

## 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; 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**

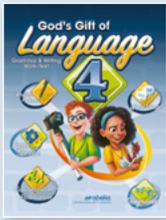
## Reading *cont.*

- *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)
- All quizzes and tests are included in *God's Gift of Language 4 Quizzes and Tests*

► 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/complements
- 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)

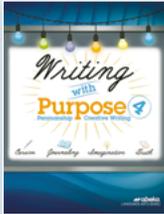
## Language cont.

### 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  $\frac{3}{4}$  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

➤ RED indicates first introduction of content.

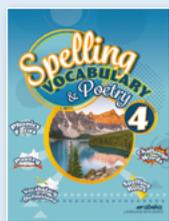
## Penmanship/Creative Writing *cont.*

### 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)

➤ RED indicates first introduction of content.

### 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*.

## 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.

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

## 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**
- $>$ ,  $<$ ,  $=$ ,  $\neq$
- 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**

## 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

## 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

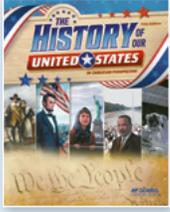
- Plane figures, closed figures, polygons:
  - Quadrilaterals:
    - Parallelogram: rectangle, square, rhombus
    - Trapezoid, kite
  - Pentagon, hexagon, octagon, decagon

- 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
  - $360^\circ$
- 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)

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

## 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; Connor; 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 Obama-care became law
- Tea Party: a conservative political group
- Hurricane Katrina
- Technology in the 2000s: hybrid automobiles, social media, smart-phone
- 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

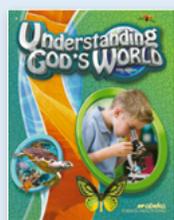
### Topography and Geographical Terms

- 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)
- Chapter Tests (6)
- 9-weeks exam (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 alga, 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.*

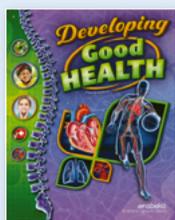
- Year and Earth's revolution
  - Revolve, length of year, leap year, 24-hour day
- Earth's tilt and seasons
- Months and the moon's revolution
- Constellations
  - The Big Dipper, Great Bear, Little Dipper, **Leo the Lion**, **Herdsman**, **Southern Cross**, **Orion**
  - **Stars: Regulus, Denebola, 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**
    - **Armcolite: 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

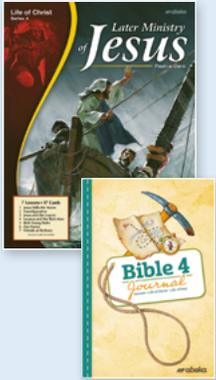
**Health** *cont.***Protection for a Healthy Body**

- 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 36 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 Drill 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

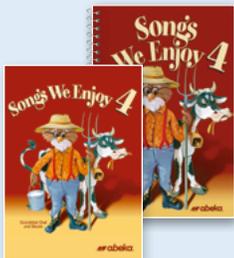
### Prayer Time

- 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

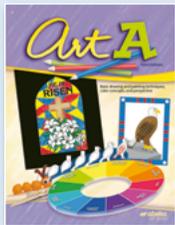
- Follow a song leader while singing with class or CD
- Define and explain 16 unfamiliar words and phrases in lyrics
- Aid in understanding a song's message
- Count a steady rhythm in songs
- Enunciate silly words
- Sing a two-part canon and rounds of 3 or more parts

- 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)

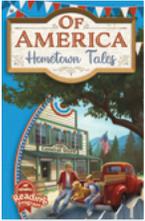
### Technique Development

- 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 three fifth-grade readers. Acquaint readers 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. Let your imagination take you to other lands and times with selections about the Wright Brothers' initiative, Thomas Jefferson's integrity, and the Fighting Red Tails' courage.



### Literary Value

- Well-known authors including Louisa May Alcott, Frances Hodgson Burnett, Beverly Cleary, Rudyard Kipling, Mark Twain, E. B. White, James Whitcomb Riley, Laura Ingalls Wilder, Robert Louis Stevenson, Nathaniel Hawthorne, and Henry Wadsworth Longfellow
- Character-building themes such as initiative, problem solving, optimism, wisdom, friendship, perseverance, responsibility, resourcefulness, generosity, integrity, faith, compassion, and forgiveness



### Materials

- Readers (3) containing:
  - Short stories
  - Poems, plays, songs
  - Informative selections
- Christian fiction novel
- Biographical novel
- Speed and comprehension readers
  - Read and Comprehend Skill Sheets 5
  - *Adventures in Nature*

### Evaluation

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

### Reading Skills Development

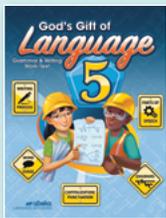
- Read orally and silently with comprehension
- Strive to increase accuracy, fluency, phrasing, alertness to punctuation, expression, appropriate speed, comprehension, volume, poise
- Vocabulary development through words and definitions
- Development of understanding literary types, terms, and concepts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

### Literary Concept Development

- Understanding and applying literary concepts: elements of story—title, author, character, main character, setting, moral, main idea, stanza; elements of poetry—meter, rhyme scheme, alliteration, repetition; elements of plot—introduction, rising action, climax, falling action, conclusion; foreshadowing; elements of play—act, scene, drama, cast, stage directions; figurative language—simile, metaphor, personification, allegory; symbolism; variety of genres: autobiography, biography, fiction, nonfiction, folk literature, legend, fable, biblical narrative; elements that reflect author's style—point of view, narrator, inference, idiom, limericks, onomatopoeia, hyperbole; irony, dialect, dialogue, mood; summary; excerpt
- Summarizing plot
- Predicting endings

- Discerning fact from opinion
- 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 folktales, fables, legends, myths, fairy tales, parables, Scripture, informative selections
- Distinguishing fantasy from reality
- Charting information: word webs, Venn diagrams, compare/contrast, predict possible outcomes, create a playbill, analyze characters, analyze plot
- 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 fiction/nonfiction
- Providing evidence from text to support analysis
- Discerning author's intent
- Recognizing themes in literature
- Recognizing and implementing good creative writing techniques

## Language Arts: Language



As well as providing a thorough review of capitalization, punctuation, and the parts of speech, *God's Gift of Language B* deepens students' knowledge of grammar and increases their writing skills. Students will be introduced to the four main types of complements and to additional rules for punctuation. They will learn how to diagram prepositional phrases and complements. Students' writing skills will improve as they learn how to write effective topic sentences and paragraphs and how to use transitional words. Skills learned in outlining, note taking, and preparing a bibliography will aid fifth graders in writing an encyclopedia report and a library research report.

### Evaluation

- Quizzes from quiz/test book (12)
- Exercises from student book (9; each counts as a quiz grade)
- Tests from quiz/test book (11)
- Encyclopedia report (counts as test grade)
- Library research report (counts as 2 test grades)
- 7 graded book reports:
  - Short format (2; each counts as 2 quiz grades)
  - Long format (3; each counts as test grade)
  - Oral (2; each counts as test grade)

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

### Grammar

- Capitalization:
  - First word in every line of poetry, every sentence, and direct quotations
  - Pronoun *I*
  - Proper nouns:
    - Names, initials
    - Nationalities, races, religions
    - Days, holidays, months
    - Historical events or periods, organizations, businesses, ships, awards
    - Other particular nouns
    - Geographical locations: streets, cities, states; regions of the country or world; countries, continents
    - Geographical features
    - Recreational areas, planets
    - Proper adjectives
    - First and last words and all important words in the following titles:
      - Books, magazines, poems, and stories
      - Plays, paintings, and other works of art
    - Title of person before a name
    - Titles used instead of a name in direct address
    - Nouns referring to the Bible; nouns and pronouns referring to God
  - Punctuation:
    - End marks
    - Commas:
      - To separate three or more items in a series
      - To separate two or more adjectives before a noun
      - Before coordinating conjunctions joining a compound sentence
      - To separate items in a date or address
      - After salutation of a friendly letter and closing of any letter
      - After *well*, *yes*, *no*, and *why* at beginning of sentence
      - To set off words of direct address, direct quotation
    - Apostrophes:
      - To form contractions and possessive words
      - To form the plural of letters
    - Colons:
      - To write time
      - After salutation of business letters
      - In Scripture references
    - Hyphens: to divide a word at end of line
  - Semicolons: to separate simple sentences not joined by conjunction
  - Underline:
    - Titles of books, newspapers, ships, plays, sculptures, paintings, and other works of art
    - Titles of films, planes, trains
  - Quotation marks:
    - With direct quotations
    - With titles of short stories, poems, songs, chapters, articles, other parts of books, magazines, and newspapers
  - The sentence:
    - Know definitions of sentence, subject, predicate
    - Find subjects and verbs: compound, simple
    - Identify four types of sentences: declarative, imperative, interrogative, exclamatory
    - Recognize simple and compound sentences
    - Diagram compound sentences
    - Correct run-on sentences and fragments
    - 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:
      - 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

## Language *cont.*

### Grammar *cont.*

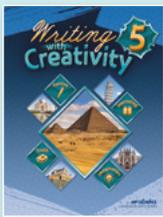
- Correct use of troublesome verbs: *burst, busted; attacked, attacked; brought, brung; climbed, clumb; drowned, drowned; ate, et; eaten, aten; grew, growed; sneaked, snuck; stole, stoled; threw, throwed; thought, thunk*
- Nouns:
  - Common, proper, compound, plural
  - Nouns as antecedents, subjects
  - Nouns as direct object, indirect object, predicate nominative, object of preposition
- Pronouns:
  - Personal pronouns (subject, object, possessive)
  - Compound, interrogative, demonstrative
  - Subject and verb agreement with pronouns
- Adjectives:
  - Proper
  - Adjectives that look like verbs
  - Possessive nouns and pronouns as adjectives
  - Predicate adjectives
  - Distinction between adjectives modifying noun and a compound noun
  - Positive, comparative, and superlative degrees
  - 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*
- Interjections:
  - Punctuation
  - Diagram
- 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

### 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
- Write dialogue
- Complete creative writing assignments including a poem, narrative, biography, Bible story, dialogue, paragraphs, etc. (8)
- Make topical and sentence outlines
- Use the encyclopedia and Writing Process to write an encyclopedia report: taking notes, writing a rough draft, rewriting
- Use the Writing Process for a library research report:
  - 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

## Language Arts: Penmanship/Creative Writing



*Penmanship Mastery II* concentrates on what fifth graders need most—practice with “trouble-maker” letters. Each week’s lessons provide practice with basic letter size and formation, correct pen grip, slant, and overall neatness. Students are given the opportunity to employ their skills through a variety of interesting activities such as word studies and creative writing exercises. Each week, students will also complete a creative writing assignment, including a biweekly journal entry.

### Added Enrichment

- Journal compilation (16)
- Creative writing assignments (75)

### Evaluation

- Tests (34)
- Progress report boxes (32)

► RED indicates first introduction of content.

### Skills Development

- Maintain good writing position:
  - Sitting properly in desk
  - Holding pencil correctly
  - Slanting paper correctly
- Write in ink with a relaxed grip and flowing movement
- Use correct warm-up procedure with slants, ovals, basic letter strokes

- Correctly write all upper- and lowercase letters and numbers 0–9
- Maintain correct letter formation, uniform slant and size, correct spacing, letters that touch the line, and proper margins for success in writing legibly
- Use key strokes: slant, loops, tails, and humps
- Evaluate writing for personal improvement
- Copy most assignments from print to cursive
- Be able to write sentences as dictated
- Write topical journal entries

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

## Penmanship *cont.*

### Skills Development *cont.*

- Creative writing assignments:
  - Match words to definitions or abbreviations (18)
  - Write a paragraph or sentence on a particular topic (16)
  - Use words beginning with or containing a particular letter (8)
  - Write a poem, paragraph, or sentence with given words (8)
  - Classify words by syllables or alphabetical order (8)
  - Complete a given paragraph or sentence (6)
  - Correct word usage or spelling (5)
  - Create tongue twisters or limericks (3)
  - Form compound words from given parts or new words by adding prefix or suffix (2)
  - Word search (1)

- Copy assignments from print to cursive using language skills and science and geography facts
- **Complete challenging and fun-filled assignments using poetry, word puzzles, and jokes**

## Language Arts: Spelling, Vocabulary & Poetry



In order to achieve spelling mastery, students must learn how spelling “works.” *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. A variety of exercises allows fifth graders to recognize misspelled words, practice using spelling and vocabulary words in sentences, and improve their proofreading skills. Students will enjoy memorizing and reciting the six character-building poems that have been included in this text.

### Added Enrichment

- Spelling and vocabulary:
  - Spelling lists (34) including a review list at the end of each 9 weeks:
    - Spelling words (725)
    - Vocabulary words (300)
    - Organized by topic (29)
  - Practice exercises (68) including cumulative review of vocabulary words and definitions
- Spelling games (19)
- Pronunciation key
- Spelling rules in text for quick reference
- Teacher resources:
  - Sentence bank
  - Practical spelling tips and suggestions

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

### Evaluation

- Spelling tests (34)

### Spelling & Vocabulary Skills Development

- Master spelling and vocabulary lists including:
  - Vocabulary words and definitions
  - Synonyms and homonyms
  - Antonyms
- Use vocabulary words in proper context
- Memorize vocabulary definitions
- Correctly write sentences dictated by teacher using vocabulary words
- Create good sentences using spelling and vocabulary words
- Proofread for spelling errors: recognize misspelled words in pairs, lists, and sentences
- Apply spelling and phonics concepts through daily teacher-directed oral practice and independent written practice
- Learn background information on some spelling and vocabulary words

- Learn the spelling and abbreviation for each book of the Bible
- Distinguish between pairs of words commonly used as synonyms, antonyms, or homonyms
- Learn spelling rules:
  - Use *i* before *e*, except after *c*, or when sounded like *a*
  - Double a final consonant before adding a suffix beginning with a vowel
  - Know when to change *y* to *i* when adding suffixes
  - Drop the silent *e* before adding a suffix beginning with a vowel
- Learn:
  - Exceptions to the final *e* rule
  - Words that follow no spelling pattern
  - How to choose the correct ending for spelling words with sound-alike suffixes
  - Rules for standard plural nouns
  - Compound words and words with hyphens

## Spelling, Vocabulary & Poetry *cont.*

### Poetry Skills Development

► Memorize 5 lyrical poems and 1 hymn

- Develop appreciation of poetry
- Perform in front of an audience
- Recite in unison
- Develop appropriate expression and volume

- Learn definitions and use of unfamiliar words
- Improve comprehension of emotion and content
- Develop mental visualization of the poem
- Discuss meaning and purpose of each poem
- Use proper observation of punctuation

## 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)

► RED indicates first introduction of content.

### Numbers

- Place value:
  - Whole numbers to the 100 billions' place
  - Decimals to the thousandths' place
  - Counting sequences
- Writing numbers from dictation to the 100 billions' place
- Roman numerals:
  - Value of I, V, X, L, C, D, M
  - Basic rules for Roman numerals
  - More complex rules for forming Roman numerals:
    - Subtract a numeral only from the next two greater numerals
- Terms: notation, numeration
- Comparing
- Recognize symbols:
  - > (greater than); < (less than)
  - ≠ (unequal)
- Rounding: whole numbers, money, decimals, timed mastery
- Number sentences: greater or less than
- Estimating:
  - Sum, difference
  - Product, quotient

### 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

- Checking by:
  - Addition
  - Casting out 9s
- Addends: column addition
- Averaging
- Fractions with common and uncommon denominators
- Measures
- Decimals with annexing zeros

### 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
- Checking by addition
- Fractions with common and uncommon denominators
- Measures
- Decimals with annexing zeros
- Number sentences: greater or less than

### Multiplication

- Multiplication facts: 0–12 tables
- Word problems
- Timed mastery
- Terms: factors, product, partial products
- Missing sign
- Mental arithmetic: problems combining multiplication, division, addition, and subtraction up to 13 numbers

## Arithmetic cont.

### Multiplication cont.

- Multiplying with up to 3-digit multiplier (factor)
- Carrying
- Checking by:
  - Reversing factors
  - Casting out 9s
- Money
- Factors:
  - Factoring
  - Finding common and greatest common factor
- Fractions:
  - Using cancellation
  - Multiplying:
    - Fractions with whole or mixed numbers
    - Fractions with 2 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
- Missing sign
- Timed mastery
- Mental arithmetic: problems combining division, multiplication, addition, and subtraction up to 13 numbers
- Divisor:
  - 1 or 2 digits
  - 3 digits
- Dividends up to 6 digits
- Remainders written as fractions
- Checking by:
  - Multiplication
  - Casting out 9s
- Money
- Averaging
- Estimating quotients
- Divisibility rules:
  - Dividing by 2, 3, 4, 5, 9, 10
  - Dividing by 6
- Dividing fractions:
  - 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
- Number sentences: greater or less than
- 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:
  - Finding least common denominator
  - Answers reduced to lowest terms
- Number line
- 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 fractions to decimals and decimals to fractions

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

### Problem Solving & Applications

- Word problems:
  - Addition, subtraction, multiplication, division, fractions
  - Money, measures, averages, decimals
  - Geometry: area, perimeter
  - Graphs
- Scale drawings, temperature

## Arithmetic *cont.*

### Problem Solving & Applications *cont.*

- Steps of problem-solving process:
  - Problems requiring four steps
  - Mixed operations, estimating answers, eliminating unnecessary facts
  - Writing a number sentence, drawing a model of a problem, using a schedule, estimating money amounts, guessing and checking, making an organized list, reading a chart, using educated trial and error
- 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

### Money

- Addition, subtraction, multiplication, and division with \$
- Estimation
- Rounding to nearest cent

### 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  $\frac{1}{8}$  of an inch
  - English: inch, foot, yard, mile
  - Metric: millimeter, centimeter, decimeter, meter, decameter, hectometer, kilometer
  - Converting kilometers to miles and miles to kilometers
- Weight:
  - English: ounce, pound, ton
  - Metric: milligram, centigram, decigram, gram, decagram, hectogram, kilogram
- Capacity:
  - English: 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

### Graphing, Statistics, Probability

- Statistics: averaging
- Scale drawing
- Graphs:
  - Drawing graphs
  - Pictographs, bar, and line graphs
  - Column graphs
  - Identify title, labels, and scale
  - Ordered pairs
- Probability ratio

### Geometry

- Plane figures:
  - Simple closed figure, polygon
  - Quadrilateral: parallelogram, rectangle, square, rhombus, trapezoid
  - Pentagon, hexagon, heptagon, octagon
  - Triangle: right, isosceles, equilateral
- Angles:
  - Right, congruent
  - Acute, obtuse, straight
- Lines:
  - Line segment, line, ray, intersecting lines
  - Parallel and perpendicular lines
- Terms:
  - Point, plane, congruent
  - Similar, diagonal
  - Perimeter of a polygon
  - Area: formulas for rectangle and square
  - Recognize models and symbols: • (point); – (line segment);  $\leftrightarrow$  (line);  $\rightarrow$  (ray);  $\sphericalangle$  (angle)
  - Squares and square roots

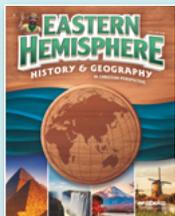
### Percent, Ratio, Proportion

- Introduction to concept
- Recognize symbol: % (percent)

### Pre-Algebra

- Solving equations:
  - 4 new axioms:
    - With number and unknown side by side
    - Unknown as numerator and number as denominator
- Negative numbers
- Squares and square roots
- Exponents, bases, radical signs
- Order of operations

## History & Geography



*Old World 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 (69)
- Chapter checkups at end of each chapter (16)
- Special feature boxes with in-depth study of Eastern Hemisphere (36):
  - 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 (43) and important facts about each continent at beginning of each unit

- Worksheets (39):
  - Geography facts and review (24)
  - Chapter content worksheets (6)
  - Geography atlas and continent study (6)
  - Map skills (3)
- *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 (36)
- Homework quizzes (6)
- Tests (11)
- 9-weeks content and geography exams (4)
- Atlas, continent, and geography facts memorized and evaluated (36)

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

### History Study

- Fertile Crescent:
  - Cradle of civilization:
    - Land of beginnings
    - Sumer: civilization of southern Mesopotamia (Babylon), irrigation, writing, wheel, archaeologists, ziggurats
    - Ur of the Chaldees: Chaldea, stone temples, marketplace, Abraham
  - Ancient Middle East:
    - Where history began
    - Homes of ancient times
    - 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, Chaldeans, Seven Wonders of the Ancient World, Daniel, King Belshazzar
    - Persian Empire: Cyrus the Great
  - Middle East today:
    - Geographical features
    - Climate: desert regions, Mediterranean climate, fertile land
    - Plants and animals
    - People: Arabic language, Islam religion
    - Importance of history and current events: Islam, Judaism, Christianity, natural resources
- Three geographical areas: Fertile Crescent, Arabian Peninsula, Northern Plateaus
- Henry Martyn: missionary to India and Middle East
- Countries of Central and Southern Asia:
  - India:
    - Topographical features, caste system, family life, religion, place value, decimal numeral system
    - Taj Mahal, Vasco da Gama, East India Company, William Carey, East and West Pakistan, Mt. Everest
    - Amy Carmichael: missionary to Indian children
  - Other Central and Southern Asian Countries
- Countries of the Far East:
  - China:
    - Huang He (China's Sorrow), dynasties, Great Wall of China, 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
  - Northeast and Southeast Asian countries
- Egypt:
  - Geography of Egypt
  - Egypt's beginning: early river civilizations
  - Dynasties
  - Building projects of the pharaohs: irrigation and flood control, shadoof, pyramids, Great Sphinx, obelisks, Valley of the Kings, "King Tut"
  - Everyday life in ancient Egypt: people, education, food
  - Papyrus plant: first paper, hieroglyphics, Rosetta Stone
  - Decline of Egypt

## History & Geography *cont.*

### History Study *cont.*

- Africa long ago:
  - Land of mystery: "Dark Continent"
  - Highlights of African history:
    - Land of Phut, Sahara, Land of Cush
    - Ethiopian eunuch, Queen of Sheba, early Christians in North Africa
    - Muslim control, Ghana Empire, Mali Empire
  - Age of exploration and missions:
    - Malaria, yellow fever, sleeping sickness, slave trade
    - Robert Moffat, David Livingstone, Victoria Falls, Henry Stanley, Samuel Crowther, Mary Slessor
- Africa in modern times:
  - Northern Africa: Sahara, Barbary Coast, Aswan High Dam, Suez Canal, Sudan, Khartoum
  - Tropical Africa: history and geography
  - Southern Africa: European settlement, Republic of South Africa, resources and industries
  - Modern Africa's needs: the Gospel, food, shelter, education, stable government
- Ancient Greece
  - Geographical features
  - First Greeks: Minoans, Crete, Mycenaean, 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 (people rule)
  - Two famous city-states: Sparta, courage, strength, loyalty, helots; Athens, culture
  - Philip of Macedonia: Macedonia, phalanx
  - Alexander the Great (Conqueror of the World): Hellenistic Age
- 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
- Christianity:
  - Greatest event in history: birth of Jesus, early ministry of Jesus Christ, spread of the Gospel
  - Nero and the persecution of Christians: colosseum, gladiators, the catacombs
  - Rise of Constantine
  - Fall of Rome
  - Middle Ages:
    - Peasants and lords, Roman church, Charlemagne, Holy Roman 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
- England and the British Isles:
  - British Isles: "Mother Country," biblical heritage
    - Great events in English history:
      - Magna Carta, Elizabethan Age
        - Age of Puritans:
          - Puritans and science, Wesleyan Revival
        - Rise of industry, Victorian Age, England's decline, restoring England's greatness, Margaret Thatcher
      - England: land and people, Pennine Chain, London, Thames, the Chunnel
      - Ireland, Scotland, and Wales: "Emerald Isle," people, potato famine, Republic of Ireland, Northern Ireland, Scottish Highlands
    - Other countries of Western Europe:
      - Two Europes: Communist Eastern Europe, Free Western Europe
      - Mediterranean Europe:
        - Spain: ancient Armada
        - Portugal: explorers
        - Italy: Renaissance
        - Greece: early European civilizations
      - Central Europe:
        - France: revolution
        - Switzerland: mountain republic
        - Austria: culture and beauty
        - Germany: reformation
      - The low countries: The Netherlands (land below sea level), how Dutch made Holland, Belgium and Luxembourg
      - Scandinavia (land of Vikings):
        - Norway: land of the Midnight Sun
        - Sweden: largest Scandinavian country
        - Denmark: Hans Christian Andersen
        - Iceland: land of fire and ice
        - Finland: scenic forest land, European tundra
      - Languages of Europe: Romance, Germanic, Slavic, and others
    - Countries of Eastern Europe:
      - Russia under the czars
        - How Communism began: Karl Marx, Marxism
      - Birth of the Soviet Union: Russian Revolution, Communist terrorism
      - Changes in the Soviet Union:
        - No food, disaster in Afghanistan
          - Mikhail Gorbachev
        - Perestroika and glasnost, Lech Walesa, Solidarity, Baltic Republics
        - Life in the Soviet Union: atheism, few freedoms, government control
      - Soviet Union and United Nations
        - Fall of the Soviet Empire: Boris Yeltsin, Russian Republic, Commonwealth of Independent States
      - Modern countries of Eastern Europe
    - Australia and beyond:
      - Australia: "Island Continent," land and climate, Great Barrier Reef, plants and animals, history, government, cities, country life, industry and resources
      - Oceania: islands of the Pacific
      - Antarctica: coldest continent, discovery and exploration, Captain James Cook, Richard Byrd

➤ RED indicates first introduction of content.

## History & Geography *cont.*

### Memory Work

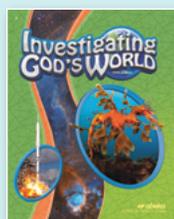
- 6 documents:
  - The American's Creed
  - Portion of The Declaration of Independence
  - Preamble to the Constitution
- First Amendment to the Constitution
- The Rights of Americans
- Lincoln's Gettysburg Address
- States and capitals
- 44 U.S. Presidents

### 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
  - Africa: countries, rivers, mountains, bodies of water
    - Landforms
    - Bodies of water
    - 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 & 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
  - 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



*Investigating God's World* leads students continually from the known to the unknown by teaching important science concepts within the context of things they can see and know. The aim is to help students better understand basic science principles rather than to merely teach them science vocabulary.

This text presents the world as the creation of God and glorifies Him as its Sustainer and Upholder. It introduces great scientists and naturalists who believed in the biblical account of Creation, and where appropriate, it refutes the materialist's faith in evolution. Students will also learn about topics such as plants and animals, matter and energy, light, and minerals.

➤ RED indicates first introduction of content.

### Additional Helps

- Suggested:
  - Enrichment projects (3)
  - DVDs (4)
  - Worksheets (24)

### Evaluation

- Printed quizzes (25)
- Homework quizzes (3)
- Tests (6)
- 9-weeks exam (3)

### Insects & Plants

- The mysteries around us:
  - Science and observation
  - Law and order
- A detective's tools: his senses and intelligence, books and equipment
- Investigating a goldenrod jungle:
  - Pollination

- Honeybees
- More stinging insects: bumblebees, yellow jackets
- Victims and villains:
  - Predator, prey
  - Food chain
  - Mimicry:
    - Monarchs and viceroy butterflies
    - Bee and fly differences; bee killers

**Science** cont.

**Insects & Plants** cont.

- Camouflage:
  - Ambush bug, goldenrod spider
  - True bugs:
    - Piercing and sucking mouthparts
    - Wings that cross
  - Praying mantis: egg case, nymph
- Beetles and seed eaters:
  - Beetle characteristics, locust borer, goldenrod soldier beetle
  - Seed feeders:
    - Birds
    - Rabbits
- Composite flowers: characteristics of composites; daisy, aster, blackeyed Susan, thistle, goldenrod, ragweed
- William Carey: missionary and botanist in India

**Activities & Demonstrations:**

- Setting up a living flower exhibit
- Making a meadow in a terrarium
- Observing insect orders
- Making plant exhibits: drying flowers, building a gall cage
- Using a water lens
  - Learning more about honeybees: the "bee dance"
  - Observing social insects
- Making a creature keeper
- Making a pitfall trap

**Mammals**

- Habitats
- Vertebrates:
  - Characteristics:
    - Four limbs: two forelimbs, two hind limbs
    - Warm-blooded
    - Hair:
      - Fur, wool, spines or quills, bristles, whiskers
      - For warmth:
        - Whales' blubber
      - For camouflage
    - Special structures: horns, claws, nails, hoofs, hard plates
    - Mammary glands: most mammals provide milk for their young
- Unusual mammals:
  - Marsupials
  - Platypus and echidna: hatch from eggs
- Gnawing mammals:
  - Rodents (herbivores): rats, mice
  - Rabbits are not rodents
- Insect-eating mammals:
  - Ant-eating mammals: giant anteater, armadillo, pangolin
  - Insectivores: shrews, moles, hedgehogs
  - Bats
- Dogs (canines): breeding, training
  - Carnivores
  - Wild dogs: wolves, coyotes, foxes
- Cats (felines):
  - Designed to stalk: night vision, whiskers, rough tongue, padded feet
  - Wild cats: tiger, lion, jaguar, leopard, etc.

- Other carnivores: contrast in size
  - Large carnivores: bears, giant pandas
  - Small carnivores:
    - Weasels and minks
    - Skunks
- Primates (tree-dwelling mammals):
  - Characteristics
  - Apes: mountain gorillas and chimpanzees
  - Monkeys: New World and Old World
- Horses: man's best helper
- Cloven-hoofed animals:
  - Bovids (useful ruminants): cattle, sheep, goats
  - Deer (antlered ruminants): white-tailed deer, moose, reindeer and caribou
  - Differences between horns and antlers
  - Grenfell of Labrador: missionary and doctor
- Mammals and man:
  - Likenesses and differences
  - Balance of nature; extinct and endangered species

**Activities & Demonstrations:**

- Collecting and recognizing animal tracks
- Investigating your dog and cat
- Following tracks: studying animal tracks
- Demonstrating wool's ability to hold heat
- Building a nature sanctuary
- Observing animal measurements

**Energy: Light**

- Defining light:
  - Speed of light
  - Transparent, opaque, translucent light
  - Shadows
- Journey of light:
  - Luminous objects
  - Natural and artificial light
- Reflection: bouncing light; convex and concave mirrors
- Refraction (bending light rays):
  - Convex and concave lens, telescopes
- The spectrum: ROY G. BV, infrared, ultraviolet
- Eyes (the light detectors):
  - Parts of the eye:
    - Pupil, iris, lens, retina, optic nerve
    - Cornea
  - Eye conditions: nearsightedness, farsightedness
- Sir Isaac Newton and the eye
- Animal eyes:
  - Characteristics of birds' eyes
    - Insects' eyes
    - Night vision
  - Binocular vision, monocular vision
  - Seeing color

**Activities & Demonstrations:**

- Making a lens and mirror collection
- Observing light reflectors
- Observing eyeshine
- Demonstrating transparent, translucent, and opaque materials
- Observing mirrored impressions
- Making a spectrum

**Science** cont.**Geology**

- The earth's structure: crust, mantle, outer core, inner core
- Soil (a natural resource):
  - Humus; conservation
  - Chemical and physical weathering
- Rocks: igneous, sedimentary, metamorphic
- Minerals: crystals and gemstones; mineralogists
- Metals:
  - Characteristics of metals
  - Gold, silver, copper, iron, aluminum, mercury, uranium
- Hidden treasures:
  - Fossil fuels: coal, oil
  - Hot springs and geysers
  - Hollowed-out caves: stalactites, stalagmites, spelunkers
  - Charles Spurgeon: preacher who loved nature
  - Interesting treasures:
    - Fossils:
      - Formation, kinds
      - Paleontologists
    - Men who saw dinosaurs: Bible characters; others throughout history

**Activities & Demonstrations:**

- Gathering a rock collection
- Doing the acid test
- Making a crystal garden
- Identifying minerals
- Identifying artificial fossils
- Observing physical weathering at work

**Oceanography**

- The sea is His: beauty, power, secrets
- Water (the necessary resource):
  - Composition of water
  - Water cycle
- Tide and shore:
  - Types of tides, tidal zones
  - Rocky shores
  - Sandy shores
- Shellfish: mollusks, crustaceans
- Sea stars
- Beauties of the coral reef: coral polyps; fish of the coral reefs
- Some seafaring mammals:
  - Whales
  - Pinnipeds, sea otters
- Winged wanderers: albatrosses, gulls, penguins
- Preserving the sea:
  - Oil spills
  - Conservation

**Activities & Demonstrations:**

- Gathering a seashell collection
- Moving molecules
- Demonstrating a miniature oil slick

**Energy & Engines**

- Force and motion (engines):
  - Forces necessary for motion:
    - Force of gravity, force of friction
    - Force of contact
- Electricity and magnetism:
  - Force of electricity: positive and negative charges
  - Force of magnetism
- Work and energy:
  - Forms of energy; types of energy; transfers of energy
  - Energy for muscles
- The power of water and wind: windmills, water wheels
- Water, ice, and steam:
  - The three states of matter, changes in the states
  - Water's three states
  - Water molecules in motion
- The power of steam:
  - Performance under pressure
  - Steam engine; steam locomotive
- The power of internal combustion:
  - Necessary ingredients for combustion
  - Gasoline and diesel engines
- The power of jet propulsion: how a jet engine works
- The power of rocket engines:
  - Rockets and oxygen
  - Modern rocketry
  - Two types of rocket engines

**Activities & Demonstrations:**

- Calculating weight on the moon (effect of gravity)
- Demonstrating electrical charges
- Observing molecules move in water
- Demonstrating:
  - Importance of oxygen in combustion
  - Magnetic field

**Astronomy**

- The sun:
  - Size; a source of energy
  - Layers: core, photosphere, chromospheres, corona
- The stars: constellations of the northern and southern hemispheres
- The moon:
  - Appearance
  - Moon seas, phases of the moon
- Eight planets: names, description of each
- Air: gases in the air, importance of air, atmosphere, air pressure
- The wild blue yonder: troposphere, stratosphere, mesosphere, thermosphere, exosphere, magnetic field
- Wernher von Braun: aerospace engineer

**Activities & Demonstrations:**

- Exploring space from your backyard
- Demonstrating:
  - Air's expansion and contraction in response to temperature
  - Air pressure with an atmospheric egg

## Science *cont.*

### Weather

- Temperatures and winds:
  - Solar rays; greenhouse effect
  - Seasons:
    - Result of Earth's tilt on axis
  - The winds:
    - Temperature differences
    - Air pressure
    - Major wind systems
- Water vapor: humidity; condensation
- Atmosphere: ingredients for cloud formation; types of air masses, fronts
- Clouds:
  - Shapes and names: cumulus, stratus, cirrus, combination clouds
  - Fog
- Precipitation:
  - Rain, sleet, snowflakes
  - Dry snow, wet snow, freezing rain, tropical rain
- Storms:
  - How a storm is produced
  - Anatomy of a cumulonimbus cloud
  - Hailstones
  - Types of lightning
  - Tornadoes: watches and warnings
  - Storm safety
  - Weather monitoring and forecasting

### Activities & Demonstrations:

- Building a water barometer
- Creating a wind system
- Building a hygrometer
- Making fog

- Investigating snow crystals
- Being a weather prophet

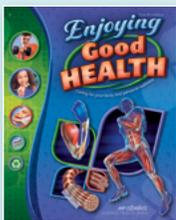
### Variety of Vertebrates

- Classification of animals
- Warm-blooded and cold-blooded vertebrates: definition
- Birds and flight:
  - Structure of feathers and bones
  - Types of wings
  - Powerful breast muscles
- Fish:
  - Structure: gills, scales, swim bladder
  - Types: jawless fish, cartilaginous fish, bony fish
- Snakes (reptiles):
  - Parts of a snake, venomous snakes, common snakes, constrictors
  - Treatment of snakebites
- Lizards (reptiles): defenses, types
- Turtles and crocodiles (reptiles):
  - Armor-like structure, parts of turtle shells
  - Types of turtles and crocodiles
- Amphibians:
  - Types
  - Tadpole metamorphosis
  - Unusual amphibians
- Louis Agassiz: "America's Greatest Science Teacher" (1847-1873)

### Activities & Demonstrations:

- Conducting an egg watch
- Observing fish
- Raising tadpoles

## Health



The active lifestyle presented in *Enjoying Good Health* emphasizes the significance of maintaining sound health habits. While reviewing the muscular and respiratory systems of the human body, each student is encouraged to measure his level of fitness. An in-depth study of the circulatory system adds to the student's knowledge of physical fitness. The study of nutrition focuses on the importance of a healthful diet and its effects on overall fitness and personal appearance.

*Enjoying Good Health* also stresses personal responsibility in overcoming spiritual battles, concluding with a practical study of the Christian's spiritual armor.

► RED indicates first introduction of content.

### Additional Helps

- Worksheets (11)
- Physical exercises (7)
- Mental exercise (1)
- Demonstrations:
  - Measuring amount of air in breath
  - Determining your optimal range
- Review games (16)

### Evaluation

- Printed quizzes (6)
- Homework quizzes (3)
- Tests (4)

### Circulatory System

- Blood: cardiac muscle, arteries, capillaries, veins, plasma, red and white cells, antibodies, platelets
- Heart: atrium, ventricle, valves
- Circulatory system: aorta, pulse, capillaries, venae cavae, varicose veins, blood pressure

- Rest: lactic acid, carbon dioxide, amount needed
- Protecting your heart: alcohol and tobacco use, cholesterol, physical fitness

➤ RED indicates first introduction of content.

## Health *cont.*

### Nutrient Study

- Energy; diet
- Nutrients:
  - Simple and complex carbohydrates
  - Saturated and unsaturated fats
  - Water-soluble and fat-soluble vitamins
  - Minerals: phosphorus, magnesium, sodium, potassium, iron, iodine, zinc
  - Deficiency conditions: osteoporosis, goiter, anemia
- Daily Food Guide: malnutrition, balanced diet, Food Guide Pyramid and 5 groups
- Energy for activity: calories, metabolism
- Balanced meals: a good breakfast, lunch, dinner, and snacks
- Energy input and output: maintaining a healthy weight, obesity

### Digestive System

- Digestive system: alimentary canal
  - Parts: mouth, esophagus, stomach, small intestine, colon
  - Saliva, gastric juices, bile
- Excretory system: kidneys, bladder
- Job of the liver in digestion
- Absorption and elimination: villi, colon, fiber
- Water:
  - Importance, amount needed
  - Safe drinking water

- Dysentery
- Caffeine
- Aids and hindrances to digestion
- Pleasant meals: manners

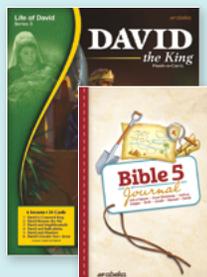
### Physical Fitness in Action: Exercise

- Factors:
  - Aerobic endurance
  - Muscular strength and endurance; agility
  - Flexibility
  - Body composition

### Interpersonal Relationships

- Social acceptance:
  - Influenced by personal appearance and hygiene: posture, halitosis, brushing, flossing, deodorant
  - Influenced by actions:
    - Polite conversations; proper introductions
    - Telephone courtesy during incoming and outgoing calls
    - RSVPs, thank-you notes
    - Being a good friend
- Mental awareness: potential, eye-gate, ear-gate, right attitudes, gratitude
- Spiritual warfare: armor of God

## Bible



Fifth grade Bible is filled with many astounding stories about Bible characters 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.

➤ RED indicates first introduction of content.

### Evaluation

- Graded memory verse passages (8)
- Content tests (5)

### 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)
- First Christmas (5); Joshua (7); Judges (6); Ruth (3); Jonah (2)
- Crucifixion and Resurrection (9); Life of Samuel (4)
- Life of David Series (13):
  - Young David, David in Hiding
  - David the King
- The First Thanksgiving

### Music 45 songs

- Choruses, hymns of the faith, holiday songs, and patriotic songs:
  - 18 new hymns and songs; 12 new choruses

### Bible 5 Journal

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

### Memory Work

- New Scripture passages (8) containing 49 verses
- Review verses (97)

### Doctrinal Drill 59 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

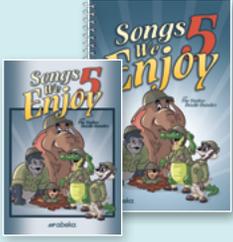
### Prayer Time

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

### Sword Drills

- Learn to quickly find 112 Old and New Testament references

## Music



One important foundation of a nation's heritage is its music. *Songs We Enjoy 5* contains songs that reflect the spirit and strength of the American people. These traditional, patriotic, holiday, and fun songs have been delighting students for generations. The sing-along CD makes song time easy for the teacher and even more enjoyable for the students.

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

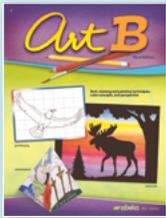
### Skills Development 66 songs

- Follow a song leader, while singing with class or CD
- Define and understand 17 unfamiliar words and phrases in lyrics
- Improve coordination skills with songs that require hand motions
- Benefit from fun activities that keep interest:
  - Dynamic contrasts, singing in rounds
  - Tongue twisters
- Learn historical facts through patriotic, folk, and Americana music

### Variety of Songs to Memorize

- Patriotic, folk, Americana, fun, spirituals and hymns, holiday, songs at sea

## Arts & Crafts



Students use *Art B* to review fundamental principles of color with colored-pencil renderings and watercolor paintings. Fifth graders will learn new concepts such as light and dark values, one-point perspective (with step-by-step drawings), and symmetry. Students will enjoy using different types of media to create three-dimensional forms. *Art B* also encourages students to appreciate art by introducing them to accomplished artists and art techniques.

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

### Skill & Concept Development 37 projects

- Primary, secondary, intermediate, complementary, analogous, and neutral hues
- Value: light and dark; watercolor; contrasting (12)
- Perspective: horizon line, vanishing point (6)
- Symmetry (4)

### Added Enrichment

- Art Appreciation
  - Introduction to influential artists such as Julius Schnorr von Carolsfeld, Currier and Ives, and Brian Jekel
  - Art forms: woodcuts, calligraphy, origami, and lithographs
  - Introduction to well-known prints and works

### Technique Development

- Drawing: sketching basic shapes (4)
- Shading: enlarging and reducing (4)
  - Animation
  - Modeling (4):
    - Paper shaping, paper cutting, paper folding
    - Foil, imprinting, curling
- Painting: watercolor techniques (4)