lakes: Lake Erie, Lake Huron, Lake Michigan, Lake Ontario, Lake Superior
- Mountains: Rocky Mountains, Appalachian Mountains
- Deserts: Mojave Desert, Chihuahuan Desert, Great Basin Desert, Sonoran Desert
- Countries: Canada, Central America, Cuba, Dominican Republic, Greenland, Haiti, Jamaica, Mexico, Puerto Rico, San Salvador, United States

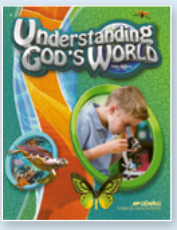
Topography and Geographical Terms

- Terms related to rivers: river, source, waterfall, mouth, delta, upstream, downstream
- Terms related to other bodies of water: sea, bay, gulf, lake, harbor, canal, channel
- Terms related to land: mountain, hill, valley, plain, mountain range, peak, isthmus, canyon, gorge, volcano, geyser, desert, oasis, marsh, island, peninsula, horizon, altitude, sea level

Physical and Political maps

- U.S. Maps: regions, states/capitals, territories
- 13 original colonies; U.S. expansion
- Inviting review sheets

Science



From the starry heavens to the ocean depths, *Understanding God's World* takes students on a journey to discover the Creator's detailed design in the world around them. Your students-turned-scientists will hone their observation and critical thinking skills through a variety of activities that bring learning to life. Over seventy different demonstrations and activities show students how broad scientific concepts relate to their daily lives. On their journey, students will become botanists that identify and dissect plants, meteorologists that track and interpret weather patterns, and ornithologists that attract birds to their own backyards. Demonstrations paired with detailed illustrations help students understand abstract concepts such as matter, energy, force, and motion. Comprehension checks and Chapter Checkups throughout the text ensure that students are retaining key information.

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

Added Enrichment

- Hands-on learning activities in daily lessons
- Worksheets/Activities/Experiments/Journal in STEM Activities (69)

Evaluation

- Quizzes (21)
- Tests (6)
- 9-weeks exams (3)

Science Foundations (Unit 1)

Scientific Process

- Father of scientific method: Sir Francis Bacon
- Scientific method: observe and ask questions, form a hypothesis, experiment and gather data, study data and reach conclusions
  - Terminology: observe, hypothesize, experiment, data, conclude, evidence, technology
- Learning to observe:
  - Use senses: taste, touch, sight, hearing, smell
  - Things to observe: leaves, caterpillars, shells, fruits, rocks, feathers, animal tracks, seeds
  - Tools for observation: notebook paper, pencil, camera
- Making predictions/designing experiments
  - Forming a hypothesis or prediction: begin with testable question
  - Fair experiment: include independent variable, controlled variable, dependent variable
- Recording and graphing data
  - Tools: computer programs, paper, pencil, camera
  - Graphs: circle graph—sector, bar graph—interval, line graph—point, trend
- Learning laboratory procedures
  - Where scientists work: laboratory
  - Science tools: goggles, gloves, mask, clocks, timer, stopwatch, metric system, thermometer, scale, ruler, beaker, flask, test tube, funnel, eyedropper, hand lens, microscope, binoculars, telescope

Activities & Demonstrations

- Observe to understand nature
- Grow plants from seeds for observation
- Jr. Scientist: the scientific method

Understanding Matter and Energy

- What is matter?
  - Substance of physical world
  - Real, has weight, takes up space
  - Made up of molecules and atoms
  - What is energy?
    - Ability to do work
    - Types: light, heat (thermal), sound
- Three states of matter: solid, liquid, gas
- Properties of matter
  - Physical properties are observable and measurable (size, weight, mass, volume, density).
  - Volume and mass
  - Weight and density
- Heating and cooling matter
  - Water's melting/boiling points—32°F, 212°F
  - Effects of heat energy on different states
- Mixtures
  - Types: solutions
  - Parts of solution: solvent and solute
  - Process: solvent dissolves solute
- Energy forms: potential and kinetic
  - Converted energy—fuel
  - Transferred energy—heat, light, sound, and electrical
- Static electricity
  - Atom parts: nucleus, electrons
  - Opposite charges attract.

Science *cont.*

Understanding Matter and Energy *cont.*

- ➤ Current electricity
  - ➤ Flows along path
  - ➤ Generator converts mechanical energy to electrical energy
  - ▪ Cables, conductors, insulators, currents, closed and open circuits, switch
  - ▪ Electrical storm safety
- ➤ Light-wave energy
  - ➤ Luminous, travels in straight line, travels faster than anything else
  - ➤ Examples: stars, light bulbs, fire, certain sea creatures, fireflies
  - ➤ Wave energy: how light travels
    - ➤ Parts of wave: crest, trough, amplitude
- ➤ Transmitting light
  - ➤ Opaque, transparent, translucent materials
  - ➤ Shadows and reflections
- ➤ Bending light
  - ➤ Refraction, wavelength, color spectrum, prism
- ➤ Sound-wave energy
  - ➤ Vibrations
  - ➤ Sound travels through matter
  - ➤ Sound cannot travel through empty space
- ➤ Volume and Pitch
  - ➤ Volume: loudness or softness of a sound; amplitude measures strength of sound wave
  - ➤ Pitch: highness or lowness of sound; faster vibrations make higher pitches; slower vibrations make lower pitches

Activities & Demonstrations

- ➤ Make a water molecule model.
- ➤ Show that matter takes up space.
- ➤ Observe to understand matter.
- ➤ Jr. Scientist: compare density by testing objects that sink and float.
- ➤ Design a buoyant object.
- ➤ Observe surface tension.
- ➤ Observe a heat energy transfer.
- ➤ Observe mixtures.
- ➤ Observe to understand energy.
- ➤ Observe the push and pull of static electricity.
- ➤ Make a miniature generator.
- ➤ Convert stored electrical energy into light energy.
- ➤ Classify materials according to light transmission.
- ➤ Observe the effects of sound vibrations.
- ➤ Amplify sound.
- ➤ Observe high and low pitch.
- ➤ Scientist Corner—Alexander Graham Bell: Inventor of the Telephone

Understanding Force and Motion

- ▪ Forces that affect motion
  - ➤ Motion: a change in position
  - ▪ Force: push or pull on an object
  - ▪ Work: when something has been moved; result of force
  - ▪ Types: friction, gravity, weight, magnetism
  - ▪ Balanced/unbalanced forces
- ▪ Motion needs force
  - ➤ Laws of motion: discovered by Isaac Newton, designed by God
  - ▪ Inertia
- ➤ Motion has energy.
  - ➤ Mass, speed, direction are all part of moving energy.
  - ➤ Collisions: What happens?
    - ➤ Some energy is usually transferred, causing a change in speed.
    - ➤ Some energy is converted to other forms of energy (sound/heat)
- ▪ Electromagnetic forces
  - ▪ Magnetism: force that attracts/repels
  - ▪ Polarity
  - ➤ Electromagnet parts: coiled wire, metal core, source of electricity; Earth is electromagnet.
- ▪ Overcoming friction
  - ▪ Machines: wheel and axle, inclined plane
  - ➤ Lubricant minimizes friction.
- ▪ Gravitational forces
  - ➤ Sir Isaac Newton—gravity experiments
  - ▪ Gravity is pulling force.
  - ▪ Weight determined by object's mass
  - ➤ Center of gravity: where pull of gravity is strongest in object; different shapes equal different centers of gravity.
- ▪ Overcoming weight and gravity
  - ▪ Engineering strong structures with foundations/frames
  - ▪ Types of support structures: arch, dome, column, triangle design
  - ▪ Machines that overcome weight/gravity: inclined plane (screw), wedge, pulley, lever
  - ▪ Parts of lever: load, fulcrum

Activities & Demonstrations:

- ➤ Observe to understand force and motion.
- ➤ Observe a marble collision.
- ➤ Make an electromagnet.
- ➤ Use machines to overcome friction.
- ➤ Determine the center of gravity.
- ➤ Make a square frame more stable by adding triangles.
- ➤ Construct a pulley to overcome weight and gravity.
- ➤ Construct a catapult.

Life Science (Unit 2)

Understanding How Plants Grow and Reproduce

- ▪ God's purposes for plants: beauty, produce food, give off oxygen, improve soil
  - ▪ Process of photosynthesis in green plants
  - ▪ Types of organisms: producers/consumers
  - ➤ Leaf litter, humus
- ▪ Identifying trees
  - ▪ Parts: crown, trunk, bark, roots, annual rings
  - ➤ Types:
    - ➤ Needleleaf: evergreen, conifers
    - ➤ Broadleaf: deciduous, fruit
    - ➤ Palms: no branches, annual rings, or bark
- ▪ Observing flowers
  - ▪ Purpose: to produce seeds
  - ➤ Parts: sepals, petals, stamens, pistil
  - ▪ Process of pollination
- ➤ Identifying flowers
  - ➤ Composite family: ray flowers, disk flowers
  - ➤ Weeds
- ➤ Seeds designed for travel
  - ➤ Types: airborne and windblown seeds, water-traveling seeds, hitch-hiker seeds, self-scattering seeds
- ▪ Seed design and germination
  - ▪ Parts: embryo, stored food, seed coat
  - ▪ Dormancy, germinate
  - ▪ 3 things a seed needs to germinate: water, oxygen, right temperature
  - ➤ Growing seed parts: primary root and shoot

Science *cont.*

Understanding How Plants Grow and Reproduce *cont.*

- Plants without seeds
  - Algae, ferns, mosses
  - Green plants that grow from spores: ferns and mosses
  - Plant-like organisms grown from spores: fungi and bacteria
  - Decomposers: mushrooms, toadstools, lichen, yeast, mold

Activities & Demonstrations:

- Observe to understand trees
- Dissect a lily
- Identify, research, and observe your state flower
- Jr. Scientist: the scientific method with photosynthesis
- Observe the three parts of a seed
- Observe germination
- Observe bacteria decompose lettuce
- Scientist Corner—Dr. George Washington Carver: The Plant Doctor

Understanding Animal Design

- A variety of vertebrates:
  - Animal classification:
    - Vertebrates: backbone, inside skeleton, five classes grouped by warm-blooded/cold-blooded
      - Warm-blooded vertebrates: maintain thermal energy; two classes—mammals, birds
      - Mammals/Birds: characteristics, breathe oxygen with lungs, life cycle
      - Cold-blooded vertebrates: three classes—fish, amphibians, reptiles
      - Fish: use gills to breathe, streamlined bodies, life cycle
      - Amphibians: instinct, life cycle, smooth/moist skin
      - Reptiles: life cycle, leather-like eggs, dry/scaly skin
- Observing bird design
  - Evolution, species
  - Beaks/bills: seed eating, insect eating, nectar drinking, birds of prey, predator/prey, spearfishing, pouches
  - Feet: perching, running, swimming (webbed), wading, talons
- Engineered for flight
  - Streamlined, lift
  - Bird bones: hollow, affects balance in flight, helps control body temperature
  - Feathers: only animals with feathers, down
  - Why birds don't get tired: two breaths moving through body at same time, digestive system processes food very quickly for energy to fly, gizzard helps with digestion
  - Seeing and Hearing: ears located inside head, sharp sense of sight, transparent eyelids
- Birds in your backyard:
  - Types: robin, cardinal, mockingbird, blue jay, hummingbird
  - Characteristics, beaks/bills, feet, habitats
- Birds of the world
  - Types: penguin, ostrich, parrot, flamingo
  - Characteristics: extinct animals, incubate, habitat, beak/bills, feet
- Bird feeders and birdbaths
  - Feed birds in fall and through winter, limit feedings during spring/summer
  - Types of feeders: hummingbird, suet, finch
  - Keep birdbaths clean, avoid metal as a material for building a birdbath
- Interesting invertebrates: animals without backbones
  - More invertebrate species than vertebrates
  - Insects are invertebrates.
  - Characteristics: exoskeleton, molting, antennae, no backbone, weak muscles, soft bodies, cold-blooded
  - Types: segmented worms, unsegmented slugs, snails, octopuses, squids
  - Segments, setae, jet propulsion, tentacles
- Unusual invertebrates
  - Stinging: corals, jellyfish, sea anemones
  - Colonies, symbiotic relationships
  - Spiny: starfish, sea urchins
  - Arthropods: largest group is insects
- Observing insect design
  - Characteristics: exoskeleton, three body parts, six jointed legs
  - Body parts: head, thorax, abdomen
  - Head: two antennae, compound/simple eyes, varied mouthparts by design
  - Thorax: six jointed legs, wings
  - Abdomen: contains heart and stomach, spiracles for breathing
- The miracle of metamorphosis
  - Complete metamorphosis: 4 stages—egg, larva, pupa, adult; most insects undergo complete metamorphosis
  - Incomplete metamorphosis: 3 stages—egg, pupa, adult
  - Insect homes/hatchings: parasite/host, parasitic relationship
- Insect instincts and equipment
  - Communication: sight, smell, touch, dancing, sound
  - Defense: weapons, fear, disguises, camouflage, mimicry
- Social insects
  - Communities: ant nests, beehives, paper wasp nests, termite mounds and tunnels

Activities & Demonstrations:

- See how birds use their God-given mouth structures.
- Observe to understand birds.
- Demonstrate lift.
- Identify, research, and observe your state bird.
- Make a suet feeder.
- Build a birdhouse.
- Observe jet propulsion.
- Create an insect zoo.
- Create an ant farm.
- Scientist Corner—Jean-Henri Fabre: The World's Greatest Entomologist

Understanding Ecosystems at Work

- What makes a habitat?
  - Habitat: natural home of plant or animal
  - Four things each habitat must have: space, shelter, water, food
  - Habitat location determines living/nonliving factors
    - Climate components: determined by sun's light/heat energy, water, air and its gases; altitude affects climate
    - Earth components: soil type, rocks and minerals
      - Soil layers: topsoil, subsoil
      - Rock: made of minerals, salinity
- What is an ecosystem?
  - Ecosystem communities: contain living and nonliving parts
  - Niche
  - Living parts: organisms—animals, plants, bacteria, fungi
  - Nonliving parts: water, sunlight, air and its gases, temperature, soil, rocks and minerals
  - Backyard ecosystems can vary by climate and season.

Science *cont.*

Understanding Ecosystems at Work *cont.*

- What is a food chain?
  - Transfer of energy from one living thing to another for survival
  - From sunlight energy to plant producers, plant consumers/herbivores, omnivores, carnivores, apex predator, decomposer
  - Healthy ecosystem is balanced
  - All energy is used or transferred in a food chain
  - Backyard food chain: varies according to season
- Forest ecosystems
  - 3 main kinds of forests: coniferous, temperate, rainforest
  - Forest environment: permafrost, tundra, tree line
  - Coniferous: most commonly found forest; thrive in differing temperatures
  - Temperate: grow in climates that have four seasons
  - Tropical rainforests: grow where there is much rain year round; highest level of biodiversity
    - Rainforest layers: emergent, canopy, understory, forest floor
  - Migration, hibernation
- Grassland ecosystems: large, flat, open area of grasses
  - Savanna environment: tropical grassland
    - Characteristics: two seasons—long, dry season and short, wet season
    - Life in savanna: decomposers, grazers, browsers, scavengers
- Desert ecosystems
  - Desert environment: dry, arid land with little plant growth
    - Characteristics: less than ten inches of rain per year, extreme temperatures
    - Gobi Desert: cold, flat plain; rocky soil; Bactrian camel; snow leopard; jerboa; golden eagles
    - Sahara Desert: hottest desert in world, mountains, sand dunes, gravelly soil, gazelles, foxes, baboons, hyenas, mongooses, venomous reptiles, oasis
    - Antarctic Desert: unique because covered in ice
    - Desert life:
      - Lowest level of biodiversity
      - Animals: birds, mammals, reptiles, arthropods, specially designed amphibians, nocturnal organisms/animals
      - Plants: cactus, thorns, spines, designed to store much water
- Polar ecosystems
  - Polar environment: frigid, polar habitat
    - Characteristics: two seasons—summer, winter; covered with polar ice cap, glaciers, icebergs, ice shelf, Ice Age
    - Life in Antarctica: scientists who live there temporarily, plankton, phytoplankton, zooplankton, krill, whales, seals, fish, penguins, orcas
    - Instincts, migration, insulation, blubber
- Saltwater ecosystems
  - Ocean environment: ocean basin, continental shelf, trenches, abyssal plain
    - Characteristics: temperature and habitats depend on depth and location, gravity causes tides, Earth's rotation shapes floor, salinity affects movement
    - Life in ocean: ocean zones
      - Sunlight zone—most life because of photosynthesis
      - Twilight zone—only blue light, no plant life, only animals
      - Midnight zone—no light, some sea animals
      - Abyss—deepest, darkest zone
    - Ocean trenches are deeper than abyss, and earthquakes often happen near them
    - Ocean food chains:
      - Phytoplankton: main producers of ocean
      - Kelp: type of algae, can form kelp forests
      - Zooplankton: feed on phytoplankton
      - Fish use gills to remove oxygen from water and return carbon dioxide to ocean
- Freshwater ecosystems
  - Freshwater environment: have little salt, water source for many animals, resupplied by precipitation and water run off, wetlands covered in water for part of year
    - Freshwater flows through mouth, delta, estuary, wetlands
    - Everglades environment: largest freshwater habitat in world
      - Characteristics: tropical ecosystem with two seasons—wet, dry
      - Life in Everglades: sawgrass, Cypress trees, mangrove forests, whirligig beetle, dragonfly, turtles, water moccasins, rattlesnakes, alligators, egret, ibis, roseate spoonbill, manatee, cougar, black bear
- Wetland Case Study 1: An Invasive Species
  - How Burmese pythons have affected the Everglades ecosystem
- Wetland Case Study 2: Stewardship and Conservation
  - How pollutants affect water sources
- Biblical Perspective of Conservation
- Wetland Conservation Discussion
  - Positive/negative effects of conservation

Activities & Demonstrations

- Create a shoebox diorama.
- Observe to understand an ecosystem.
- Producers and consumers.
- Create a rainforest terrarium.
- Observe iceberg buoyancy concepts.
- Observe oxygen dissolved in water.
- Construct a model of the ocean's zones.
- Watch a leaf "breathe."

Earth and Space Science (Unit 3)

Understanding the Earth and Its Foundations

- Geology: the study of the earth
  - Geologists: scientists who study the earth
  - Views of geology: evolution, creation in six days, worldwide Flood
- The circle of the earth
  - Earth's shape: sphere, equator, Northern/Southern hemispheres, Prime Meridian, diameter, latitude, longitude, slightly flattened at poles
  - Earth's layers:
    - Crust: continental, oceanic
    - Mantle: made mostly of solid, hot, dense rock and magma, 1,800 miles deep
    - Core: innermost part of Earth, hottest place in or on the earth
- Water and Land
  - Earth's water: more than 70% of Earth covered in water, oceans are largest bodies of water
    - Five oceans: Pacific, Atlantic, Indian, Arctic, Southern
    - Groundwater: found beneath Earth's surface, supplies springs and wells
  - Earth's land:
    - Seven continents: Asia, Africa, North America, South America, Antarctica, Europe, Australia
    - Crustal plates: large areas of Earth's crust, geological events occur where plates meet
      - Earthquakes happen along fault.
      - Volcanoes: eruption of magma as lava, Ring of Fire, dormant, extinct

Science *cont.*

Understanding the Earth and Its Foundations *cont.*

- Landforms: natural formation of rock or soil on Earth's surface
  - Types: volcano, mountain, hill, valley, waterfall, river, plain, canyon, peninsula, island, lake, marsh, desert, oasis
  - Mountain types: folded, fault-block
- Soil and its horizon layers
  - Soil's ingredients:
    - Humus: soft organic material made from decayed remains
    - Minerals: tiny pieces of rock, never manmade, same kinds of atoms, always in precise pattern that forms crystal; gems—rare, valuable minerals
  - Soil variation: color varies due to mineral content
  - Soil components:
    - Loam: mixture of sand (large particles), silt (medium-sized particles), and clay (fine particles)
  - Soil horizons: humus, topsoil, subsoil, bedrock
- Water affects soil.
  - Soil erosion and weathering of rock
    - Erosion: loss of soil by water or wind, gravity, and water runoff
    - Weathering: rocks are broken down by forces of nature.
  - Soil conservation: contour plowing, terraced fields
  - Soil building: sediment makes soil more fertile.
- Geological events that change the earth's surface.
  - Earthquakes: most likely to happen at a fault, focus, tremor, epicenter, can cause tsunami, earthquake safety
  - Volcanoes: eruption of hot liquid magma, vent, lava, can cause new landforms
- Properties of rock:
  - Visible properties: color, luster, texture
  - Testable properties: hardness (scratch test), density, cleavage (fracture), streak test
- Three types of rocks:
  - Igneous: pumice, obsidian, granite
  - Sedimentary: sandstone, limestone, shale
  - Metamorphic: marble, slate
- Fossils in rocks
  - Found in sedimentary rock that has hardened
  - Transitional forms: when one kind of animal could have turned into another kind, never found
- Earth's energy sources
  - Fossil fuels: coal, oil, natural gas
  - Nonrenewable energy source: fossil fuels that are burned up and cannot be used again
  - Renewable energy sources: cannot be used up
    - Wind: windmills generate electrical energy.
    - Water: hydropower—water energy is converted into electrical energy.
    - Solar energy: light and heat energy from sun converted into electrical energy.
  - Caring for Earth's resources: biblically care for/manage natural resources
- Renewable Energy Discussion
  - Comparing positive/negative effects of solar, wind, water power
- Geological Case Study: Mt. Saint Helens
  - Effects of volcanic eruption on surrounding ecosystems
- God's Promise
  - Worldwide Flood and God's promise to Noah not to flood the entire world again

Activities & Demonstrations

- Observe to understand landforms
- Measure the circumference of a sphere.
- Demonstrate how folded mountains may have formed.
- Make crystals.
- Demonstrate the pushing force of frozen water.
- Design an earthquake-resistant structure.
- Construct a "volcano."
- Test a rock for cleavage or fracture.
- Make sedimentary "rock" layers.
- Make a "fossil."

Understanding Weather

- The atmosphere and weather
  - Weather occurs in atmosphere.
    - Climate is weather conditions certain areas receive over time.
    - Weather is condition of air closest to Earth.
    - Air is mixture of colorless, odorless, tasteless gases.
    - Atmosphere—air surrounding Earth.
    - People, plants, animals depend on air to live.
  - Gases in the atmosphere
    - Air made up of different gases—oxygen, nitrogen, other gases
  - Levels of atmosphere
    - Gravity keeps atmosphere in place; densest air is closest to Earth
    - Lower atmosphere: greatest density of gases, where weather happens, conditions are always changing
    - Middle atmosphere: conditions stay same, ozone layer that protects Earth from sun, some types of planes can fly here
    - Upper atmosphere: lowest density of gases, temperature is high, air thins until outer space begins, satellites orbit Earth here
- Air's weight
  - Air has weight: air is matter—it takes up space/has weight.
- Air has pressure.
  - Pressure: measurement of the force exerted against an object.
  - Gases have weight and can exert pressure.
  - Balance of force of pressure between our bodies and air.
- Air pressure changes.
  - Air pressure decreases as you travel higher in atmosphere.
  - Air pressure near Earth varies.
  - Changes in lower atmosphere cause weather events.
  - Cold air is heavier than warm air.
  - Meteorologist: scientist who studies weather, watch for air pressure changes
  - Barometer: weather instrument that detects air pressure changes
  - Meteorologists can predict precipitation by monitoring air pressure.
  - Forecast: weather prediction
- Moving air
  - Air has temperature.
    - Air is transparent, allowing sunlight energy to pass through to Earth
    - Sunlight energy is converted to heat energy and absorbed by land and water.
    - Earth absorbs heat during day/radiates heat at night.
    - Greenhouse effect: atmosphere's ability to keep heat from easily escaping into space
  - Temperature and pressure cause wind.
    - Part of Earth tilted toward sun receives most heat, causing air to be warmer
    - Uneven heating of air is reason for wind.

Science *cont.*

Understanding Weather *cont.*

- Warm air rises because it is less dense, leaving area of low pressure near Earth's surface.
- Cooler denser air flows into low pressure area to replace warm air.
- Wind: constant motion of air

› Wind has direction and speed.
- › Wind named for direction it blows from
- › Measure power of wind by speed
- › Meteorologists make different predictions based on wind.
- › Global winds: bands of wind that flow in predictable patterns, help regulate Earth's air temperatures, blow in different directions at certain latitudes
- › Jet stream: collision high above Earth creates a band of wind that flows from west to east around globe, causes weather systems to move in predictable pattern (west to east, up and down)
- › Types of wind
  - › Seasonal: change when seasons change
  - › Local: predictable in certain areas
  - › Storm: occur during thunderstorms, hurricanes, tornadoes

- Water in the air
  - Gaseous water/water vapor always in air
  - Water is given off by plants, people, animals.
  - Most water vapor comes from water sources on Earth.
  - Humidity is water.
    - Humidity: amount of water vapor in air
    - High humidity means a lot of water vapor in air.
    - › Temperature affects humidity.
    - › Warm air holds more water vapor than cool air.
    - › Relative humidity: measure of amount of water vapor in air
    - › Hygrometer: weather instrument used by meteorologists to measure humidity levels
    - › Meteorologists forecast weather based on level of humidity.

› Clouds are made of water.
- › Clouds are matter—made mostly of water and air.
- › Kinds of clouds have different ranges of heights.
- › Fog: cloud at ground level
- › Clouds high in sky: made of ice crystals
- › Clouds low in sky: made of tiny water droplets

- The water cycle
  - Continuous process of earth and atmosphere exchanging water
  - Four main processes:
    - Evaporation: liquid water becomes water vapor
      - Sun's energy controls water cycle.
    - Condensation: water vapor begins to turn back into tiny droplets of liquid water
      - Water condenses on particles of dust, causing clouds to form.
    - Precipitation: any form of water falling from sky to earth; rain, snow, sleet, hail
    - Water runoff: precipitation that eventually trickles into streams
- Severe weather phenomena

› Weather phenomenon: weather event caused by specific conditions
- Thunderstorms: bring heavy rain, strong winds, lightning
  - Contain thunderheads, updrafts/downdrafts, lightning bolts
  - Thunder is sound caused by lightning when it heats air.
  - › Thunderstorms move from west to east in United States.

› Tropical cyclones
- › Cyclone: storm that begins to rotate around low-pressure area (eye)
- › Begins over warm, tropical seas
- › Typhoons: Pacific tropical storms moving toward Asia
- › Hurricanes: tropical cyclones in Atlantic moving toward North America; most severe type of tropical cyclone
- › Usually form during hot summer
- › Categories of storms: tropical disturbance, tropical depression, tropical storm, hurricane
  - Hurricanes get energy from warm ocean.
  - › Storm surge: rise of ocean water surrounding a hurricane
  - › Tropical cyclones travel from east to west.

- Other weather events
  - Tornado: cyclone that develops over hot land
    - › Tornado watch: conditions are right for tornado formation
    - › Tornado warning: tornado has been spotted
  - › Blizzards: severe snowstorm, causing colder temperatures, strong winds, blowing snow; moves from west to east
  - › Monsoons: seasonal wind that can bring heavy rain to places in southern Asia
  - › Flooding and Drought
    - › Drought: prolonged period of dryness
    - › Famine: shortage of food
    - › Flooding: overflow from rivers and other bodies of water, causing water to cover areas that are usually dry land

› Weather forecasting
- › Knowing and understanding God's laws of nature about weather
- › Gathering data
  - › Data comes from weather observation stations.
  - › Radar, planes, ships, weather balloons used to gather data
  - › Meteorologists measure: temperature, air pressure, humidity, precipitation, wind direction, wind speed
  - › Weather instruments: hygrometer, anemometer, rain gauge
- › Predicting the weather
  - › Short-range and long-range (extended) forecasts
  - › Air masses, cold and warm fronts, weather maps

Activities & Demonstrations
- › Observe to understand the sky.
- › Observe air pressure.
- › Make a barometer.
- › Make a weathervane to observe wind direction.
- › A week of weather
- › Observe to understand clouds.
- › Observe condensation.
- › Make a rain gauge.
- › Measure a snowfall.
- › Demonstrate that thunder is the sound of air caused by lightning's heat.
- › Scientist Corner—Robert Boyle: The Father of Chemistry

Understanding the Great Expanse of Outer Space

- The wonders of the night sky
  - Galaxy, Milky Way
- The beauty of the solar system
  - Solar system: sun and heavenly bodies orbiting it
  - Eight planets: orbit the sun
    - Inner planets: Mercury, Venus, Earth, Mars
    - Outer planets: Jupiter, Saturn, Uranus, Neptune
- How movement determines time
  - Day, night, and Earth's rotation
    - Axis, rotates from west to east, sundial

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

Science *cont.*

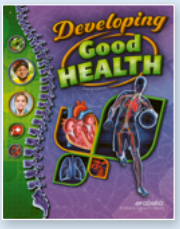
Understanding the Great Expanse of Outer Space *cont.*

- Year and Earth's revolution
  - Revolve, length of year, leap year, 24-hour day
- Earth's tilt and seasons
- Months and the moon's revolution
- Constellations
  - The Big Dipper, Great Bear, Little Dipper, Leo the Lion, Herdsman, Southern Cross, Orion
  - ➤ Stars: Regulus, Denebola, Arcturus
- Navigation and the stars
  - ➤ GPS (Global Positioning System)
  - ➤ Navigational instruments: sextant, horizon, astrolabe, compass
  - The North Star: Polaris or Pole Star
- The sun: the greater light
  - Light that rules the day: average-sized star
  - Made of hot, glowing gases
  - Avoid looking directly at it
  - Sun's energy: steady, light and heat energy
  - Cannot be explored with spacecraft because of heat
  - ➤ Light travels at 186,000 miles per second
  - Sun's gravity keeps planets in their orbit
- The moon: the lesser light
  - ➤ Luminous/nonluminous objects, reflected light, illuminated objects
  - Earth's only natural satellite
  - ➤ Lunar cycle: new moon, crescent moon, quarter moon, gibbous moon, full moon, gibbous moon, quarter moon, crescent moon, new moon
  - Length of cycle: about thirty days; gives us our months
- Space discovery
  - ➤ Galileo: used spyglass to observe Earth's moon; discovered Jupiter's moons
  - ➤ Exploring the moon
    - ➤ NASA (National Aeronautics and Space Administration): flight and space agency of the United States
    - ➤ Apollo 11 crew landed on moon: Neil Armstrong, Buzz Aldrin
    - ➤ Space rocket: propulsion engine to launch spacecraft into space
    - ➤ Armalcolite: type of moon rock named for three Apollo 11 astronauts
  - Exploring solar system and beyond
    - Space probes: *Voyager 1* and *Voyager 2*
    - ➤ Interstellar space
    - ➤ Space shuttle: reusable spacecraft
    - ➤ Challenger mission
    - ➤ Sally Ride, Guion Bluford, Christa McAuliffe
    - Space station
    - ➤ SpaceX, SpaceX Dragon capsule, reusable Falcon 9 rocket, Bob Behnken, Doug Hurley
  - Origin of the universe
    - Genesis 1 account of Creation
    - God is Designer/Creator of universe

Activities & Demonstrations

- ➤ Observe to understand the night sky.
- ➤ Create a relative model of the solar system by size.
- ➤ Discover the cause of day and night.
- ➤ Discover why winter is cold.
- ➤ Connect the stars.
- ➤ Discover why stars shine more brightly at night.
- ➤ Construct a star viewer.

Health



Through the new *Developing Good Health*, students will be amazed at God's intricate design of five different body systems. Practical instruction on fitness, nutrition, hygiene, and safety will equip students to improve their physical health. Thoughtful biblical guidance on right relationships with God and others will help students develop their spiritual, mental, and social health. Health continues with practical demonstrations and experiments to enhance the study of the human body.

Added Enrichment

- Comprehension Checks; Chapter Reviews
- Additional Enrichment/Hands-On Activities
- Worksheets

Evaluation

- Quizzes (7)
- Tests (3)

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

Developing a Healthy Life

- ➤ A miraculous masterpiece
  - ➤ Anatomy
  - ➤ The whole you
  - ➤ Health
  - ➤ Honoring God by caring for your health

Your Communication Network

- ➤ Coordinating the whole body
  - ➤ The body's systems
  - ➤ Cells, tissue, organ, system
  - ➤ Your nervous system
  - ➤ The central nervous system
  - ➤ Brain, spinal cord, reflex
  - ➤ The peripheral nervous system
- ➤ The brain
  - ➤ Parts of the brain
  - ➤ Cerebrum, cerebellum, brain stem
  - ➤ Neurologist
  - ➤ Epilepsy, seizure
- ➤ Nerves at work
  - ➤ Sensory nerves and motor nerves
  - ➤ Olfactory nerves, taste bud
  - ➤ Parts of the eye
  - ➤ Sclera, cornea, pupil, iris, lens, retina, optic nerve
  - ➤ Parts of the ear

Health cont.

Your Communication Network cont.

- Outer ear, auditory canal, eardrum, middle ear, inner ear, semicircular canals, cochlea, auditory nerve
- Caring for your nervous system
  - Food as fuel
  - Exercise and rest
  - Protecting your nervous system
  - Drug

Your Transportation System

- A trip around the body
  - The circulatory system
  - Heart, blood vessels
  - Parts of the blood
  - Plasma, antibodies, red blood cells, white blood cells, platelets
- The heart
  - Cardiac muscle
  - How the heart works
  - Four chambers
  - Atrium, ventricle, septum
- Cardiologist
  - Pulse, blood pressure
- Routes of travel
  - Arteries, veins, and capillaries
  - Carbon dioxide
  - Circulation
- Caring for your circulatory system
  - Heart-healthy nutrition
  - Making your heart strong
  - Endurance
  - Managing asthma
  - Protecting your circulatory system
  - Nicotine, air pollution

Your Body's Defenses

- Designed for defense
  - The immune system
  - Immunity
  - Pathogen invaders
  - Microorganisms, pathogen, bacteria, viruses
  - Diseases: communicable and noncommunicable
  - When to seek health care
  - Fever
- Protective barriers
  - A strong outer protection
  - Skin, epidermis, dermis, sebum
  - Gates and gatekeepers
  - Mucus, cilia
- The army inside you
  - White cell warriors
  - Phagocyte, lymphocyte
  - Immunity
  - Vaccine
- The cleanup crew
  - The lymphatic system
  - Tissue fluid, lymph, lymph nodes
  - Organs of the lymphatic system
  - Tonsils, adenoids, spleen, thymus
  - Allergies
  - Allergist, anaphylaxis
- Caring for your immune system
  - Prevention through proper care
  - Prevention by stopping the spread of pathogens

Fuel for a Healthy Body

- Digestion and nutrition
  - The digestive system
  - Digestion, nutrition, mouth, saliva, enzymes, esophagus, stomach, small intestine, villi, large intestine
- Nutrients which give energy
  - Essential nutrients
  - Carbohydrates, protein, fats, and oils
  - Managing diabetes
  - Water
- Nutrients which protect and regulate body systems
  - Vitamins
  - Minerals
  - Pediatrician
- A balanced diet
  - Five food groups
  - Healthy eating habits
- Food labels and food safety
  - Reading food labels
  - Serving size, calories
  - Food safety
  - Food storage, perishable foods, food preparation

Exercise for a Healthy Body

- Designed to move
  - The skeletal system
  - Skeleton
  - Designer bones
  - Clavicle, sternum, scapula, rib cage, humerus
  - Inside a bone
  - Designer joints
- Hinge joints, ball-and-socket joints, pivot joint, ligament, skull, cranium, vertebrae, vertebra, phalanges, pelvis, femur, patella
- On the move
  - The muscular system
  - Voluntary muscles, involuntary muscles
  - The skeletal muscles of the muscular system
- Tendons, biceps, triceps, trapezius, abdominal muscles, quadriceps, hamstrings
  - The body's involuntary muscles
- Being active
  - Physical fitness
  - A lifestyle of fitness
  - Training your posture
  - Training your breathing
  - Warming up
  - Stretching
  - Exercising
  - Aerobic exercise, anaerobic exercise
  - Cooling Down

Health *cont.*

Protection for a Healthy Body

- Staying safe
  - Sports safety
    - Concussion
    - Seat belt safety
  - Fire safety
  - Water safety
    - Sun safety
    - Ultraviolet rays, clothing, cream, SPF, cap, cover
- Being aware, alert, and careful
  - Being aware in public places
  - Being alert to danger
  - Being careful around others
  - Being careful about boundaries
- Taking care of injuries
  - First aid, medical emergency
  - Calling 9-1-1
  - Sports injuries
    - Strain, sprain, rest, ice, compression, elevation
    - Burns
    - Hypodermis
    - Bleeding
  - Choking
    - Trachea, Heimlich maneuver
    - Poisoning
    - Poison
- Caring for yourself
  - Adolescence
  - Puberty
  - Hormones
  - Hygiene
    - Skin care, perspiration, acne, hair care, follicles, dental care, enamel, dentin, pulp, plaque, dental caries
- Deciding to say "no!"
  - Alcohol, tobacco, and other drugs
  - Addiction
  - Drug abuse, substance abuse, limbic system
  - How to say "no!"
  - Finding accurate health information

Growth of a Healthy Spirit

- Spiritual life
  - Spiritual birth
  - Spiritual growth
  - Spiritual cleansing
  - Spiritual peace
  - Spiritual development
- Social life
  - Making new friends
  - Being a good friend
  - Communicating with others
  - Resolving conflict with others
  - Avoiding unhealthy friendships
- Growing mentally and emotionally
  - Taking thoughts captive
  - A confident heart
  - A grateful heart
  - A hopeful heart
  - Spirit-controlled emotions
  - Feeling difficult emotions
  - Overcoming anger
  - Conquering fear
  - Dealing with jealousy
  - Grieving a personal loss
  - What to do when you feel sad

Bible

Using the foundation that has been laid from preschool to third grade, fourth graders revisit familiar books of the Bible to make deeper personal applications. Through the study of Creation, students will see how sin entered the world, leaving man in desperate need for a Savior. The study of the triumphs and failures of men like Noah, Abraham, Jacob, and Joseph will give students the opportunity to strengthen their biblical worldview and build their faith through personal application of the Bible. Through the Gospels, the lessons from Jesus' birth, His miracles, and His death, burial, and resurrection will provide the opportunity to accept the free gift of salvation or develop a deeper appreciation for that gift. Students will also see how the message of salvation spread throughout the world through the three missionary journeys of Paul. Biblical worldview truths from these lessons are naturally highlighted in the correlated songs, verses, and doctrinal truths. The *Bible 4 Journal* gives students the opportunity to move from knowledge to application as they read the Bible passages for themselves, answer questions, record personal thoughts, and put into action the lessons learned.

Evaluation

- Graded memory verse passages (8)
- Content quizzes (12)

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

Lessons *405 Abeka Flash-a-Cards*

- Salvation Series (5 lessons)
- Genesis Series (21): Creation, Adam, Cain; Enoch, Noah, Babel; Abraham and Isaac; Jacob; Joseph
- The First Thanksgiving
- Life of Christ Series (36): First Christmas; Boyhood and Early Ministry of Jesus; Jesus Heals and Helps; Later Ministry of Jesus; Crucifixion and Resurrection
- Life of Paul Series 1 and 2 (14)

Music *70 songs*

- Choruses, hymns of the faith, holiday songs, patriotic songs including:
  - ➤ 13 new hymns and songs; 11 new choruses

Bible 4 Journal

- ➤ Personal application of the Bible lessons
- ➤ Discussion/questions strengthen biblical worldview

Memory Work

- ➤ New passages (11) containing 60 verses
- Review verses (74)
- ➤ Books of the Bible, sword drills

Doctrinal Truths *70 questions/answers*

- Increase Bible knowledge of basic doctrines: the Bible, God, sin, salvation, heaven, assurance of salvation
- ➤ 8 questions with verses to memorize as answers

Prayer Time

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

Sword Drills

- 88 Old and New Testament references to find
- ➤ Three sections of references to choose from—weekly, themed, special events

Music

American music reflects the spirit and strength of its people, telling the history of our country's struggle for independence, growth, and expansion. America's rich, colorful legacy is essential to a child's education. *Songs We Enjoy 4* brings together traditional, patriotic, holiday, and fun selections that students have enjoyed singing for generations. The sing-along CD makes song time enjoyable for the students and easy for the teacher.

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

Skills Development *51 songs*

- Follow a song leader while singing with class or CD
- ➤ Define and explain 16 unfamiliar words and phrases in lyrics
- Aid in understanding a song's message
- ➤ Count a steady rhythm in songs
- Enunciate silly words
- ➤ Sing a two-part canon and rounds of 3 or more parts
- Echo singing parts
- Use dynamic contrast in music
- Improve coordination skills through motion songs
- ➤ Learn historical facts through patriotic, folk, and Americana music

Variety of Songs to Memorize

- Folk, fun, patriotic, spirituals and hymns, holiday, Americana, songs at sea

Arts & Crafts

In *Art A,* students practice the fundamental principles of color and perspective using basic drawing, coloring, and painting techniques with colored pencils and watercolors. A decorative calendar begins each monthly selection, and suggestions for interesting variations and further practice stimulate creativity. This art book has been carefully organized and illustrated so that students may work in them independently or as a class.

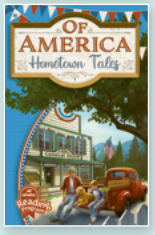
Concept Development *39 projects*

- Primary and secondary colors (14)
- Intermediate colors (4)
- Complementary colors (6)
- Neutral and analogous colors (5)
- Colors of spectrum (3); color wheel (10)
- Perspective (3)

Technique Development

- Drawing: template, freehand, animation (8)
- Modeling (7)
- Painting: wash (2)
- Texture, weaving (4)
- Paper curling, folding, and shaping (5)
- Duplicating (1)
- Proportion (1)
- Motion lines (2)
- Translucent and cut-paper sculpture (5)
- Lettering (13)

Language Arts: Reading



Inspiring nonfiction, relatable modern fiction, humorous plays, and intriguing classics can all be found in the six updated fifth-grade readers. Students will become acquainted with a variety of genres while studying the parts of narrative and informative text structures. Literary enrichment gives practice in recognition, analysis, and application of writing techniques while providing opportunities for collaboration.

Original stories introduce memorable characters such as detective Lucas Miller in an original mystery series carried throughout all the compilations. Classic fiction stories transport readers away to faraway lands, like the Kingdom of Wisdom in *The Phantom Tollbooth*, or to nearby friends, like Ramona from *Beezus and Ramona*. Nonfiction selections inspire readers through the integrity, initiative, and courage of some of history's greatest heroes. Be prepared to see great wonders within the world, be more than conquerors, and develop imagination and understanding in character.

Literary Value

- Well-known authors, including Beverly Cleary, Eleanor Estes, Marguerite Henry, Jack Prelutsky, Wilson Rawls, E. B. White, Kenneth Grahame, Kate Douglas Wiggins, Booker T. Washington, Henry Wadsworth Longfellow
- Story and character-building themes such as problem-solving, humility, wisdom, resourcefulness, empathy, diligence, valor, discretion, discovery, faith, perseverance, courage, forgiveness, gratitude, individuality, contentment, sharing the Gospel, leadership

Materials

- Readers (4) containing:
  - Short stories, poems, plays
  - Informative selections
- Christian fiction novel
- Biographical novel
- Speed and comprehension readers
  - *Reading Comprehension 5 Skill Sheets*
  - *Adventures in Nature*

Evaluation

- Weekly oral reading grades
- Speed and comprehension quizzes for timed silent reading exercises and stories

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

Reading Skills Development

- Read orally and silently with comprehension
- Strive for increasing accuracy, fluency, phrasing, alertness to punctuation, expression, appropriate speed, comprehension, volume, poise
- Vocabulary development through words and definitions
- Development of understanding literary types, terms, and concepts
- Exercise critical thinking through inference, evaluation, analyzation, and personal application—using fact and reasoning in the development of a biblical worldview

Literary Concept Development

- Understanding and applying literary concepts: title, author, character, main character, plot, author's purpose, setting, moral, main idea, stanza, summary, symbolism, climax, autobiography, biography, fiction, nonfiction, drama, cast, stage directions, act, scene, dialogue, inference, point of view—first person, third person, idiom, narrator, rhyme scheme, meter, repetition, alliteration, dialect, simile, metaphor, personification, imagery
- Summarizing plot
- Comparing works of the same author
- Comparing similar works from different authors
- Predicting endings
- Discerning fact from opinion
- Introducing and utilizing literary concepts—protagonist, multidimensional, one-dimensional, secondary characters, characterization, genre, theme, internal rhyme, near rhyme, free verse, blank verse, author's style, theme, jargon, internal monologue, author intrusion, allegory, hyperbole, mood, elements of plot—introduction, rising action, climax, falling action, conclusion, irony, wordplay, word usage, flashback, foreshadowing, elements of a mystery—culprit, distraction, limericks, fact and opinion, narrator, figurative language, historical fiction
- Recognizing and analyzing text structures—narrative, informative nonfiction, descriptive, compare/contrast, problem/solution, cause/effect, sequential, chronological
- Determining point of view—first and third person
- Analyzing characters and setting
- Recognizing genres: realistic fiction, historical fiction, fantasy, biographical stories including autobiographies, folktales, fables, legends, fairy tales
- Distinguishing fantasy from reality
- Charting information: word webs, Venn diagrams, compare/contrast, predict possible outcomes
- Creative collaboration activities for developing critical thinking
- Analyzing illustrations and photos
- Interpreting figurative language
- Prompts for creative writing
- Understanding acts/scenes within a play
- Comparing biography/autobiography
- Analyzing, making inferences and drawing conclusions from descriptive and persuasive text
- Providing evidence from text to support analysis
- Discerning author's intent
- Writing narrative, descriptive, compare/contrast, problem/solution, cause/effect, sequential, chronological, informative selections
- Recognizing themes in literature
- Recognizing and implementing good creative writing techniques

Reading cont.

Readers

- *In Character*—15 stories, 13 poems, 2 sequential activities, 2 Scripture readings, 1 play, 1 recipe, showcasing a dynamic cast of characters; reviewing literary concepts title, author, main character, plot, setting, summarization, moral, author's purpose, fiction/nonfiction, simile, rhyme scheme, meter, repetition, act scene, cast, stage directions, symbolism, narrative text structure, point of view, dialect, and introducing literary concepts—theme, character development, characterization, multidimensional and one-dimensional, author's purpose, internal monologue; Time to Think, I Wonder, Think on These Things–factual, inferential, and interpretive comprehension/discussion questions; author/background information for explanation of terms; story and Christian character themes; silent reading prompts; illustration and photo observations; challenging vocabulary and definitions listed at bottom page of stories; In the Spotlight literary concept activities: analyze main character, summarize plot, examine narrative text structure, analyze character development, creative collaboration, write a mystery, compare and contrast characters
- *Message of the Mountain*—a 30-chapter Christian historical fiction novel, the third and final book in the Maple Tree Trilogy; reconnect with the Johnson family as they face new challenges and opportunities, discovering how a personal relationship with God provides peace in trials, strength in adversity, and greater joy throughout life; includes advanced vocabulary words and definitions for vocabulary enrichment; reviews literary concepts—title, author, main character, setting, plot, point of view, symbolism, foreshadowing, cause/effect, summarization, while also incorporating the concepts mood and word usage; book report preparation activities include analysis of character development, charting cause/effect, and chapter summarization; other features include Bible application, critical thinking discussions, character traits to emulate, background information, author's pen, illustration observation, silent reading prompts, Scripture references, factual, inferential, and interpretive comprehension and discussion questions; additional enrichment activities include compare/contrast Venn diagram and character analysis.
- *Noah Webster*—a 12-chapter biographical novel, based on the events in the life of Noah Webster; includes advanced vocabulary words and definitions for vocabulary enrichment; reviews key literary concepts—title, author, main character, setting, plot, moral, cause/effect; plot summarization for preparation in writing a book report; chapter reviews including factual, inferential, and interpretive comprehension and discussion questions; other features include chapter summaries, Scripture reference, Bible application, critical thinking discussions, character traits to emulate, background information; additional enrichment activities include creative collaboration, making ink
- *Wonders Within*—12 stories, 13 poems, 9 informatives, 2 plays, 4 science demonstrations, weaves imagination with discovery while demonstrating God's hand in the wonders all around us; reviewing literary concepts title, author, characters, plot, narrative text structure, elements of poetry, symbolism, folk literature, and introducing genre, figurative language, free verse, author style, internal rhyme, jargon, fact and opinion, word usage, word play, irony, author intrusion, limericks; Time to Think, I Wonder, Think on These Things—factual, inferential, interpretive, and biblically based comprehension/discussion questions; background information, story and Christian character themes, silent reading prompts; illustration and photo observations; additional enrichment activities include journaling, creative writing, compare/contrast topics, Scripture reading, science demonstration; challenging vocabulary and definitions listed at bottom page of selections; In the Spotlight literary concept activities include analyze poetry, describe the topic, compare and contrast the topics, write a story, compare and contrast author's style, read and comprehend, and creative collaboration
- *Of America: Hometown Tales*—24 stories, 9 poems, 1 play, 1 recipe, that flashback through American history, anchoring students in different centuries from the past, while discerning fact from legend and right from wrong; reviewing In the Spotlight concepts, plot, setting, climax, biography and autobiography, folk literature, introducing literary concepts historical fiction, mood, elements of plot—introduction, rising action, falling action, conclusion, hyperbole: Time to Think, I Wonder, Think on These Things–factual, inferential, interpretive, and biblically based comprehensive/discussion questions; author notes to highlight writing styles and dialect, background information; story and Christian character themes; silent reading prompts, illustrations and photo observations; biblical worldview and critical thinking discussion; challenging vocabulary and definitions listed at bottom of pages of selections; enrichment activities including culture experience, creative collaboration, charting the plot/identifying the climax, analyzing the mystery, and predicting an ending; In the Spotlight literary activities: write creatively, sequential activities (recipe, craft), describe the mood, analyze the plot, analyze the character, identify problem and solution, summarize parts of a plot, analyze imagery
- *More Than Conquerors*—16 stories, 9 poems, 1 recipe, centered on the themes of courage, purpose, and faith; reviewing elements of narrative and plot, genre, mood, foreshadowing, author's style, prediction, problem/solution, cause/effect, multidimensional, one-dimensional characters, character analysis, elements of poetry, internal monologue, imagery, symbolism, figurative language, wordplay, idiom, jargon, chronological text; allegory; In the Spotlight activities include map skills, character analysis, creative writing, identifying metaphorical phrases
- *Reading Comprehension 5*—a collection of 42 selections featuring science articles, short stories, informatives, poetry, assessment pages for recall, application, evaluation, and analysis for thinking and problem solving; index of Literary Application of Concepts: alliteration, author's purpose, author's style, blank verse/free verse, characterization/character analysis, character development, dialect, elements of a narrative, fact/opinion, figurative language, flashback, foreshadowing, genre, inference, internal rhyme, jargon, main idea, mood, near rhyme, plot analysis, poetic structure, point of view, prediction, repetition, rhyme scheme, textual evidence, text structure, theme
- *Adventures in Nature*—25 timed narrative and informative selections highlighting the theme of God's beautiful creation; 25 quizzes to assess comprehension speed; 1 reading record to self-evaluate reading pace; 1 My Great Adventure Chart to track overall reading speed and comprehension (while analyzing scores, students can determine their best reading rate to achieve optimal accuracy in comprehension): quiz key

Language Arts: Language

The *God's Gift of Language 5* work-text gives students the tools necessary to build good communication. Through a variety of practice exercises in both grammar and writing, students continue building on the foundational language concepts learned in fourth grade. As well as providing a thorough review of capitalization, punctuation, and the parts of speech, *God's Gift of Language 5* deepens students' knowledge of grammar and increases their writing skills. Fifth graders will be reviewing the four main types of complements and applying correlating rules for punctuation. They will learn how to diagram prepositional phrases and complements. Students will expand their understanding and knowledge of English as they apply the following concepts: sentence structure and writing style; identifying and correctly using all eight parts of speech including action, helping, being, and linking verbs; identifying sentence patterns; subject-verb agreement including contractions and irregular verbs; punctuation rules including commas, periods, colons, quotation marks, and underlining; capitalization rules; and proofreader's marks. Students will enhance their writing abilities by mastering effective topic sentences, paragraphs, and transitional words.

Correlating with both *Writing with Creativity 5* and the Reading 5 program, *God's Gift of Language 5* allows students to translate grammar and mechanics skills into building good communication through writing applications appropriately spaced throughout the year. Students learn paragraph structure, summarization skills, cause/effect, inference, and persuasive writing (fact/opinion), as well as complete book reports (5), and a five-paragraph research essay.

Added Enrichment

- Four themes (deep waters, transportation, Wonders of the World, state parks)
- Glossary section of language terms
- Writing section including book report forms
- Dedicated homework section
- Take 5! review mini-quizzes
- Continual spiral review and application of previously taught material

Evaluation

- Book reports (5)
- Library Research Essay (test grade)
- Weekly quizzes (37)
- Biweekly tests (14)

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

Grammar

- Capitalization:
  - First word in every sentence and direct quotation
  - Pronoun *I*
  - Proper nouns:
    - Names, initials, titles of respect, family titles used as names
    - Days of the week and months of the year (not seasons)
    - Holidays/special days
    - Words referring to God and the Bible
    - Streets, cities, states, countries, rivers, oceans
  - ➤ Proper adjectives
  - First word, last word, and every important word in titles
  - ➤ Title of person before a name
  - ➤ Titles used instead of a name in direct address
- Punctuation:
  - Periods
    - At the end of most sentences
    - After initials/titles of respect
    - After abbreviations
  - Question marks at end of interrogative sentences
  - Exclamation points at end of exclamatory sentences
  - Quotation marks:
    - Before and after a direct quotation
    - Around titles of short stories, poems, songs, articles, other parts of books, magazines, and newspapers
  - Commas:
    - After *well*, *yes*, *no*, and *why* at beginning of sentence
    - Separate two or more adjectives before a noun
    - ➤ Before a coordinating conjunction joining a compound sentence
    - ➤ After an introductory dependent clause in a complex sentence
    - Set off words of direct address
    - Set off words in a direct quotation
    - Separate town or city from state
    - Separate words or groups of words in a series
    - Separate part of a date or address
    - After the greeting of a friendly letter and closing any letter
  - Apostrophes:
    - In contractions
    - With *s* to make a singular possessive
    - With *s* or single apostrophe to make a plural possessive
  - Colons:
    - Between chapter/verse of Scripture reference
    - Between hour/minute of written time
    - ➤ After greeting of business letters
  - ➤ Semicolons:
    - ➤ Separate simple sentences not joined by conjunction
    - ➤ Use before the transitional word and a comma after it
  - Underline:
    - Titles of books, newspapers, magazines
    - Names of ships, planes, trains, and spacecraft
    - Plays, films, sculptures, paintings, and other works of art
- Sentences:
  - Definitions of sentence, subject, predicate
  - Find subjects and verbs: compound, simple
  - Kinds of sentences: declarative, interrogative, exclamatory, imperative

Language *cont.*

Grammar *cont.*

- Correct run-on sentences and fragments
- Run-together sentences (corrected using introductory words/commas)
- Complete subject and predicate
- Simple subject and verb
- Clauses: dependent and independent
- Types of sentences: simple, compound, and complex
- Diagram compound sentences
- Identify complements: direct objects, indirect objects, predicate nominatives, predicate adjectives, objects of preposition
- Avoid wordiness
- Find the subject and verb:
  - Inverted order (interrogative sentences)
  - *There* and other words when beginning the sentence
- Parts of speech:
  - Recognize and diagram all eight parts of speech:
    - Noun as subject
    - Noun as predicate nominative, direct object, indirect object, and object of the preposition
    - Verb, pronoun, adjective, adverb
    - Preposition
    - Conjunction
    - Interjection
  - Verbs:
    - Past, present, and future tense
    - Action, state of being, helping
    - Linking
    - Verb phrase
    - Principle parts of verbs
    - Spelling rules for verb endings
    - Irregular forms of principle parts
    - Correct and effective verbs
    - Correct use of troublesome verbs: burst, busted; attacked, attackted; brought, brung; climbed, clumb; drowned, drownded; ate, et; eaten, aten; grew, growed; sneaked, snuck; stole, stoled; threw, throwed; thought, thunk
  - Nouns:
    - Singular/Plural:
      - Plural spelling rules
      - Irregular plural nouns
    - Common/Proper
    - Compound
    - Abstract
    - Nouns as antecedent, subjects
    - Nouns as direct objects, indirect objects, predicate nominatives, appositives, objects of preposition
  - Pronouns:
    - Personal pronouns (subjective, objective, possessive)
    - Compound, interrogative, demonstrative
    - Subject and verb agreement with pronouns
  - Adjectives:
    - Proper
    - Adjectives that look like verbs
    - Possessive nouns and pronouns as adjectives
    - Articles
    - Predicate adjectives
    - Distinction between adjectives modifying noun and a compound noun
    - Degrees of comparison
    - Comparison of irregular adjectives
  - Adverbs:
    - Know adverbs modify verbs, adjectives, and other adverbs
    - Distinguish adjectives from adverbs
    - Use modifiers correctly
    - Use *good* and *well* correctly
    - Use adverbs and negatives correctly
    - Compare adverbs
  - Prepositions:
    - Prepositional phrase
    - Object of preposition
    - Adjective or adverb phrase
    - Preposition or adverb
    - Diagram prepositional phrases
  - Conjunctions:
    - *and, but, or, nor, for, yet*
    - subordinating and correlative
  - Interjections:
    - Punctuation
    - Diagram
- Transitional words
- Word study and diction
  - Use the best words; use specific words
  - Understand synonyms, homonyms, and antonyms
  - Use the dictionary
  - Use the thesaurus
  - Correctly use:
    - *Between, among; can, may; less, fewer*
    - *Amount, number*
- Inference

Composition

- Write a book report with character sketch using the Writing Process
- Use a checklist for book reports
- Write:
  - Friendly letters
  - Post cards
  - Thank-you notes
  - Paragraphs with a topic sentence
  - Paragraphs with unity
- Write with details
- Make topical and sentence outlines
- Use the Writing Process for a library research essay:
  - Make a preliminary outline
  - Take notes
  - Write bibliography cards
  - Make a final outline
  - Write the rough draft, a second rough draft, and the final draft
- Alliteration
- Facts/Opinions (persuasive paragraph)
- Topic/Concluding sentences
- Correspondence:
  - Friendly letter (heading, greeting, body, closing, and signature)
  - Business letter (heading, inside address, greeting, body, closing, and signature)
  - Email (email address, subject line, greeting, body, closing, and signature)

Language Arts: Penmanship/Creative Writing

Penmanship: *Writing with Creativity 5* contains exercises designed to give fifth graders daily instruction and practice in maintaining their penmanship skills. Emphasis is placed on neatness and correct letter formation, slant, and spacing through daily practice. Students will benefit from character-building themes and thought-provoking questions through Character Counts activities. Each activity is designed to promote thinking skills, creativity, and class discussion.

Creative Writing: Beginning in lesson 19, students apply effective communication skills as writing class focuses primarily on creative writing. Students will learn multiple types of writing styles including essay, compositions, narrative, poetry, and more. Organizational and critical-thinking skills are built through the process of studying and drafting each creative writing project. The variety of creative writing topics will challenge students' thinking skills, enhance imagination, and prepare students to be skilled writers.

Added Enrichment

- Correlates with Writing Process taught in Language 5
- My Writing Portfolio
- Optional collaborative projects
- Extra practice for penmanship review during creative writing focus
- Optional exercises for additional creative writing opportunities
- Character Counts activities
- Additional writing exercises included in Language, Reading, History, Science, and Health

Evaluation

- Wonders of Creativity penmanship quizzes (optional)
- Creative Writing selections (10–optional)

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

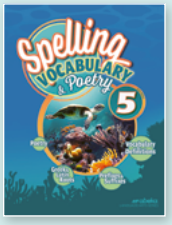
Penmanship

- Maintaining good writing habits:
  - Sitting properly in desk
  - Holding pen correctly
  - Slanting paper correctly
- Writing in ink with a relaxed grip and flowing movement
- Using correct warm-up procedure with key strokes: ovals, mountains, waves, loops
- Correctly writing all upper- and lowercase letters and numbers 0–9
- Maintaining good overall writing skills:
  - Forming difficult letters correctly
  - Placing letter correctly on lines
  - Writing with consistent spacing between letter and words
  - Slanting letter properly
  - Making smooth connections between letters and difficult letters
  - Writing using ¾ spacing on wide ruled paper
  - Writing using consistent letter size
- Evaluating writing for personal improvement
- Copying most assignments from print to cursive
- Writing journal entries
- ➤ Character Counts activities with character-building themes
- ➤ Wonders of Creativity paragraphs to study the creativity of people from the past

Creative Writing

- Reviewing and enhancing the writing process: read and gather, think and plan, write and rewrite, check and polish, share your results
- Using proper capitalization and punctuation
- Organizing main ideas into graphic organizers
- Writing topic/concluding sentences
- Constructing paragraphs
- Creative stories based on prompts
- Story starters
- Picture writing prompts
- Creative writing collection: My Writing Portfolio
- ➤ Narratives:
  - ➤ Fictional narrative
  - ➤ Personal narrative
- ➤ Essays:
  - ➤ Informative essay
  - ➤ Interview essay
  - ➤ Persuasive essay
- ➤ Literary Response
- ➤ Poetry:
  - ➤ Limericks
  - ➤ Rhyming poems
  - ➤ Cinquain
- Paragraphs:
  - Opinion paragraph
  - Compare/Contrast paragraph
  - Sequential paragraph
- ➤ Biblical compositions:
  - ➤ Biblical narrative
  - ➤ Biblical paraphrase
- ➤ Descriptive writing:
  - ➤ Using 5 senses
  - ➤ Show, don't tell
  - ➤ Strong verbs and descriptive words
  - ➤ Figurative language
- ➤ Hand lettering
- ➤ Media literacy:
  - ➤ Writing from someone else's perspective
  - ➤ Persuasion techniques in writing
  - ➤ Sensationalism/Bias in news media
  - ➤ Cause/Effect stories
- Using transitional words to write a sequence
- Collaborative project: Organizing a fundraiser
  - ➤ Collecting fundraiser ideas
  - ➤ Writing a fundraiser plan
  - ➤ Writing a fundraiser proposal
  - ➤ Writing a fundraiser financial plan
  - ➤ Designing a fundraiser flier/website
- ➤ Creating tongue twisters
- ➤ Imaginative stories

Language Arts: Spelling, Vocabulary & Poetry 5



In order to achieve spelling mastery, students must learn how to analyze word structure and patterns. *Spelling, Vocabulary & Poetry 5* allows students to understand how spelling "works" by teaching them to examine words and apply spelling and phonics rules. They will also learn the spelling and abbreviation for each book of the Bible and the difference between pairs of words commonly used as synonyms, antonyms, or homonyms. Instruction in open and closed compound words is given, as well as in commonly used contractions. Lists are arranged in four sections: prefix, suffix, root, and vocabulary. A variety of exercises allows fifth graders to recognize misspelled words, practice using spelling and vocabulary words in original sentences, and improve their proofreading skills. Review lists are included to promote mastery of words. Opportunities to develop a biblical worldview are provided as each list highlights Wise Words—a character-building quote and Scripture verse. Seek and Find activities give students opportunities to reinforce their spelling usage skills while they search the Scriptures. Students will enjoy memorizing and reciting seven character-building classic poems and a hymn that have been included in this text.

Added Enrichment

- Spelling and vocabulary:
  - Spelling lists (34) including 4 review lists and 2 challenge lists
  - Spelling words (725)
  - Vocabulary words (300)
  - Challenge words (70)
  - Organized by topic (29)
  - Practice exercises (68) including cumulative review of vocabulary words and definitions
  - Spelling games (19)
  - Pronunciation key
  - Quick-reference spelling rules in text
  - Organized by word structure and patterns
  - Build on previous concepts
  - Reinforce new concepts
- Teacher resources:
  - Scope and Sequence
  - Sentence Banks
  - Pro Tip
  - Study Helps
  - Wise Words
  - A Minute to Muse
  - DTAs available for spelling practice and review
- Poetry:
  - Introduction to each poem
  - Biographical sketch of author
  - Vocabulary words to know
  - Comprehension questions
  - Critical thinking questions
  - Discussion starters (biblical worldview)
  - Enrichment Ideas
  - Literary concepts
  - DTAs available to enrich interpretation and appreciation

Evaluation

- Spelling tests (34)

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

Spelling & Vocabulary Skills Development

- Master spelling and vocabulary lists including:
  - ➤ Vocabulary words and definitions
  - ➤ Synonyms and antonyms
  - ➤ Homonyms
  - Closed compound words
  - Open compound words
  - Hyphenated compound words
  - Contractions
  - ➤ Prefixes
  - ➤ Suffixes
  - ➤ Greek and Latin roots and their meaning
  - ➤ Syllable rules
  - Memorize vocabulary definitions
  - Use vocabulary words in proper context
  - Write original sentences using spelling and vocabulary words
  - Applying spelling and vocabulary words correctly to complete sentences and paragraphs
  - ➤ Learn the spelling and abbreviation for each book of the Bible
  - ➤ Distinguish between pairs of words commonly used as synonyms, antonyms, or homonyms
  - Applying spelling pattern concepts through daily:
    - Teacher-directed oral practice
    - Independent written practice
  - Learn background information on selected spelling and vocabulary words

Learn Spelling Rules:

- Use *i* before e, except after c, or when sounded like *a*.
- Exceptions to the *i* before *e* rule
- Double a final consonant before adding a suffix beginning with a vowel.
- Know when to change *y* to *i* when adding a suffix.
- Drop the silent *e* before adding a suffix beginning with a vowel.
- Retain the final *e* if the suffix begins with a single consonant.
- Write *g* or *dge* to say the *j* sound at the end of a word.
- The letter *q* is followed by *u* and at least one more vowel.
- Adding a prefix to a word does not usually change the spelling of that word.
- Use *ai* in the middle of a word; use *ay* at the end of a word.
- Use *ck* after a short vowel sound; use *k* after a vowel combination or a consonant.
- When the long *e* sound comes before a final syllable beginning with a vowel, it is usually spelled with *i*.
- The long *e* sound at the end of a word is often spelled with a *y*.
- In English words borrowed from French, the *sh* sound is spelled with *ch*.
- When a word ends in two consonants, simply add the suffix.
- If a word has two or more syllables, use a *c* for the final *k* sound.
- For words ending in *y* preceded by a consonant, change the *y* to *i* before all suffixes except those beginning with *i*.
- ➤ When *gh* is at the end of a word, it usually says the *f* sound; when *gh* is in the middle of a word or follows the long *i* sound, it is usually silent.
- ➤ Directional words like *north, south, east,* and *west* are generally not capitalized.
- The letters *ph* say the *f* sound and can appear in the beginning, middle, or end of a word.
- The long *e* sound can be spelled *e, ee, ea, eo, i, ie,* and *ey*.
- ➤ When the letter *s* follows a vowel, it usually says the *z* sound.

Spelling, Vocabulary & Poetry 5 cont.

Learn Spelling Rules: *cont.*

- To form the plurals of nouns ending in o preceded by a vowel, add *–s*; to form the plurals of most nouns ending in o preceded by a consonant, add *–es*.
- The *ur* sound as in *fur* can be spelled, *or*, *ur*, *ir*, or *er*.
- English words do not end in *v*; a silent *e* is added to the end of the word.
- When writing a contraction, the apostrophe takes the place of the missing letter or letters.

Learn Prefixes and Their Meaning:

- The prefix *un-* means "not" and can change a word into its antonym.
- The prefix *non-* means "not" or "without" and can change a word into its antonym.
- The prefix *re-* means "again."
- The prefix *in-* means "not" and can change a word into its antonym.
- The prefix *mis-* means "badly" or "wrongly."
- The prefix *pre-* means "before."
- The prefix *de-* means "away, down, completely."
- The prefix *fore-* means "before."
- The prefix *sub-* means "under" or "below."
- The prefix *anti-* means "against, opposite."
- The prefix *co-* means "together" or "with."
- The prefix *dis-* means "not" or "opposite of" and can change a word into its antonym.
- The prefix *inter-* means "between."
- The prefix *extra-* means "outside" or "beyond."
- The prefix *en-* means "cause to" or "put into."
- The prefix *mal-* means "bad, wrong, evil."
- The prefix *up-* means "higher, upward, toward the top."
- The prefix *ir-* means "opposite of" and can change a word to its antonym.
- The prefix *over-* means "above, too much."
- The prefix *super-* means "over, above."
- The prefix *mid-* means "middle."
- The prefix *semi-* means "half" or "part."
- The prefix *ex-* means "out, from, utterly."
- The prefixes *com-*, *con-* mean "together" or "with."
- English words of Spanish origin
- The prefix *multi-* means "many."
- English words of German origin
- Some contractions do not include personal pronouns.

Learn Suffixes and Their Meaning:

- The suffix *-ible* means "can be done" or "capable of being" and can change a verb to an adjective.
- The suffix *-able* means "fit for" or "capable of" and can change a verb to an adjective.
- The suffix *-ful* means "full of" or "known for" and can change a noun to an adjective.
- The suffix *-ic* means "having the form of or characteristic of" and can change a noun to an adjective.
- The suffix *-er* means "one who" and can change a verb to a noun.
- The suffix *-ment* means "the result of an action or process" and can change a verb to a noun.
- The suffix *-ship* refers to "quality" or "position held."
- The suffix *-y* helps a word answer the question "How?" and can change an adjective to an adverb.
- The suffix *-less* means "without" and can change a noun to an adjective.
- The suffix *-ant* or *-ent* means "one who does" or "one who thinks."
- The suffix *-age* means "to perform an action" or "the result of an action."
- The suffix *-al* means "having the form or character of" and can change a noun to an adjective.
- The suffix *-ize* means "to make" or "cause to become."
- The suffixes *-ous*, *-ious* mean "characterized by" and can change a noun to an adjective.
- The suffix *-ify* means "to make" or "to become" and can change an adjective to a verb.
- The suffix *-ive* means "the quality of something" or "tending to" and can change a verb to an adjective.
- The suffix *-ance* means "process of," "quality of" or "state of" and can change a verb to a noun.
- The suffix *-tion* is used to create the noun form of an action verb.
- The suffix *-ee* means "one who receives or completes an action."
- The suffix *-ism* means "the act, practice, or result of."
- The suffix *-hood* means "condition, nature, or state in life."
- The suffix *-sh* means "like" or "similar to."
- The suffix *-some* means "having the quality or condition of."
- Form the plurals of nouns ending in *f* and o.
- Technology words
- Homophones
- Open compound words

Learn Greek and Latin Roots and Their Meaning:

- The Latin root *omni* means "all."
- The Latin root *terr* means "earth."
- The Latin root *ab* means "away from, off" or "down."
- The Latin roots *hab* and *hib* mean "to dwell, to have" or "to hold."
- The Latin root *dict* means "to say."
- The Latin root *fund* means "depth, bottom" or "foundation."
- The Latin root *fort* means "strong."
- The Latin root *vac* means "empty."
- The Latin root *jur* means "law."
- The Latin roots *sens* and *sent* mean "to feel" or "perceive."
- The Latin roots *vid* and *vis* mean "to see."
- The Latin root *aqu* means "water."
- The Latin root *viv* means "alive" or "lively."
- The Latin root *audi* means "to hear" or "able to be heard."
- The Latin root *brev* means "small" or "short."
- The Latin root *lev* means "to lift" or "to make light."
- The Latin root *bene* means "good."
- The Latin root *port* means "to carry."
- The Latin roots *scrib*, *scrip* mean "to write."
- The Latin root *manu* means "hand."
- The Latin root *ped* means "foot."
- The Greek roots *ast*, *aster* mean "star."
- The Greek root *arch* means "ruler."
- The Greek root *auto* means "self."
- The Greek root *bio* means "life."
- The Greek root *path* means "feeling" or "disease."
- The Greek root *dyna* means "power."
- The Greek root *cosmos* means "universe."
- The Greek root *graph* means "to write."
- The Greek root *log*, *logy* means "speech, word, reasoning, study."
- The Greek root *phil* means "love."
- The Greek root *phon* means "sound, voice."
- The Greek root *photo* means "light."
- The Greek roots *sym*, *syn* mean "together."
- The Greek root *dem* means "people."

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

Spelling, Vocabulary & Poetry 5 *cont.*

Learn Greek and Latin Roots and Their Meaning: *cont.*

- ➤ The Greek root *tele* means "far off."
- ➤ The Greek root *hydr* means "water."
- ➤ The Greek root *cycle* means "wheel" or "circle."
- ➤ The Greek root *tri* means "three."
- ➤ Hyphenated compound words

Worksheet Activities:

- Sorting words by Greek and Latin roots
- Arranging words according to prefix and suffix
- Identifying the prefix of a word
- Identifying the suffix of a word
- Analyzing context clues to select the correct vocabulary word
- Writing original sentences using spelling words
- Completing spelling words by adding the missing letters
- Identifying words by their synonyms
- Applying knowledge of patterns and structure to complete the spelling word
- Solving puzzles using spelling words
- Identifying variant spellings of the same sound
- Using spelling words in Bible context
- Identifying rhyming words
- Alphabetizing to the third and fourth letter
- Completing analogies
- Defining vocabulary words
- Applying spelling rules to complete words

Poetry Skills Development

- Memorize 7 lyrical poems and one hymn.
- Develop appreciation of poetry.
- Analyze personification, rhyme scheme, imagery, onomatopoeia, and other literary concepts.
- Perform before an audience.
- Recite in unison.
- Develop appropriate expression and volume.
- Learn the meaning of new and unfamiliar words.
- ➤ Improve comprehension through discussion questions.
- ➤ Critical thinking questions to stimulate reasoning
- ➤ Discussion Starters to facilitate biblical application
- ➤ Enrichment ideas to generate interest in the message of the poem

Arithmetic

An information box, abundant practice of new and review concepts and facts, and daily word problems are key features of *Arithmetic 5*. Problem-solving strategies are scattered throughout the text to help students acquire the skills necessary to be expert problem solvers. Emphasis is placed on topics such as whole numbers, fractions, decimals, measurement and algebraic equations, and basic geometric problems.

Evaluation

- Biweekly tests (17)
- Biweekly quizzes (17)
- Daily skills development exercises (135)

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Base 10/Numbers

- Place value:
  - ➤ Whole numbers to the 100 billions place; money
  - Decimals to the thousandths place
  - ➤ Writing numbers:
    - ➤ From dictation to the 100 billions place
    - ➤ From number words
    - ➤ In expanded form
- Roman numerals:
  - Value of I, V, X, L, C, D, M
  - Basic rules for Roman numerals
  - More complex rules for forming Roman numerals
- Comparing, including decimals
- Recognize symbols:
  - >(greater than), <(less than)
  - =(equal), ≠(unequal)
- ➤ Rounding: whole numbers, money, mixed numbers, decimals, timed mastery
- Number sentences: greater or less than
- Estimating:
  - Sum, difference
  - Product, quotient
- Squares and square roots:
  - ➤ Terms: exponent, base, radical sign
- ➤ Order of operations: Parentheses, exponents, addition, subtraction, multiplication, division
- Prime/composite
- Factors:
  - Factoring
  - Finding common and greatest common factor
- Multiples:
  - Identifying
  - Finding common and least common multiple

Addition

- Addition families 1–18 in mixed order
- Timed mastery
- Terms: addend, sum
- Missing sign
- Word problems
- Money
- ➤ Mental arithmetic: problems combining addition, subtraction, multiplication, and division up to 13 numbers
- Carrying to any position
- Using commutative property to check
- Addends: column addition
- Averaging
- Fractions/mixed numbers with common and uncommon denominators

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Arithmetic *cont.*

Addition *cont.*

- Measures
- Decimals with annexing zeros
- ➤ Negative numbers

Subtraction

- Subtraction families 1–18 in mixed order
- Timed mastery
- Missing sign
- ➤ Mental arithmetic: problems combining subtraction, addition, multiplication, and division up to 13 numbers
- Word problems
- Terms: minuend, subtrahend, difference
- Borrowing from any position
- Money
- Using inverse operation to check
- Fractions/mixed numbers with common and uncommon denominators/borrowing
- Measures
- Decimals with annexing zeros
- Number sentences: greater or less than
- ➤ Negative numbers

Multiplication

- Multiplication facts: 0–12 tables
- Using commutative property to find related facts
- Word problems
- Timed mastery
- Terms: factor, partial product, product
- Missing sign
- ➤ Mental arithmetic: problems combining multiplication, division, addition, and subtraction up to 13 numbers
- Multiplying with up to 3-digit multiplier (factor)
- Carrying
- Using commutative property to check
- Money
- Fractions:
  - Using cancellation
  - Multiplying fractions with whole or mixed numbers
  - Multiplying fractions with two mixed numbers
- ➤ Decimals:
  - ➤ Multiplied by whole numbers
  - ➤ Multiplied by another decimal
  - ➤ Annexing zeros in multiplication
- Number sentences: greater or less than
- ➤ By powers of ten

Division

- Division facts: 1–12 tables
- Word problems
- Steps of division
- Terms: dividend, divisor, quotient, remainder
- Missing sign
- Timed mastery
- ➤ Mental arithmetic: problems combining division, multiplication, addition, and subtraction up to 13 numbers
- Divisor:
  - 1–2 digits
  - ➤ 3 digits
- Dividends up to 6 digits
- Averaging
- Remainders written as fractions
- Rounding quotients
- Using inverse operation to check
- Money
- Divisibility rules: 2, 3, 4, 5, 6, 9, 10
- ➤ Dividing fractions:
  - ➤ Term: reciprocal
  - ➤ Whole or mixed number by a fraction
  - ➤ Fraction by a fraction
  - ➤ Fraction or mixed number by a whole number
  - ➤ By a mixed number
- ➤ Decimals:
  - ➤ Dividing a decimal by a whole number
  - ➤ Eliminating the decimal point in the divisor
  - ➤ Annexing zeros to avoid remainders
  - ➤ Repeating decimals
- ➤ By powers of ten

Fractions

- Parts of a whole or group
- ➤ Word problems: a broader and deeper understanding of concepts
- Timed mastery
- Terms: numerator, denominator
- Number words
- Types:
  - Proper, mixed, improper
  - Change to mixed or whole number
- Reducing to lowest terms
- Number line: comparing/ordering
- Finding least common denominator
- Addition with common or uncommon denominators
- Subtraction:
  - With common or uncommon denominators
  - With borrowing
- Multiplication:
  - Using cancellation
  - Multiplying a fraction with a whole or mixed number
  - Multiplying 2 mixed numbers
- Equivalent fractions
- ➤ Division:
  - ➤ Whole or mixed number by a fraction
  - ➤ Fraction by a fraction
  - ➤ Fraction or a mixed number by a whole number
  - ➤ By a mixed number
- ➤ Changing decimals to fractions and fractions to decimals

Decimals

- Money
- Reading and writing:
  - Writing fraction as a decimal
  - Writing decimal as a fraction
- Place value to the thousandths place
- Addition and subtraction: annexing zeros
- ➤ Multiplication:
  - ➤ By a whole number
  - ➤ By another decimal
  - ➤ When zeros are annexed

Arithmetic *cont.*

Decimals *cont.*

- ➤ Division:
  - ➤ Dividing a decimal by a whole number
  - ➤ Eliminating the decimal point in the divisor
  - ➤ Annexing zeros to avoid remainders
- ➤ Comparing and ordering decimals
- ➤ Repeating decimals
- ➤ Rounding
- ➤ Timed mastery
- Changing decimals to fractions and fractions to decimals

Problem Solving & Applications

- Word problems:
  - Addition, subtraction, multiplication, division, fractions
  - Money, measures, averages, decimals, equations
  - Geometry: area, perimeter
  - Graphs
  - ➤ Scale drawings, temperature
- Steps of problem-solving process:
  - ➤ Problems requiring four steps
  - Mixed operations, estimating answers, eliminating unnecessary facts
- Applications:
  - ➤ Developing a broader and deeper understanding of concepts:
    - ➤ Measures, Roman numerals
    - ➤ Fractions, money, decimals
    - ➤ Graphs, scale drawings
    - ➤ Temperature, geometry, place value

Time

- Table of time: second, minute, hour; day, week, year, leap year; decade, score, century, millennium
- Interpreting clocks
- Elapsed time

Money

- Addition, subtraction, multiplication, division
- ➤ Estimation
- ➤ Rounding to the nearest cent
- ➤ Making/counting back change
- ➤ Personal financial literacy:
  - ➤ Introduction to concept/terms
  - ➤ Cost comparison
  - ➤ Home loans
  - ➤ Bank accounts/check register
  - ➤ Taxes
  - ➤ Gross vs. net income
  - ➤ Tithes/offerings
  - ➤ Types of payments
  - ➤ Parts of a check
  - ➤ Debit vs. credit cards
  - ➤ Parts of a debit/credit card
  - ➤ Delayed gratification
  - ➤ Setting up/following a budget

Measures

- Temperature:
  - Reading and writing
  - Term: degrees
  - Celsius and Fahrenheit:
    - Freezing and boiling points of water
    - Normal body temperature
    - ➤ Converting Celsius to Fahrenheit and Fahrenheit to Celsius
    - ➤ Negative temperatures
- Length:
  - ➤ Measuring to $\frac{1}{16}$ of an inch/to the millimeter
  - U.S. customary: inch, foot, yard, mile
  - Metric: millimeter, centimeter, decimeter, meter, decameter, hectometer, kilometer
- Weight:
  - U.S. customary: ounce, pound, ton
  - Metric: milligram, centigram, decigram, gram, decagram, hectogram, kilogram
- Quantity: dozen, score
- Capacity:
  - U.S. customary: fluid ounce, cup, pint, quart, gallon, peck, bushel, teaspoon, tablespoon
  - Metric: milliliter, centiliter, deciliter, liter, decaliter, hectoliter, kiloliter
- Ordering measures: least to greatest
- Converting measures from one measure to another within same system
- Adding unlike measures within the same system
- Subtracting unlike measures within the same system
- Square measures:
  - Square inches, square feet, square yards
  - ➤ Acres, square miles
- Timed mastery; metric prefixes
- ➤ Fractional measure conversions

Data: Graphing, Statistics, Probability

- Statistics: mean, median, mode, range
- Gathering Data
- Graphs:
  - Drawing graphs
  - Pictographs, bar, and line graphs
  - Dot plots
  - Circle graphs
    - ➤ Using protractor and data to create circle graphs
  - Identify title, labels, and scale
  - ➤ Ordered pairs/Cartesian plane
- ➤ Probability:
  - ➤ Terms: outcome, event
  - ➤ Using formula to calculate

Geometry

- Plane figures:
  - Closed figure, polygon
  - Quadrilateral: parallelogram, rectangle, square, rhombus, trapezoid, kite
  - ➤ Pentagon, hexagon, octagon, decagon
  - Triangle: right, isosceles, equilateral, acute, obtuse, scalene
    - ➤ Sum of angles is 180°
  - ➤ Symmetry: line, rotational
- Angles:
  - Right, congruent
  - Acute, obtuse, straight
  - ➤ Adjacent angles/angles sums
  - Using a protractor to measure/draw angles

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

Arithmetic *cont.*

Geometry *cont.*

- Lines:
  - Line segment, line, ray, intersecting lines
  - Parallel and perpendicular lines
- Circles: center, radius, diameter, arc, chord, sector
  - ➤ Angles in a circle
- Terms:
  - Point, plane, congruent
  - Similar, diagonal
- ➤ Transformations: translation, reflection, rotation
- Perimeter of a polygon
- Area:
  - Formulas for rectangle and square
  - Using square measures
- Solid Figures:
  - Terms: face, edge, vertex
  - Types: cube, rectangular prism, square pyramid, sphere, cone, cylinder
  - ➤ Volume:
    - ➤ Formula for rectangular prism
    - ➤ Using cubic measures

Percent, Ratio, Proportion

- ➤ Recognize symbol % (percent)
- ➤ Reading and writing:
  - ➤ Percent as a fraction, decimal, ratio
  - ➤ Fraction as a percent
  - ➤ Decimal as a percent
- ➤ Percent for circle graphs
- ➤ Ratio terms: antecedent, consequent
- ➤ Proportion terms: mean, extreme
- ➤ Scale drawings

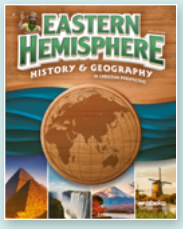
Algebra

- ➤ Terms: variable, simplify, algebraic, translation
- ➤ Solving equations:
  - ➤ 4 new axioms:
    - ➤ With number and unknown side by side
    - ➤ Unknown as numerator and number as denominator
  - ➤ To solve story problems

Negative Numbers

- ➤ Comparing
- ➤ Temperatures below zero
- ➤ Ordered pairs
- ➤ Add/subtract negative numbers

History & Geography



Eastern Hemisphere History and Geography presents a fascinating study of the Eastern Hemisphere by geographical regions starting with the Middle East, where history began. It not only presents the importance of studying history and the significance of geography, but also describes the beginnings of history from a Christian perspective. Students are introduced to worldwide missions and missionary heroes while learning about the history, geography, and culture of these specific locations: Asia, Africa, Europe, Australia, Oceania, and Antarctica. They will also study history as it relates to important topics such as creation, evolution, humanism, government, and nations.

Added Enrichment

- Comprehension checks (100)
- Chapter checkups at end of each chapter (21)
- Special feature boxes with in-depth study of Eastern Hemisphere (81):
  - Concepts and places of history
  - Spotlights on events
  - Animals of the world
  - Wonders of geography
  - Important people of history and missionaries of the world
- Maps (75) and important facts about each continent at beginning of each unit
- Worksheets (49):
  - Geography facts and review (28)
  - Chapter content worksheets (9)
  - Geography atlas and continent study (7)
  - Map skills (5)
- *Nation Notebook* optional research project:
  - For nation from Eastern or Western Hemisphere
  - Including geography, symbols, way of life, history
  - Improving skills: organizing time and meeting deadlines, gathering information, writing reports, reading maps, mounting and labeling pictures, making a timeline

Evaluation

- Printed quizzes (28)
- Homework quizzes (6)
- Tests (8)
- 9-weeks content and geography exams (4)
- Atlas, continent, and geography facts memorized and evaluated (47)

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

History & Geography cont.

History Study

- Importance of history and geography
- Fundamentals of historical research
- Introduction to government
- Fertile Crescent:
  - Cradle of Civilization: Tigris and Euphrates
    - Sumer: Mesopotamia (Babylon), irrigation, writing, wheel, ziggurats
    - Ur of the Chaldees: Chaldea, Abraham
    - Asia Minor
- Ancient Middle East:
  - Daily life in an ancient city
  - Phoenicians (seafaring people): sailors, Carthage, alphabet, papyrus, blown glass
  - Hittites: empire builders
  - Lydians (makers of money): trade by barter, first coins minted
  - Israelites (God's chosen people): Sinai Peninsula, Ten Commandments, Joshua, "Holy Land," Canaanites, judges, King Saul, King David, King Solomon
  - Assyrian Empire: feared conquerors
  - Babylonian Empire: Code of Hammurabi, Daniel, King Belshazzar
  - Persian Empire: Cyrus the Great
- Middle East today:
  - Climate
  - People, culture, religion
  - Importance of history and current events: Islam, Judaism, Christianity
  - Three geographical areas: Fertile Crescent, Arabian Peninsula, Northern Plateaus
  - Six Day War
  - Persian Gulf War
  - Other countries of the Middle East: Israel, Lebanon, Syria, Jordan, Iraq, Kuwait, Bahrain, Qatar, United Arab Emirates, Oman, Yemen, Turkey, Iran, South Caucasus
    - Saudi Arabia
      - Arab League
      - Abraham Records
- Countries of Central and Southern Asia:
  - India:
    - Topographical features, caste system, family life, religion
    - Indus River Valley civilization
    - Taj Mahal, Vasco da Gama, East India Company, William Carey, East and West Pakistan, Mt. Everest
  - Other Central and Southern Asian Countries: Pakistan, Bangladesh, Afghanistan, Nepal and Bhutan, Sri Lanka, Maldives
- Countries of the Far East:
  - China:
    - People, resources, climate, waterways
    - Dynasties, Great Wall of China, Great Silk Road, discoveries and inventions, missionary efforts
    - Changing country, Republic of China, Communism, Mao Tse-tung, Chiang Kai-shek, People's Republic of China
    - Modern China, Beijing, Hong Kong, Tiananmen Square
  - Chinese sphere of influence
  - Other East Asian countries: Laos, Cambodia, Thailand, Borneo, Brunei, Singapore, Indonesia, the Philippines, Papua New Guinea, Taiwan, Mongolia
    - Japan:
      - Pearl Harbor
      - Hiroshima and Nagasaki
    - North and South Korea:
      - 38th Parallel
      - Korean War
      - Kim Jong-un
    - Vietnam:
      - Vietnam War
- Countries of Central Asia:
  - Russia:
    - How Communism began: Karl Marx, Marxism, Vladimir Lenin, Joseph Stalin, Nikita Khrushchev
    - Soviet Union: Russian Revolution, Communist terrorism, atheism, few freedoms, government control, United Nations
    - Modern Russia: Vladimir Putin
  - Other Countries of Central Asia: Siberia, Kazakhstan, Uzbekistan, Kyrgyzstan, Turkmenistan, Tajikistan
- Ancient Europe:
  - Greece:
    - First Greeks: Minoans, Crete, Mycenaeans, Trojan horse
    - Greek alphabet and writings: Homer, Aesop
    - Greek philosophers: Pythagoras, Democritus, Socrates, Plato, Aristotle
    - Greek city: city-state, agora, acropolis, theater, gymnasium, stadium
    - A Greek idea: democracy
    - Two famous city-states: Athens and Sparta
    - Philip of Macedonia: Macedonia, phalanx
    - Alexander the Great: Hellenistic Age
    - Greco-Persian Wars
  - Northern Europe:
    - Hadrian's Wall, Caledonia, William Wallace
    - Vikings: Leif Ericson
  - Central and Eastern Europe:
    - Gaul
    - Romance, Germanic, and Slavic languages
- Rome:
  - Land: Apennine Peninsula, Italy, Alps, Po River, Tiber River
  - People: Italians, Latins, Etruscans, Greek influence
  - Life in Rome: home, education, roads, bridges, tunnels, aqueducts, concrete, government, Roman Republic, patricians, plebeians
  - How Rome conquered the world: Punic Wars, Julius Caesar, Rubicon River, dictator, Mark Antony, Pompeii
  - Roman Empire: Augustus Caesar, Pax Romana
  - Roman accomplishments: Pantheon, Colosseum, Appian Way, aqueducts, Latin alphabet
  - Christianity:
    - Birth and early ministry of Christ, spread of the Gospel
    - Nero and the persecution of Christians: colosseum, gladiators, the catacombs
    - Rise of Constantine
  - Fall of Rome
- England and the British Isles:
  - Middle Ages:
    - Charlemagne, Holy Roman Empire, Eastern Orthodox Church
    - End of the Byzantine Empire
    - Monasteries, convents, crusades, Waldensians, Inquisition, John Wycliffe, John Huss
    - Invention of printing press: Johann Gutenberg, Gutenberg Bible
    - Martin Luther and the Protestant Reformation: indulgences, purgatory, Ninety-Five Theses
    - Feudalism, Domesday Book

History & Geography cont.

History Study cont.

- Great events in English history:
  - Magna Carta, Elizabethan Age, 1611 KJV
  - Age of Puritans:
    - Puritans and science, Wesleyan Revival
  - Rise of industry, Victorian Age
  - World War II: Neville Chamberlain, Winston Churchill, Elizabeth II
- England: land and people, Pennine Chain, London, Thames, the Chunnel
  - Ireland, Scotland, and Wales: "Emerald Isle"; potato famine; Republic of Ireland; Northern Ireland; Scottish Highlands; Mary, Queen of Scots; John Knox
- Western Europe: Austria, Belgium, Luxembourg
  - Thirty Years' War
  - Switzerland:
    - Ulrich Zwingli, John Calvin
  - Germany:
    - World War I: Wilhelm II, U-boats, Treaty of Versailles
    - World War II: Adolf Hitler, Holocaust, V-E Day
    - Iron Curtain, Berlin Airlift, Berlin Wall
  - Netherlands: Eighty Years' War
- Northern Europe: Jutland Peninsula, Scandinavian Peninsula, Norway, Sweden, Denmark, Greenland, Finland, Iceland
- Eastern Europe: Baltic States, Poland, Ukraine, Czech Republic, Hungary, Romania, Bulgaria, Albania, Former Yugoslav Republics, Greece
- Southern Europe:
  - Italy:
    - Exploration, science, and culture:
      - John Cabot, Amerigo Vespucci, Galileo, Leonardo da Vinci, Raphael, Michelangelo
    - Benito Mussolini
  - France:
    - Hundred Years' War, Joan of Arc, Jacques Cartier, Samuel de Champlain
    - Reformation: John Calvin, Huguenots
    - Enlightenment
    - French Revolution
    - Napoleon Bonaparte
    - Charles de Gaulle
  - Spain: King Ferdinand and Queen Isabella, Christopher Columbus, Juan Ponce de León, Vasco de Balboa, Hernando Cortés, Francisco Franco
  - Portugal: Bartolomeu Dias, Pedro Cabral, Ferdinand Magellan
- Africa: Continent of Wonders
  - Oral cultures, hieroglyphics, Suez Canal, Great Rift Valley, Horn of Africa, Sahara Desert
  - Highlights of African history:
    - Land of Phut, Sahara, Land of Cush
    - Ethiopian eunuch, Queen of Sheba, early Christians in North Africa
  - Scramble for Africa and missions:
    - Malaria, yellow fever, sleeping sickness, slave trade
    - David Livingstone
- Northern Africa:
  - Egypt:
    - Egypt's beginning: early river civilizations, the Nile River
    - Dynasties: King Tut, Menes, Khufu, Thutmose III, Queen Hatshepsut
    - Building projects of the pharaohs: irrigation and flood control, shadoof, pyramids, Great Sphinx, obelisks, Valley of the Kings,
    - Everyday life in ancient Egypt: people, education, food
    - Papyrus plant: first paper, hieroglyphics, Rosetta Stone
    - Modern Egypt
      - Gamal Abdel Nasser, Anwar el-Sadat, Aswan High Dam
  - Sudan, Libya, Tunisia, Algeria, Morocco
- Western and Central Africa: Liberia, Ghana, Togo, Nigeria, Gabon, Democratic Republic of the Congo, São Tomé and Príncipe, Eritrea, Djibouti, Ethiopia, Somalia
- Eastern Africa: Uganda, Kenya, Tanzania
- Southern Africa: Zambia, Zimbabwe, Botswana, Madagascar
  - South Africa: Boers, Shaka, apartheid, Nelson Mandela
- Australia and beyond:
  - Australia: "Island Continent," land and climate, Great Barrier Reef, plants and animals, history, government, cities, country life, industry and resources, Captain James Cook
  - Oceania: Polynesia, New Zealand, Samoa, Soloman Islands, Fiji
  - Antarctica: discovery and exploration, Roald Amundsen, Richard Byrd, Antarctic Treaty

Memory Work

- 6 documents:
  - The American's Creed
  - Portion of The Declaration of Independence
  - Preamble to the Constitution
  - First Amendment to the Constitution
  - The Rights of Americans
  - Lincoln's Gettysburg Address
- States and capitals
- 45 U.S. Presidents

Geography Study

- Atlas facts memorized:
  - Eastern Hemisphere: political map of nations, cities, states, bodies of water, oceans
  - World: physical maps of rivers, seas, deserts, mountain ranges, mountains
  - Kingdoms and empires of the ancient world
  - Landforms
  - U.S. states and capitals
- Continent facts memorized:
  - Asia: countries, capital names, locations; continent facts, seas, rivers, mountain ranges, mountains, deserts
  - Africa: countries, capital names, locations; continent facts, rivers, deserts, mountain ranges, mountain
  - Europe: countries, capital names, locations; continent facts, seas, rivers, mountain ranges, mountains
  - Australia, Oceania, and Antarctica: countries, capital names, locations; continent facts, mountain ranges, desert, islands
- Geography terms and facts memorized:
  - Circle of the earth:
    - Sphere
    - Diameter, circumference
  - Oceans
  - Seas
  - Seven continents:
    - Earth's hemispheres:
      - Northern, southern
      - Eastern, western

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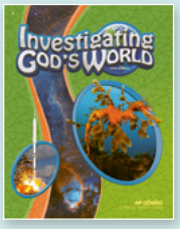
History & Geography cont.

Geography Study *cont.*

- Latitude and longitude:
  - Parallels of latitude, tropics, meridians
  - Poles, Equator
- ➤ Bodies of water: gulf, strait, channel
  - ➤ Rivers:
    - ➤ Tributary, mouth, delta
    - Upstream, downstream
- ➤ Landforms: plains, plateaus, hills, mountains
- ➤ Mountains and mountain ranges: sea level, altitude, peak, summit; volcano, dormant, extinct
- ➤ World's greatest deserts
- ➤ Climate zones
- ➤ Tropical rainforests
- ➤ Tropical savannas

Science



Dive into the exciting world of science with *Investigating God's World*. Your fifth grader will build a strong understanding of earth, life, and physical sciences while deepening their reverence for God as the Creator. Through engaging, hands-on activities and demonstrations in the "Observe to Understand" and "Try This!" sections, abstract concepts—such as star formation, chemical and physical weathering, climate change, seismic waves, and density—become practical and relatable to everyday life. Helpful features like diagrams, Comprehension Checks, Terms boxes, and Chapter Concepts Review sections reinforce learning, promote memorization, and prepare students for written evaluations.

Added Enrichment

- Hands-on learning activities in daily lessons
- Worksheets/Activities/Experiments/Journal in STEM Activities (51)

Evaluation

- Quizzes (21)
- Tests (6)
- 9-weeks exams (2)
- Semester exam (1)

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

Earth Science (Unit 1)

Science Investigation

- Nature of science:
  - ➤ Investigation
  - Science, technology
  - History of the scientific method:
    - ➤ Ptolemy, Copernicus, Galileo
    - Sir Francis Bacon
  - Steps of the scientific method:
    - Hypothesis:
      - ➤ Cause and effect
    - Data
  - Order in nature
  - Branches of science
- Experimental process:
  - Forming the hypothesis: choosing a good question, making a prediction
  - Planning the experiment:
    - Variables: independent, dependent, controlled
  - ➤ Performing the experiment:
    - ➤ Groups: control, experimental
- Graphs and concept maps:
  - ➤ Concept map: examples (information table, tree chart, Venn diagram, graphic organizer, flow chart)
  - Graphs:
    - Circle/pie graph: sector
    - Bar graph: interval
    - Line graph: point, trend
- Evaluating data:
  - Conclusion
  - ➤ Expected and unexpected results: inconclusive data
  - ➤ Laws and theories
  - ➤ Scientific collaboration
- Laboratory procedures:
  - Laboratory tools:
    - Thermometer, scale, beaker, flask, test tube, eyedropper, funnel, hand lens, microscope, binoculars, telescope, clock, timer, stopwatch
    - ➤ Calculator, computer, compass, strainer
  - Laboratory safety:
    - ➤ Detailed tips

Astronomy

- What is astronomy?
  - ➤ Term: astronomy
  - Origin of the universe:
    - ➤ Worldview
    - ➤ Two worldviews: Creation scientist, special creation, evolution, evolutionary scientist
    - ➤ Big bang hypothesis
  - ➤ What is a star?
    - ➤ Light-year
    - ➤ Core, corona, photosphere
  - ➤ Maria Mitchell
- Stars:
  - ➤ Size
  - Color: sun as yellow star
  - ➤ Magnitude: apparent, absolute
  - ➤ Creation science: star ages
  - Galaxy:
    - Milky Way
    - ➤ Nebula
    - ➤ Local Group
    - Other galaxies: Andromeda, Large and Small Magellanic Clouds
- Solar system:
  - Structure:
    - ➤ Geocentric, heliocentric, ellipse
    - Gravity

Science *cont.*

Astronomy *cont.*

- Planets: defined
  - ➤ Dwarf planet
- ➤ Creation science: natural laws
- Inner planets:
  - Survey of inner planets
- Outer planets:
  - Survey of outer planets
- ➤ Mary Somerville
- ➤ Other celestial bodies: asteroid, asteroid belt, comet, meteoroid
- Astronomical cycles:
  - ➤ Habitable zone
  - Earth's revolution: year
  - Earth's rotation: axis, day
  - Earth's tilt:
    - Seasons
    - ➤ Equinox, solstice
  - Lunar cycle: satellite, moon phases
  - Constellations:
    - ➤ Scientific definition: 88 zones
    - Seasonal appearance
    - Big Dipper, Great Bear, Little Dipper, Leo the Lion, Herdsman, Southern Cross, Orion, Virgo, Draco, Lyra, Cygnus, Scorpius, Sagittarius, Cassiopeia, Cepheus, Andromeda, Pegasus, Perseus, Canis Major, Geminis, Taurus
    - Stars: Regulus, Denebola, Arcturus, Polaris, Betelgeuse, Rigel
    - ➤ Survey of constellations by season
    - ➤ Creation science: star formation
- Space exploration:
  - Beginning of the space age:
    - ➤ Sputnik
    - NASA, early astronauts
  - Space stations:
    - ➤ International Space Station
  - ➤ Space telescopes:
    - ➤ Hubble Space Telescope
    - ➤ James Webb Space Telescope
    - ➤ Exoplanets
    - ➤ Creation science: amazing design
  - ➤ Mars exploration
  - ➤ Private spaceflight: SpaceX

Activities & Demonstrations

- ➤ Demonstrate apparent and absolute magnitude.
- ➤ Locate the Milky Way.
- ➤ Observe how thermal energy is affected by distance.

Geology

- Geosphere:
  - Terms:
    - Geology
    - ➤ Geosphere
  - ➤ Origin of the theory of evolution: uniformitarianism, Lyell, Darwin
  - Biblical account of Creation:
    - Creation science: Noah's ark as a picture of faith
  - Noah's Flood:
    - ➤ Flooding Stage, Recessive Stage
    - Creation science: water vapor canopy
    - Creation science: Grand Canyon
- Structure of the geosphere:
  - Layers: crust, mantle, magma, core
  - Tectonic plates and plate movement:
    - ➤ Term: plate tectonics
  - Volcanoes:
    - ➤ Magma chamber
    - ➤ Overview of types (cinder-cone, shield, composite)
    - ➤ Paricutin volcano
  - Earthquakes:
    - Fault, epicenter
    - ➤ Hypocenter
  - Mountains:
    - Types:
      - ➤ Volcanic, domed
      - Fault-block, folded
    - ➤ Mount Everest: Sir Edmund Hillary
- Minerals, soils, and rocks:
  - Mineral defined
  - Soil horizons:
    - Humus, topsoil, subsoil, bedrock
    - ➤ Organic horizon, substratum
    - ➤ Horizon letters, comparison of horizons
  - Rock types:
    - Igneous:
      - ➤ Volcanic and plutonic
      - ➤ Basalt
      - Obsidian, pumice, granite
    - Sedimentary:
      - ➤ Strata
      - ➤ Conglomerate
      - Sandstone, shale, limestone
    - Metamorphic:
      - Marble, slate
      - ➤ Quartzite
  - Rock properties: luster, texture, hardness (scratch test), color (streak test), cleavage (fracture)
  - Creation science: recyclable rocks
- Weathering, erosion, and deposition:
  - ➤ Interaction between atmosphere, biosphere, hydrosphere, and geosphere
  - Weathering:
    - ➤ Chemical weathering, physical weathering
  - Erosion and deposition:
    - ➤ Term: deposition
    - ➤ Role of glaciers and wind in erosion and deposition; moraine
    - ➤ Creation science: planation surfaces
- Fossils:
  - ➤ Fossil record, paleontologist
  - Fossil formation, transitional form
  - ➤ Work of a paleontologist, bone bed
  - ➤ Interpreting the fossil record: Creationist versus evolutionist views, geologic column
  - ➤ Mary Anning
- Precious metals, precious stones, and energy sources:
  - ➤ Metals: ore; important and valuable metals (gold, silver, copper, iron, aluminum, platinum, uranium)
  - ➤ Precious and semiprecious stones (diamond, ruby, sapphire, emerald, aquamarine; amethyst, garnet, lapis lazuli, turquoise, jade, opal)

Science *cont.*

Geology *cont.*

- Fossil fuels:
  - Coal
  - ➤ Emissions
  - ➤ Petroleum/crude oil, natural gas
- Alternative energy/renewable energy:
  - ➤ Geothermal energy
  - Solar energy, wind power, hydropower
  - ➤ Biofuel

Activities & Demonstrations

- ➤ Demonstrate the Recessive Stage of Noah's Flood.
- ➤ Demonstrate tectonic plate activity.
- ➤ How acids affect shells and rocks
- ➤ Demonstrate chemical and physical weathering.
- Excavate a "fossil."

Marine Geology

- Hydrosphere:
  - ➤ Term: hydrosphere
  - Importance of water:
    - Needed by living things
    - ➤ Helps regulate climate
    - Salt versus fresh water
  - Oceans:
    - Oceanography
    - Salinity
  - ➤ Drainage: tributaries, drainage basin, aquifer, drainage divide, continental divide
  - ➤ Old Faithful
- Ocean movements:
  - Ocean waves:
    - Wave definition, tsunamis
    - ➤ Circular movement of water
  - Tides:
    - High, low tides
    - ➤ Spring, neap tides
  - ➤ Matthew Maury
  - Ocean currents:
    - ➤ Surface currents
    - ➤ Subsurface currents, upwellings
- The coast:
  - ➤ Shoreline: shore, longshore drift
  - Coastal features:
    - ➤ Sandbars, barrier islands
    - Estuary, salt marsh
  - ➤ Ocean conservation
- Continental margin and ocean floor:
  - ➤ HMS *Challenger*
  - Continental margin:
    - ➤ Term: continental margin
    - Continental shelf
    - ➤ Continental crust, oceanic crust, continental slope, continental rise
  - Ocean floor:
    - Abyssal plain, ocean trenches:
      - ➤ Exploration of the deep ocean: *Trieste*, *Alvin*
    - ➤ Ooze, seamounts, mid-ocean ridges, rifts, subduction, hydrothermal vents
    - ➤ Creation science: guyots

Activities & Demonstrations

- Create a saltwater solution.

Meteorology

- Atmosphere:
  - Meteorology:
    - ➤ History of meteorology
  - Atmosphere as gases:
    - Comparison of gases with solids and liquids
    - ➤ Atmosphere as layer of gases held by a planet's gravity
    - Mixture of gases in the atmosphere
  - Atmosphere layers:
    - Lower atmosphere:
      - ➤ Troposphere, tropopause
    - Middle atmosphere:
      - ➤ Stratosphere, mesosphere
      - ➤ Term: ozone layer
    - Upper atmosphere:
      - ➤ Thermosphere, exosphere
    - ➤ Earth's magnetic field: importance, auroras
- Weather and climate:
  - ➤ Meteorologist
  - ➤ Luke Howard: Father of Meteorology
  - Weather versus climate
  - ➤ United States Weather Bureau
  - ➤ Climatologist
  - ➤ Köppen Climate Classification System:
    - Arid, temperate
  - Solar radiation and the greenhouse effect:
    - ➤ Greenhouse gases
    - ➤ Creation science: climate change
- Hydrologic cycle/water cycle:
  - Evaporation: transpiration, relative humidity, dew point, hygrometer
  - Condensation and cloud formation: requirements for condensation, role of condensation nuclei, relationship to dew point
  - ➤ Cloud classification: cumulus, stratus, cirrus
  - Precipitation: definition, nimbus clouds, rain and snow gauges
  - ➤ Cloud atlas
- Winds and air masses:
  - Air rising and falling based on temperature
  - Air pressure and wind: air pressure, wind, barometer, weathervane, anemometer
  - Global winds: uneven warming of Earth; latitude variation
  - Types of wind
  - Fronts and air masses:
    - Air mass, source region, overview of types
    - ➤ Warm front, cold front, relative speeds
  - Jet stream: effect on storms
- Thunderstorm systems:
  - ➤ Cumulonimbus cloud (thunderhead) formation:
    - Updraft, downdraft
  - Hail, lightning, stepped leader
  - Tornado, tornado watch, tornado warning
  - ➤ Enhanced Fujita Scale of Tornado Damage Intensity
  - ➤ Storm safety
- Hurricanes and other natural disasters:
  - Cyclone formation:
    - Hurricane
    - ➤ Saffir-Simpson Hurricane Wind Scale
    - Eye, eyewall, storm surge

Science *cont.*

Meteorology *cont.*

- Recovering from natural disasters

Activities & Demonstrations

- ➤ Demonstrate the greenhouse effect.
- ➤ Make a pinecone hygrometer.
- ➤ Make your own anemometer.
- ➤ Make an updraft tower.
- ➤ Make your own weather station.

Life Science (Unit 2)

Biology

- ➤ The living cell:
  - ➤ Biosphere:
    - Organism
  - ➤ Cell structure:
    - ➤ Cell membrane, cytoplasm, organelle, nucleus
    - ➤ Robert Hooke, Antonie van Leeuwenhoek
    - ➤ Heredity
  - ➤ Creation science: DNA
- ➤ Classifying organisms:
  - ➤ Taxonomy:
    - ➤ Carl Linnaeus
    - ➤ Microorganisms
  - ➤ Six Kingdoms: Animalia, Plantae, Fungi, Protista, Eubacteria, Archaebacteria
    - ➤ Multicellular, unicellular
    - ➤ Bacterium
  - ➤ Two types of cells:
    - ➤ Prokaryote, eukaryote
  - ➤ Creation science: the flagellum
- ➤ Kingdom Animalia:
  - ➤ Zoology
  - Vertebrate characteristics:
    - ➤ Endoskeleton
  - Invertebrate characteristics:
    - Exoskeleton
  - ➤ Symmetry, asymmetry, bilateral symmetry, radial symmetry
  - Arthropods:
    - Characteristics of arthropods
    - Crustaceans, arachnids, centipedes, millipedes
  - Great Scientist: Jean Henri Fabre
- Insect life cycles:
  - An insect's head:
    - Simple eye, compound eye
    - ➤ Sensilla, mandibles
  - An insect's thorax
  - An insect's abdomen:
    - Spiracles, trachea, ovipositor
  - Metamorphosis:
    - Complete metamorphosis, incomplete metamorphosis
  - ➤ The law of biogenesis, Francesco Redi
  - ➤ Creation science: eye design
- ➤ Kingdom Plantae:
  - ➤ Botany
  - Process of photosynthesis:
    - ➤ Cell wall, chloroplast, glucose
  - ➤ Cellular respiration
  - ➤ Vascular plants, nonvascular plants:
    - ➤ Types of tissue: xylem, phloem
    - ➤ Stomata
  - ➤ Great Scientist: Carl Linnaeus
- Life cycle of a seed plant:
  - Cone-bearing seed plants:
    - Conifer trees
  - Flowering seed plants:
    - Broadleaf trees, deciduous
  - Pollination and fertilization of flowering plants:
    - Pistil, stamen, ovary, ovule
    - Pollination, fertilization
    - Embryo, endosperm, cotyledon
  - Germination and growth
- Life cycle of a seedless plant:
  - Spores
  - Two forms of a fern
  - Life cycle of a fern:
    - ➤ Rhizome, fronds, rhizoids
  - Seedless nonvascular plants:
    - ➤ Hornworts, liverworts
  - Creation science: Did plants evolve?

Activities & Demonstrations

- ➤ Observe an egg's membrane.
- Dissect a flower to observe its reproductive parts.
- ➤ Observe fern spores under a microscope.

Marine Biology

- ➤ Arthropods of the ocean:
  - ➤ Marine biology and taxonomy:
    - ➤ Phylum, class
  - ➤ Crustaceans: shrimp, lobster, crab:
    - ➤ Tissue, organ
    - ➤ Carapace: shell of crustacean
    - Scavenger, range
  - ➤ Sea spiders and horseshoe crabs
  - ➤ Creation science: living fossils
- ➤ Mollusks and cnidarians:
  - ➤ Mollusk phylum:
    - ➤ Bivalves: clams, mussels, oysters
      - Parasite, host
      - ➤ Nacre
    - ➤ Univalves: cowries, conchs, and whelks:
      - Carnivore, herbivore
    - Octopus, squid:
      - Regenerate, jet propulsion
  - ➤ Cnidarian phylum:
    - ➤ Polyp, medusa
    - Jellyfish
    - Sea anemones and corals
- ➤ Echinoderms, poriferans, annelids, and protozoa:
  - Starfish, sea urchin:
    - Omnivore
  - ➤ Sea sponge
  - ➤ Annelids: segmented worms
    - Setae
  - ➤ Protozoa:
    - Phytoplankton, zooplankton
    - ➤ Flagellate, amoeba, pseudopod

Science *cont.*

Marine Biology *cont.*

- Fish of the sea:
  - Fish body design and function:
    - Gills, swim bladder, lateral line, dorsal fin, caudal fin
  - Bony fish:
    - Salmon, tuna, sailfish, lantern fish, hatchet fish
    - Spawn
    - Bioluminescence: nature's light show
  - Cartilaginous fish:
    - Denticle, pups, spiracles
    - Largest great white shark
    - Shark safety
    - Rays and skates
- Marine reptiles:
  - Sea turtles:
    - Scute, clutch
    - Instinct
  - Crocodiles
  - Sea snakes:
    - Lateral undulation, fangs
  - Lizards:
    - Creation science: marine iguanas
  - There are no marine amphibians.
- Water birds:
  - Bird body design and function:
    - Plumage, preen, crop, gizzard
  - Nesting, incubation:
    - Precocial birds, altricial birds
  - Notable water birds: arctic tern, brown pelican, great blue heron, stilt sandpiper
  - Migration, rookery, flyway
- Marine mammals:
  - Whales:
    - Fluke, blubber, calves, pod
    - Toothed whale:
      - Sperm whale, beluga whale, narwhal
      - Dolphin, porpoise, orca
      - Echolocation
    - Baleen whale:
      - Humpback whale
  - Pinnipeds:
    - Walruses, seals, sea lions
    - Seal and sea lion babies are called pups
  - Manatees and dugongs

Activities & Demonstrations

- Start a seashell collection.
- Demonstrate buoyancy.
- Demonstrate why polar waters do not freeze.

Ecology

- The biomes of the biosphere:
  - What is a biome?
    - Terrestrial biomes, aquatic biomes
  - What is an ecosystem?
    - Community, population, biodiversity
  - The history of ecology
  - Ecology: the study of ecosystems
  - Levels of ecology: biosphere, biome, ecosystem, community, population, organism
  - Biotic factors:
    - Niche, interdependence
    - The food chain:
      - Primary producers, primary consumers, secondary consumers, apex predators
      - Detritus, decomposers
    - Food webs:
    - Creation science: the nitrogen cycle
  - Abiotic factors:
    - Tolerance range, optimum range
    - Temperature:
      - Solar radiation
    - Sunlight:
      - Direct sunlight, indirect sunlight
    - Wind, water, air, soil
  - Ecological relationships and ecological change:
    - Ecological relationships: symbiosis, mutualism, parasitism, predation, competition
    - Ecological changes: extinction, ecological succession
- Terrestrial biomes:
  - The tundra biome:
    - Arctic tundra, permafrost
    - Alpine tundra, tree line
- The grasslands biome:
  - Temperate grassland, prescribed burning
  - Tropical grassland, browsers, savanna
- The desert biome:
  - Rain shadow, subtropical deserts, coastal deserts, semi-arid desert
  - Creation science: kangaroo rat
- What makes a forest?
  - Undergrowth, closed and open canopy, carbon sink, clear-cutting, sustainable forestry
  - Camping safety tips
- Temperate deciduous forest biome: grows in climates that have four seasons
  - Dormancy
- Boreal forest biome: contains mostly coniferous trees
- Tropical rainforest biome

Activities & Demonstrations

- Create an ecology pyramid.
- Observe biotic factors interacting with abiotic factors.
- Observe plant transpiration.

Marine Ecology

- Aquatic biomes:
  - Freshwater biomes
  - Marine biomes:
    - Vertical zones: sunlight, twilight, midnight, abyssal, hadal zones
    - Horizontal zones: intertidal, neritic, oceanic
    - Why is the ocean blue?
- The intertidal zone:
  - Regions of the intertidal zone: splash, high tide, middle, low tide regions
  - Ecosystems of the intertidal zone:
    - Seashores, estuaries
- The neritic zone:
  - Life in the neritic zone, sessile
  - Sea sponges

Science *cont.*

Marine Ecology *cont.*

- ➤ Ecosystems of the neritic zone:
  - ➤ Seagrass meadows
  - ➤ Kelp forests
  - ➤ Coral reefs, lagoon
- ➤ Creation science: the Great Barrier Reef
- The oceanic zone and below:
  - The vertical zones of the ocean:
    - Photosynthesis in the sunlight zone
    - Dim twilight zone
    - ➤ Strange creatures of the midnight zone
    - ➤ The mysterious abyss, marine snow
    - ➤ The trenches of the hadal zone
  - ➤ Deep-sea ecosystems of the oceanic zone:
    - ➤ Seamounts
    - ➤ Shipwrecks and whale falls
    - ➤ Hydrothermal vents, chemosynthesis
  - ➤ Caring for the ocean

Activities & Demonstrations

- ➤ Observe protists in pond water under a microscope.

Physical Science (Unit 3)

Chemistry

- ➤ Physical science: study of matter and energy
  - Matter, motion, inertia, force, energy
  - ➤ Branches of physical science: chemistry, physics
- Properties of matter:
  - Physical properties:
    - Measurable physical properties: mass, weight, volume, density
    - Observable physical properties: state of matter
      - Solid, liquid, gas
  - ➤ Chemical properties
  - ➤ Plasma, the fourth state of matter
- ➤ Physical changes in matter:
  - ➤ Transitions between states of matter: melting, evaporation, condensation, and freezing
    - Melting point, boiling point, freezing point
    - ➤ Vaporize: liquid becomes a gas
    - ➤ Temperature scales
- ➤ Atomic theory of matter:
  - Atom, element
  - ➤ Aristotle, Robert Boyle
  - ➤ Discovery of the atom and the atomic theory of matter:
    - ➤ Antoine Lavoisier: Father of Chemistry
    - ➤ John Dalton
  - Structure of an atom:
    - ➤ Subatomic particles
    - Nucleus: proton, neutron
    - Electron
  - ➤ Atomic number
- ➤ Periodic table of the elements:
  - ➤ Dmitri Mendeleev
  - ➤ Chemical symbols
  - ➤ Types of elements:
    - ➤ Metal, nonmetal, semimetal
  - ➤ Molecule, compound:
    - ➤ Chemical change
    - ➤ Creation science; spontaneous generation
- ➤ Homogeneous mixtures:
  - Mixture
  - Solution:
    - ➤ Solubility
    - Parts of a solution: solute, solvent
    - ➤ Concentration
    - ➤ Dissolving rate
- ➤ Heterogeneous mixtures:
  - ➤ Suspension
  - ➤ Colloid
  - ➤ Law of conservation of mass
- ➤ Separating mixtures:
  - ➤ Filtration, sifting, evaporation, skimming, magnetism
- ➤ Chemical changes in matter:
  - ➤ Chemical reaction
  - ➤ Parts of a chemical reaction: reactant, product
  - ➤ Evidence of chemical reactions
  - ➤ Creation science: early chemists
- ➤ pH scale:
  - ➤ Salt
  - ➤ Acid, base, neutral

Activities & Demonstrations

- ➤ Demonstrate the results of heating and cooling matter.
- ➤ Demonstrate matter.
- ➤ Demonstrate varying concentrations of a solution.
- ➤ Observe suspensions and determine which ingredient has the greatest density.
- ➤ Observe a chemical reaction with vinegar and baking soda.
- ➤ Perform chemical analysis to determine if a material is acidic or basic.

Energy

- What is energy?
  - Energy does work and changes matter.
  - Converted energy:
    - Kinetic energy
    - Potential energy
  - ➤ Mechanical energy
  - ➤ Nonmechanical energy
  - ➤ Law of conservation of energy
  - Transferred, or transmitted, energy
  - Creation science: God transcends natural laws
- Thermal energy:
  - ➤ Temperature
  - ➤ Heat:
    - ➤ Joule: unit of energy
  - ➤ Ways heat moves:
    - ➤ Conduction:
      - Conductor, insulator
    - ➤ Convection
    - ➤ Radiation
- Electrical energy:
  - Static electricity:
    - ➤ Electricity, electric charge
    - ➤ Voltage, volt (V)
    - ➤ Grounding

Science *cont.*

Energy *cont.*

- Current electricity: the flow of electrons along a path called a circuit
  - Generator
  - ➤ Load
  - Closed circuit
  - Open circuit
  - ➤ Measuring energy (with volts and amps)
- Wave energy:
  - How waves work:
    - ➤ Medium
    - ➤ Oscillation
  - Structure of a wave:
    - ➤ Wave train, crest, trough, resting position
  - ➤ Types of waves:
    - ➤ Transverse waves
    - ➤ Longitudinal waves:
      - ➤ Compressed
  - ➤ Seismic waves
- Properties and behavior of waves:
  - Wavelength, amplitude, frequency, speed:
    - ➤ Hertz (Hz)
  - ➤ Reflected wave, refracted wave
  - ➤ Refracted seismic waves
- Light waves and electromagnetic energy:
  - Luminous objects
  - ➤ Robert Hooke, James Clerk Maxwell, Max Planck, Albert Einstein
  - ➤ Physicist
  - ➤ Electromagnetic wave, vacuum, visible light
  - Light reflection
  - Light refraction:
    - ➤ Convex, concave lens
  - Light transmission:
    - Transparent, opaque, translucent
- Sound waves:
  - ➤ Acoustics
  - ➤ Pulses of longitudinal waves: compression and rarefaction pulses
  - ➤ Intensity, decibels (dB)
  - ➤ Pitch, audible sounds, echo
  - ➤ Timbre

Activities & Demonstrations

- ➤ Observe static electricity jump from one charged object to another and discharge.
- ➤ Observe the magnetic field created by an electrical current by creating an electromagnet.
- ➤ Test materials for light absorption and reflection.

Force and Motion

- Action of forces:
  - Motion, work, force, inertia
  - Balanced and unbalanced forces
  - ➤ Contact and noncontact forces
  - Creation science: laws of motion
- Contact forces:
  - ➤ Tension force
  - ➤ Spring force
  - ➤ Normal force
  - ➤ Frictional force:
    - ➤ Drag force, fluid
    - ➤ Air resistance, water resistance
- Noncontact forces:
  - Force field
  - Magnetic force:
    - Polarity
  - Electric force
  - Gravitation force:
    - Weight
- Newton's first law of motion:
  - Sir Isaac Newton, newton (N)
  - Inertia
  - ➤ Calculating motion:
    - ➤ Speed equation
  - ➤ Graphing motion:
    - ➤ Motion graphs
- Newton's second law of motion:
  - ➤ Acceleration:
    - ➤ Positive acceleration
    - ➤ Negative acceleration
  - ➤ Quantifying motion:
    - ➤ Momentum
  - ➤ Graphing acceleration
  - Collisions
- ➤ Newton's third law of motion:
  - ➤ Action force
  - ➤ Reaction force:
    - ➤ Thrust
- Buoyancy and lift:
  - Objects that float on water through buoyancy:
    - Displaced water
    - Surface area
  - Objects that reduce drag:
    - Streamlining
  - Achieving lift:
    - Foils, lift
  - Balloons use buoyancy
- Simple machines:
  - ➤ Mechanical advantage
  - ➤ Input, output
  - Lever:
    - Fulcrum, pivot, load
    - ➤ Input arm, output arm
  - Wheel and axle
  - Pulley
  - Inclined plane
  - Wedges and screws
- ➤ Engineering design:
  - ➤ Technology, engineers
  - ➤ Engineering design process (six steps):
    - ➤ Criteria, constraint
    - ➤ Prototype
  - ➤ Branches of engineering
  - Glorifying God through investigation

Activities & Demonstrations

- ➤ Observe contact and noncontact forces.
- ➤ Construct and test a parachute to demonstrate air resistance.
- ➤ Identify lines of magnetic force.
- ➤ Observe negative and positive acceleration after collisions.
- ➤ Test a boat for thrust.
- ➤ Create and test a paper airfoil.

Health

Through the new *Enjoying Good Health*, students will gain a deeper knowledge of the anatomy and function of each of the body systems. Fifth graders will learn about nutrition, fitness, hygiene, and safety concepts that they can apply in their own lives. This knowledge will help them to understand the influence of healthy habits on physical, mental, and spiritual health. Hands-on Health and Live It Out! activities provide practical applications of concepts.

Added Enrichment

- Comprehension Checks; Chapter Reviews
- Additional Enrichment/Hands-On Activities
- Worksheets

Evaluation

- Quizzes (7)
- Tests (2)
- 9-weeks exam (1)

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

Enjoying a Healthy Life

- Fearfully and wonderfully made
  - Anatomy
  - ➤ Health stewardship
    - Health
    - ➤ Factors that affect health: health behaviors, genetic and environmental factors
    - ➤ Health stewardship skills
      - ➤ Understand how the body works.
      - ➤ Develop good health habits.
      - ➤ Set health goals and make plans to meet goals.
      - ➤ Seek help and support.
      - ➤ Help others maintain good health.
    - ➤ Finding health information and services
      - ➤ Reliable, current, unbiased sources
  - ➤ Physician

Cells, Tissues, Organs, and Systems

- Human anatomy
  - Cell, tissue, organ, system
  - ➤ Organ donation
- Circulatory system
  - Blood
    - Plasma, red blood cell, hemoglobin, white blood cell, platelet
  - Pumping blood
    - Circulation, heart
    - Blood vessels
      - Arteries, capillaries, veins
  - Cardiologist
- ➤ Respiratory system
  - ➤ Respiratory organs
    - ➤ Pharynx, trachea, larynx, bronchi, lungs, bronchioles, alveoli
  - ➤ Breathing process
  - ➤ Respiration, diaphragm
  - ➤ Air pollution
  - ➤ Pulmonologist
- ➤ Two systems in coordination
  - Pumping heart
    - Septum, atria, ventricles
    - ➤ Venae cavae, aorta
  - Blood pressure, pulse
  - Aerobic endurance, lung capacity, atherosclerosis
  - Managing asthma

Activities & Demonstrations

- ➤ Make a stethoscope.
- ➤ Live It Out! Stewardship: air pollution
- ➤ Live It Out! Planning for aerobic endurance
- ➤ Recipe: heart-healthy snack platter

The Nervous System

- Neurology
  - Nervous system
  - Parts of the nervous system
  - Neurologist
  - ➤ Neurons
    - ➤ Cell body, dendrite, axon
- Central nervous system
  - Brain
    - Cerebrum, cerebellum, brain stem, limbic system
    - ➤ Brain development
  - Spinal cord, reflex
- Peripheral nervous system
  - Nerves
  - Sensory nerve fiber, motor nerve fiber
  - ➤ Sense receptor
  - ➤ Spinal nerves, cranial nerves
  - ➤ Stress management
- Vision and hearing
  - Structure of the eye
    - Sclera, cornea, pupil, iris, lens, retina, optic nerve
  - ➤ Protecting your eyes
  - ➤ Eye diseases
  - Structure of the ear
    - Outer ear, auditory canal, eardrum, middle ear, inner ear, cochlea, auditory nerve, semicircular canals
  - ➤ Protecting your ears, ruptured eardrum
  - ➤ Noise pollution

Activities & Demonstrations

- ➤ Make a neuron model.
- ➤ Live It Out! hearing protection

Nutrition

- Macronutrients
  - Nutrients
  - Carbohydrates, simple carbohydrates, complex carbohydrates, fiber
  - Protein
  - Fats, saturated fats, unsaturated fats, hydrogenated oil
  - ➤ Dietitian

Health *cont.*

Nutrition *cont.*

- Micronutrients
  - Vitamins
    - ➤ Water-soluble vitamins
      - Vitamin C, B-complex vitamins
    - ➤ Fat-soluble vitamins
      - Vitamins A, D, E, and K, carotene
  - Minerals
    - Calcium, phosphorus, magnesium, sodium, potassium
    - ➤ Trace elements, iron, iodine, zinc
  - Liquids
- Nutrient needs
  - Energy for activity
    - Calories, metabolism
  - ➤ Recommended Dietary Allowance
  - Reading food labels
    - Nutrition Facts label
      - Serving size, percent Daily Value, added sugar
    - Ingredients, food allergy, allergen, anaphylaxis
- Choosing healthy eating
  - MyPlate
    - Balanced diet, vegan
    - Fruits, vegetables, protein, grains, dairy
    - Making nutrition decisions
  - Food safety
    - Storing food, perishable food, nonperishable food
    - Preparing food, cross-contamination
  - ➤ Disordered Eating

Activities & Demonstrations

- ➤ Recipe: build-it yourself baked potato bar
- ➤ Live It Out! Identifying macronutrients
- ➤ Live It Out! Evaluating nutrition claims
- ➤ Live It Out! Making nutrition decisions

The Digestive and Urinary Systems

- Digestion, digestive system, alimentary canal
  - ➤ Types of teeth, saliva, salivary glands, enzymes
  - Esophagus, stomach
  - ➤ Dr. Beaumont and St. Martin
  - Absorption, small intestine, villi
  - Elimination, large intestine
  - ➤ Liver, gallbladder, pancreas
  - ➤ Gastroenterologist
- Hydration and excretion
  - Importance of water
  - ➤ Excretory system
    - ➤ Urinary system, kidneys, bladder
  - ➤ Caffeine
  - ➤ Urologist and nephrologist

Activities & Demonstrations

- ➤ Acid attack

Disease Prevention

- Types of disease
  - Communicable disease
    - Microorganisms, pathogen, bacterium, virus, vector
    - ➤ Effects of diseases
  - Noncommunicable diseases
    - ➤ Heart disease, cancer, diabetes mellitus, obesity
- Immune System
  - Immunity
  - Protective barrier
    - Mucus, cilia, lysozyme
  - White blood cells
    - Phagocyte, lymphocyte, antibodies, histamine, inflammation
  - Vaccinations
- Lymphatic system
  - Tissue fluid, lymph, lymph capillary, lymph vessel, lymph node
  - Tonsils, adenoids, Peyer's patches, spleen, thymus
  - Preventing the spread of pathogens
  - ➤ The CDC

Activities & Demonstrations

- ➤ Recipe: immune-boosting chicken soup
- ➤ See the effects of soap.
- ➤ Live It Out! Family health history

Maintaining Physical Health

- Caring for yourself
  - Puberty, adolescence, hormone
  - Hygiene
  - Integumentary system, epidermis, dermis, hypodermis, hair follicle, sebum
  - Skin care, acne, hair care
  - Dental care
    - Enamel, dentin, pulp, plaque, dental caries
    - ➤ Dentist
- Physical fitness
  - Muscular system
    - Involuntary muscles, voluntary muscles, tendons
    - Trapezius, deltoid, biceps, triceps, abdominal muscles, quadriceps, hamstrings
  - Exercise, muscle tone
    - Aerobic exercise, anaerobic exercise
    - Healthy exercise habits
  - Rest and sleep, lactic acid
    - ➤ Managing screen time
- Skeletal system
  - Structure of a bone
    - Long bone, spongy bone, bone marrow
    - ➤ Types of bones
  - Joints
    - Ligament
    - Types of freely movable joints
  - Axial skeleton
    - Skull, cranium, vertebrae, sternum, rib cage
  - Appendicular skeleton
    - Scapula, clavicle, humerus, ulna and radius, carpal, phalanges, pelvis, femur, patella, tibia, tarsal
  - ➤ Growing pains

Activities & Demonstrations

- ➤ Plaque attack
- ➤ Live It Out! Developing good hygiene habits
- ➤ Exercise to build strength.
- ➤ Recipe: protein-packed yogurt bowl

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

Health cont.

Safety and First Aid

- Staying safe
  - Sports safety
  - Weather safety
    - ➤ Cold-weather safety, frostbite
    - ➤ Warm-weather safety, electrolyte, dehydration, heat exhaustion
    - Sun safety, ultraviolet radiation, SPF
  - Water safety
  - Fire safety
- Being aware, alert, and careful
  - Being aware and alert in public places
  - Being alert to danger
    - ➤ Run-Hide-Fight
  - Being careful about boundaries
    - ➤ Abuse
  - Being careful around others
  - Being careful around bullies
    - ➤ Gang
  - Being careful online
    - ➤ Cyberbullying
- First aid
  - Medical emergency
    - ➤ Check-call-care
  - Burns
  - Bleeding
  - Choking
  - ➤ CPR, cardiac arrest
  - Poisoning, poison
  - Sports injuries
    - Strain, sprain, concussion
- Deciding to say no!
  - Drug, drug misuse
  - Addiction, withdrawal
  - Commonly misused drugs
  - Alcohol, nicotine, marijuana, inhalants, OTC drugs
  - How to say no!

Activities & Demonstrations

- ➤ Live It Out! Preparing for disasters
- ➤ Live It Out! Poison Control

Pursuing a Healthy Spirit

- Spiritual wellness
  - Spiritual birth
  - Spiritual growth
  - Spiritual cleansing
  - Spiritual peace
  - Spiritual development
  - ➤ Character development: courage, trustworthiness, leadership
- Social wellness
  - Friendship
    - Making new friends
    - Being a good friend
    - Being considerate
    - ➤ Respecting personal space
    - Avoiding unhealthy friendships
  - Communication
  - ➤ Communicating online
  - Conflict resolution
- Mental and emotional wellness
  - Healthy thoughts
    - ➤ Self-image
  - Spirit-controlled emotions
    - Anger
    - Fear
    - Jealousy
    - Sadness
    - Grief
  - ➤ God's special plan
    - ➤ God's design for marriage
    - ➤ Special friendships

Activities & Demonstrations

- ➤ Live It Out!: Applying God's Word
- ➤ Live It Out!: Prayer journal
- ➤ Live It Out!: Refusing peer pressure
- ➤ Live It Out!: Coping with emotions

Bible

Fifth-grade Bible is filled with many astounding stories about men and women from the Bible such as Moses, Ruth, Daniel, Samuel, and David. Students will also study Joshua's life and learn how his loyalty to God made him an excellent leader and caused him to triumph in battle. These Bible stories will show students how God can do mighty acts when a person has faith in Him.

Evaluation

- Graded memory verse passages (8)
- Content quizzes (12)

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Lessons *407 Abeka Flash-a-Cards*

- Salvation Series (5 lessons)
- Life of Moses Series (20): Moses in Egypt; Journey to Sinai; Journey through the Wilderness
- Tabernacle (3)
- Crucifixion and Resurrection (9); Life of Samuel (4)
- Life of David Series (13):
  - Young David, David in Hiding
  - ➤ David the King
- The First Thanksgiving