Preface to the Scope and Sequence:

The following pages outline the Barney Charter School Initiative's Scope and Sequence for each of the major subjects from Kindergarten through 12th grade. Portions of this work are based on the *Core Knowledge® Sequence*, an original work of the Core Knowledge® Foundation made available through licensing under a Creative Commons Attribution- NonCommercial-ShareAlike 4.0 International License. This does not in any way imply that the Core Knowledge Foundation endorses this work.

The BCSI Scope and Sequence differs most significantly from the Core Knowledge Sequence in Literacy, Grammar, and Math, though changes are not limited to these subjects. In Literacy the BCSI Scope and Sequence is based on the Riggs Institute's *Writing and Spelling Road to Reading and Thinking* as supplemented and modified by Access Literacy, LLC. In Grammar and Math, the BCSI Scope and sequence is based, respectively, on the *Well-Ordered Language* series and curriculum from Singapore Math. The Barney Charter School Initiative has provided a scope and sequence for Latin from grades 6-9 and for all required subjects in grades 9-12.

The BCSI Scope and Sequence includes resource recommendations for teachers to pair with the listed subject matter. In Mathematics, Literature, Literacy, and Grammar, these resources are directly paired to the scope and sequence items, and fidelity to the curriculum requires that these resources be followed quite closely. In Science, History, Visual Arts, and Music, however, these resources should be viewed as aids to teaching the curriculum, but not as the curriculum itself. Teachers need not employ all of a given science textbook, for example, and fidelity to the curriculum requires that teachers of these subjects use discretion to teach each topic from the BCSI Scope and Sequence using the best available resources appropriate to students' grade level.

The BCSI Scope and Sequence as presented here is intended to offer grade-level guidance based upon the average or slightly-better-than average performance of students in a mature school. In skill-based subject areas (especially Literacy and Math), this guidance may need to be tailored for a specific school or student. New schools, for example, will need to follow special recommendations for teaching literacy, and all schools are likely to have some students working a year or more behind the BCSI Scope and Sequence in Math.

Kindergarten

I. Phonics & Literacy

Resources:

- *Writing and Spelling Road to Reading and Thinking*, Level I, Teacher's Edition from the Riggs Institute
- Box of Phonogram Cards, Riggs Institute
- *Update/Enhancement Packet* from Access Literacy
- Kindergarten Scope & Sequence (Access Literacy) provided at training
- *The ABC's and All Their Tricks* from the Riggs Institute
- Wall Charts from the Riggs Institute
- *Primary Phonics*, sets 1, 1A, 2, 2A, 3-6, by Barbara Makar

a. 1st Quarter: Introducing the Written Form and All Sounds for the 26 Letters of the Alphabet
   - ♦ Week 1: Classroom setup, oral phonemic awareness components
   - ♦ Week 2: Handwriting readiness—finger tracing the clock stroke
   - ♦ Week 3: Practicing writing habits and pencil grip
   - ♦ Week 4: Teaching the sounds and writing the first clock letters
   - ♦ Week 5: Practice to mastery the clock letters, spacing, begin decoding
   - ♦ Week 6: Line letter formation
   - ♦ Week 7: Introducing the concept of the basic code for spelling and reading with clock letters
   - ♦ Week 8: Practicing to automaticity—writing, spelling, and reading in the basic code
   - ♦ Week 9: Practicing to mastery phonograms 1-26

b. 2nd Quarter: Capital Letters; Writing and Spelling to Reading Instruction
   - ♦ Weeks 10-12: Capital letter formation & working toward automaticity with the basic code
   - ♦ Week 13: Introducing the first spelling/vocabulary words and dictated sentence
   - ♦ Week 14: Expanding the code—adding multi-letter phonograms and spelling rules
   - ♦ Weeks 15-16: Formal grammar with introduction of the concept of verb

- Week 17: Expanding the code—adding silent final 'e' job #1 and concept of noun
- Week 18: Practice/review/assessments—working towards automaticity

c. 3rd-4th Quarter: Transition into Level I Manual

- Spelling Lessons: begin spelling lessons from the Level I Manual, starting with Lesson #20. By omitting "Basic Code" words and words already taught, you may be able to teach one lesson a day.
- Review and practice previously taught words for both spelling and reading, working toward automaticity/speed.
- Formal reading *Primary Phonics* by Barbara Makar: Following the end of 2nd Quarter assessment, determine which students are ready to begin Primary Phonics Set 1 and 1a readers. There are 20 books that stay within the basic code that include several words that have been taught in spelling. Track the completion of each book in a set. Students should read aloud each book in the set with supervision to ensure accuracy.
- New spelling patterns: Introduce new phonograms until all 71 phonograms have been taught. The following order of the phonograms will prepare students for decoding words in Primary Phonics Set 2. Continue to review those previously taught that are not yet mastered.

  Week 19— ck, wh Week 27—aw, au
  Week 20— ai, oo Week 28—ew, eu
  Week 21— oa, ea Week 29—ur, ir, ei
  Week 22— oe, ie Week 30—ed, ui, eigh
  Week 23—oy, oi Week 31—igh, kn, gn
  Week 24— ey, dge Week 32—wr, ph, tch
  Week 25—ng, ch Week 33—ti, si, ci
  Week 26— wor, ear Week 34—ough
- Sentence writing instruction will come up in the Riggs Level I Manual. As part of practice for newly introduced words, students will independently generate a new sentence for each new word. This transitions students from the teacher giving dictated sentences for review of words to student generated sentences to demonstrate using and practice fluency for writing and spelling. Struggling students may need more support for this transition.

II. Literature

Resources:

- Listen, My Children (Kindergarten), Core Knowledge Foundation
- What Your Kindergartener Needs to Know, Core Knowledge Foundation
- *The Children's Book of Virtues,* William J. Bennett

a. Poetry

Listen, My Children: Poems for Kindergarteners

♦ Traditional Poems:

A Diller, A Dollar

Baa, Baa, Black Sheep

Diddle, Diddle, Dumpling

Early to Bed

Georgie Porgie

Hey Diddle Diddle

Hickory, Dickory, Dock

Hot Cross Buns

Humpty Dumpty

It's Raining, It's Pouring

Jack and Jill

Jack Be Nimble

Jack Sprat

Ladybug, Ladybug

Little Bo Peep

Little Boy Blue

Little Jack Horner

Little Miss Muffet

London Bridge Is Falling Down

Mary, Mary, Quite Contrary

Old King Cole

Old Mother Hubbard

One, Two, Buckle My Shoe

Pat-a-Cake

Rain, Rain, Go Away

Ride a Cock-Horse

Ring Around the Rosey
Rock-a-bye, Baby
Roses Are Red
See-Saw, Margery Daw
Simple Simon
Sing a Song of Sixpence
Star Light, Star Bright
There Was a Little Girl
There Was an Old Woman Who Lived in a Shoe
This Little Pig Went to Market
Three Blind Mice

- Other Poems, Old and New

April Rain Song, Langston Hughes
Happy Thought, Robert Louis Stevenson
I Do Not Mind You, Winter Wind, Jack Prelutsky
Mary Had a Little Lamb, Sara Josepha Hale
The More It Snows, A.A. Milne
My Nose, Dorothy Aldis
Rain, Robert Louis Stevenson
Three Little Kittens, Eliza Lee Follen
Time to Rise, Robert Louis Stevenson
Tommy, Gwendolyn Brooks
Twinkle Twinkle Little Star, Jane Taylor

b. Fiction

- Stories

The Children's Book of Virtues

The Little Red Hen

What Your Kindergartener Needs to Know

The Bremen Town Musicians, Brothers Grimm
Chicken Little (also known as "Henny-Penny")
Cinderella, Charles Perrault
Goldilocks and the Three Bears
How Many Spots Does a Leopard Have
King Midas and the Golden Touch

The Legend of Jumping Mouse
Little Red Riding Hood
Momotaro: Peach Boy
Snow White and the Seven Dwarfs
The Three Billy Goats Gruff
The Three Little Pigs
A Tug of War
The Ugly Duckling, Hans Christian Andersen
The Velveteen Rabbit, Margery Williams
Selections from *Winnie-the-Pooh*, A.A. Milne
The Wolf and the Kids, Brothers Grimm

- Aesop's Fables

  The Children's Book of Virtues

  The Lion and the Mouse
  The Hare and the Tortoise

  What Your Kindergartener Needs to Know

  The Grasshopper and the Ants
  The Dog and His Shadow

- American folk heroes and tall tales

  American Tall Tales

  Johnny Appleseed
  Davy Crockett

  What Your Kindergartener Needs to Know

  Casey Jones

- Literary Terms: author, illustrator

c. Sayings and Phrases:

What Your Kindergartener Needs to Know

A dog is man's best friend.
April showers bring May flowers.
Better safe than sorry.
Do unto others as you would have them do unto you.
The early bird gets the worm.
Great oaks from little acorns grow.

Look before you leap.

A place for everything and everything in its place.

Practice makes perfect.

Raining cats and dogs

Where there's a will there's a way.

III. History and Geography

Resources:

- Core Knowledge *Tell It Again!* Read-Aloud Anthologies and Flipbooks (available in PDF as part of the Core Knowledge Language Arts resources at coreknowledge.org):
  - *Native Americans*
  - *Columbus and the Pilgrims*
  - *Colonial Towns and Townspeople*
  - *Presidents and American Symbols*
- *Kids' World Atlas: A Young Person's Guide to the Globe* (Picture Window Books World Atlases), Karen Foster
- *A History of the United States and Its People*, Edward Eggleston
- *North American Indians*, Marie and Douglas Gasline
- *Christopher Columbus*, Ingri and Edgar Parin D'Aulaire
- *Christopher Columbus: Explorer* (Spirit of America, Our People series), Judy Atler
- *The Thanksgiving Story*, Alice Dalgliesh
- *The Fourth of July Story*, Alice Dalgliesh
- *George Washington*, Cheryl Harness
- *A Picture Book of Thomas Jefferson*, David Adler
- *Abraham Lincoln*, Amy L. Cohn and Suzy Schmidt
- *You're on Your Way, Teddy Roosevelt*, Judith St. George
- *Rushmore: Monument for the Ages*, Lynn Curlee
- *The Story of the Statue of Liberty*, Betsy and Giulio Maestro

a. Geography: Spatial Sense
   - ♦ Maps and globes: what they represent, how we use them
   - ♦ Rivers, lakes, and mountains: what they are and how they are represented on maps and globes
   - ♦ Locate the Atlantic and Pacific Oceans
   - ♦ Locate the North and South Poles

b. An Overview of the Seven Continents
   - ♦ Identify and locate the seven continents on a map and globe

c. Local Geography
   - ♦ Name and locate the town, city, or community, as well as the state where you live
   - ♦ Locate North America, the continental United States, Alaska, and Hawaii

d. Native American Peoples, Past and Present
    - Become familiar with the people and ways of life of at least one Native American tribe or nation, including:
      How they lived
      What they wore and ate
      The homes they lived in
      Their beliefs or stories
      The current status of the tribe or nation

e. Early Exploration and Settlement
    - The Voyage of Columbus in 1492
      Queen Isabella and King Ferdinand of Spain
      The Niña, Pinta, and Santa Maria
      Columbus's mistaken identification of "Indies" and "Indians"
      The idea of what was, for Europeans, a "New World"
    - The Pilgrims: The Mayflower, Plymouth Rock, Thanksgiving Day

f. Independence Day, July 4
    - The "birthday" of our nation
    - Declaration of Independence
    - Democracy: Americans wanted to rule themselves instead of being ruled by a faraway king.

g. Presidents, Past and Present
    - George Washington: the "Father of Our Country"; legend of George Washington and the cherry tree
    - Thomas Jefferson: author of the Declaration of Independence
    - Abraham Lincoln: humble origins, "honest Abe"
    - Theodore Roosevelt
    - Current president

h. Symbols and Figures: recognize and become familiar with the significance of
    - American flag
    - Statue of Liberty
    - Mount Rushmore
    - The White House

IV. Mathematics

Resources:

- Essential Math, Kindergarten A, Singapore Mathematics
- Essential Math, Kindergarten B, Singapore Mathematics

Fall Semester –

a. Same
b. Different
c. Sets
d. Count to 5
e. Numbers to 5
f. Numbers to 10
g. Number Order
h. Shapes
i. Patterns
j. Length
k. Size
l. Weight
m. Capacity
n. Equal Sets
o. More
p. Less

Spring Semester –

a. Compare Numbers
b. Ten and Ones
c. Numbers to 20
d. Number Bonds
e. Addition
f. Counting On
g. Subtraction
h. Part
i. Counting Back
j. Addition and Subtraction
k. Numbers to 40
l. Ordering
m. Time
n. Numbers to 100
o. Even/Odd
p. Fractions

V. Science

Teacher Resources:

- Science Explorer series (Teachers Editions): *Animals, Electricity and Magnetism*, *Environmental Science, From Bacteria to Plants, Human Biology and Health, Integrated Lab Manual, The Nature of Science and Technology, Weather and Climate*
- *The Wright Brothers: Pioneers of American Aviation*, Quentin Reynolds

Read-aloud Resources:

- *A Man for All Seasons: The Life of George Washington Carver*, Stephen Krensky
- *A Weed is a Flower*, Aliki
- About series, Cathryn Sill (*Amphibians, Arachnids, Birds, Crustaceans, Fish, Hummingbirds, Insects, Mammals, Marsupials, Mollusks, Penguins, Raptors, Reptiles, Rodents*)
- About Habitats series, Cathryn Sill (*Deserts, Grasslands, Mountains, Oceans, Wetlands*)
- *Four Seasons Make a Year*, Anne Rockwell
- *From Seed to Plant*, Gail Gibbons
- *Horses*, Gail Gibbons and Corey Pierno
- *How Animals Hide*, Robert M. McClung
- *How Do Birds Find Their Way?*, Rona Gains
- *Jane Goodall,* William Rice
- *Life in Ponds and Streams*, William Hopkins Amos
- *My Brothers' Flying Machine: Wilbur, Orville, and Me,* Jane Yolen
- *My Five Senses*, Aliki
- *Our Seasons*, Grace Lin and Ranida T. McKneally
- *Rabbits, Rabbits, & More Rabbits*, Gail Gibbons
- *Seeds*, Gail Gibbons
- *Snowflake Bentley*, Jacqueline Briggs Martin
- *The Rainforest Grew All Around*, Susan K. Mitchell
- *The Seasons of Arnold's Apple Tree*, Gail Gibbons
- *The Watcher: Jane Goodall's Life With the Chimps,* Jeanette Winter
- *Tricks Animals Play*, Jan Clarkson
- *Tropical Rainforests*, Seymour Simon
- *Weather Forecasting*, Gail Gibbons
- *Weather Words and What They Mean*, Gail Gibbons

a. Plants and Plant Growth

- ♦ What plants need to grow: sufficient warmth, light, and water
- ♦ Basic parts of plants: seed, root, stem, branch, leaf
- ♦ Plants make their own food
- ♦ Flowers and seeds: seeds as food for plants and animals (e.g., rice, nuts, wheat, corn)
- ♦ Two kinds of plants: deciduous and evergreen

- Farming

  How some food comes from farms as crops

  How farmers must take special care to protect their crops from weeds and pests

  How crops are harvested, kept fresh, packaged, and transported for people to buy and consume
- Biography: George Washington Carver (botanist/discovered ways to keep soil rich)

b. Animals and Their Needs
   - Animals, like plants, need food, water, and space to live and grow
   - Plants make their own food, but animals get food from eating plants and other living things
   - Offspring are very much (but not exactly) like their parents
   - Most animal babies need to be fed and cared for by their parents; human babies are especially in need of care when young
   - Pets have special needs and must be cared for by their owners
   - Biography: Jane Goodall (studied chimpanzees)

c. The Human Body
   - The five senses and associated body parts: sight, eyes; hearing, ears; smell, nose; taste, tongue; touch, skin
   - Taking care of your body: exercise, cleanliness, healthy foods, rest

d. Introduction to Magnetism
   - Identify familiar everyday uses of magnets (e.g., in toys, in cabinet locks, in “refrigerator magnets,” etc.)
   - Classify materials according to whether or not they are attracted by a magnet

e. Seasons and weather
   - The four seasons
   - Characteristic local weather patterns during the different seasons
   - The sun: source of light and warmth
   - Daily weather changes:

     Temperature, using a thermometer

     Clouds, rainfall, rainbows, how rainfall effects condition of ground (desert, rain forest, etc.)

Thunderstorms: lightning, thunder, hail, safety during thunderstorms
Snow and snowflakes, blizzard

- ♦ Biography: Wilson Bentley (photographer of snowflakes)
- ♦ Biography: Wilbur and Orville Wright (made first airplane)

f. Taking Care of the Earth

- ♦ Conservation: some natural resources are limited, so people must be careful not to use too much of them (e.g., logging and reforestation)
- ♦ Practical measures for conserving energy and resources (e.g., turning off unnecessary lights, tightly turning off faucets, etc.)
- ♦ Some materials can be recycled (e.g. aluminum, glass, paper)
- ♦ Pollution (e.g. littering smog, water pollution) can be harmful, but if people are careful they can help reduce pollution.

VI. Art

Resources:

- Art Resources (Kindergarten), Core Knowledge Foundation
- Text Resources for Kindergarten, Core Knowledge Foundation
- *Children's Book of Art*, DK Eyewitness
- Getting to Know the World's Greatest Artists, series by Mike Venezia:
  - *Diego Rivera*
  - *Henri Matisse*
  - *Mary Cassatt*
  - *Pablo Picasso*
  - *Paul Gaugin*
  - *Pieter Bruegel*
  - *Winslow Homer*

a. Elements of Art

- ♦ Color

  Observe how colors can create different feelings and how certain colors can seem "warm" or "cool"

  Observe the use of color in

  The Hunters in the Snow, Pieter Bruegel

  Blue Atmosphere, Helen Frankenthaler

  Tahitian Landscape, Paul Gauguin

  Le Gourmet, Pablo Picasso

- ♦ Line

Identify and use different lines: straight, zigzag, curved, wavy, thick, thin

Observe different kinds of lines in

Tuning the Samisen, Katsushika Hokusai

Purple Robe and Anemones, Henri Matisse

People and Dog in the Sun, Joan Miró

b. Sculpture

- Recognize and discuss the following as sculptures

  Northwest American Indian totem pole

  Statue of Liberty

- Mobiles: Alexander Calder's *Lobster Trap and Fish Tai*l

c. Looking at and Talking about Works of Art

- Observe and talk about

  Children's Games, Pieter Bruegel

  The Bath, Mary Cassatt

  Snap the Whip, Winslow Homer

  Mother's Helper, Diego Rivera

  The Banjo Lesson, Henry O. Tanner

VII. Music

Resources:

- The Core Knowledge Music Collection, Preschool and Kindergarten Music CD Set
- Text Resources for Kindergarten, Core Knowledge Foundation

a. Elements of Music:

- Through participation, become familiar with basic elements of music (rhythm, melody, harmony, form, timbre, etc.).

  Recognize a steady beat; begin to play a steady beat.

  Recognize that some beats have accents (stress).

  Move responsively to music.

  Recognize short and long sounds.

  Discriminate between fast and slow.

  Discriminate between obvious differences in pitch: high and low.

  Discriminate between loud and soft.

Recognize that some phrases are the same, some different.

Sing unaccompanied, accompanied, and in unison.

b. Listening and Understanding

- Recognize the following instruments by sight and sound: guitar, piano, trumpet, flute, violin, drum
- Become familiar with the following works:
  Edvard Grieg, "Morning" and "In the Hall of the Mountain King" from *Peer Gynt*
  Victor Herbert, "March of the Toys" from *Babes in Toyland*
  Richard Rodgers, "March of the Siamese Children" from *The King and I*
  Camille Saint- Saëns, *Carnival of the Animals*

c. Songs

The Bear Went Over the Mountain
Bingo
The Farmer in the Dell
Go In and Out the Window
Go Tell Aunt Rhody
Here We Go Round the Mulberry Bush
The Hokey Pokey
Hush Little Baby
If You're Happy and You Know It
Jingle Bells
John Jacob Jingleheimer Schmidt
Kumbaya
London Bridge
Old MacDonald Had a Farm
Row, Row, Row Your Boat
This Old Man
Twinkle Twinkle Little Star
The Wheels on the Bus

Kindergarten Curriculum Map

	August-September	October	November	December	January	February	March	April	May
Math **(Essential Mathematics)**	Units 1-5 (K-A)	Units 6-9 (K-A)	Units 10-13 (K-A)	Units 14-16 (K-A)	Units 17-19 (K-B)	Units 20-23 (K-B)	Units 24-26 (K-B)	Units 27-29 (K-B)	Units 30-32 (K-B)
Literature (include approx. 5 poems per month)	Three Billy Goats Goldilocks Three Little Pigs	The Wolf and the Kids Aesop's Fables	Red Riding Hood Legend of Jumping Mouse King Midas	Velveteen Rabbit	Tortoise and the Hare How many spots? A Tug of War	Snow White Cinderella Casey Jones	Momotaro Bremen Town Musicians Chicken Little	Little Red Hen Ugly Duckling Johnny Appleseed	Winnie-the-Pooh
Phonics & Literacy (Riggs) ** Includes Grammar and Composition*	Weeks 1-6, Kindergarten Scope and Sequence	Weeks 7-11, Kindergarten Scope and Sequence	Weeks 12-15, Kindergarten Scope and Sequence	Weeks 16-18, Kindergarten Scope and Sequence	3 words per day; Phonograms ck, wh, ai, oo, oa, ea, oe, ie	3 words per day; Phonograms oy, oi, ey, dge, ng, ch, wor, ear, aw, au	3 words per day; Phonograms ew, eu, ur, ir, ei, ed, ui, eigh	3 words per day; Phonograms igh, kn, gn, wr, ph, tch, ti, si, ci	3 words per day; Phonograms ough
Science	Plants & Trees George Washington Carver	Seasons	Magnetism	Animals & Their Needs Jane Goodall	Human Body: 5 Senses	Human Body: Taking Care of Your Body	Taking Care of the Earth	Weather Wilson Bentley The Wright Brothers	Planting & Farming
History & Geography	Basic Geography and Maps Seven Continents	Native Americans Past and Present	Columbus Pilgrims	George Washington	July 4 Thomas Jefferson	Abraham Lincoln	American Flag White House	Theodore Roosevelt Statue of Liberty	Mount Rushmore Current President
Art	Color	Color	Line	Line	Sculpture	Bruegel Cassatt	Homer	Rivera	Tanner
Music	Basic Elements 2 songs	Basic Elements 2 songs	Instruments 2 songs	Instruments 2 songs	Peer Gynt 2 songs	March of the Toys 2 songs	March of the Siamese 2 songs	Carnival of the Animals 2 songs	Review elements 2 songs

First Grade

I. Phonics & Literacy

Resources:

- *Writing and Spelling Road to Reading and Thinking*, Level I, Riggs Institute
- Box of Phonogram Cards, Riggs Institute
- *Update/Enhancement Packet* from Access Literacy
- *Wall Charts* (Get ½ of the box from your K teacher)
- *The ABC's and All Their Tricks*, Margaret Bishop
- *Primary Phonics*, Barbara Makar
- Stevenson's Supplemental Readers 1-20
- Texts for reading practice at increasing levels of difficulty (ex. *Go Dog Go*, *Mrs. Brice's Mice*, *Owls Home*, *Frog & Toad* books, etc.)
- *Test Lessons in Primary Reading*, McCall-Harby
- *Test Lessons in Primary Reading* (Teacher's Edition), McCall-Harby
- *My English Orthography Notebook*, Access Literacy

a. New Schools: In the first year of a school, 1st grade teachers should begin with Lesson 1 of the Level I manual and proceed at a pace of approximately three lessons per week, or one spelling-vocabulary list every three-four weeks, through the entire year.
b. Other Schools: After a school is established, most first-grade students will be well acquainted with the Level I program from Kindergarten. To begin the new school year, teachers should take two weeks to review handwriting, phonograms, and the Kindergarten words. Then teachers should assess the class ability level using the assessments and related instructions on pages 29-42 of the Level I manual. Teachers should grade each test by counting the number of correctly spelled words until a student misses five words in a row. The class average should then be compared to the equivalency table on page 33, and this score will indicate the spelling list with which the class should begin. From this starting point, teachers should proceed at a pace of approximately three lessons per week and one spelling-vocabulary list every three to four weeks, through the entire year. Teachers should aim to finish list 11 or 12, though progress may go slightly faster or slower.
c. Students should make daily entries in their own copy of *My English Orthography Notebook* such that the notebook is filled, or nearly filled, by the end of the school year.

II. Literature

Resources:

- Text Resources, Grade 1, Core Knowledge Foundation
- Listen, My Children, First Grade, Core Knowledge Foundation
- What Your First Grader Needs to Know, Core Knowledge Foundation
- *The Children's Book of Virtues*, William J. Bennett
- *American Tall Tales*
- *The House at Pooh Corner*, A.A. Milne
- *Pinocchio, Carlo Collodi*

a. Poetry

Listen, My Children: Poems for First Graders

- Poems:

  Hope, Langston Hughes

  I Know All the Sounds the Animals Make, Jack Prelutsky

  My Shadow, Robert Louis Stevenson

  The Owl and the Pussycat, Edward Lear

  The Pasture, Robert Frost

  The Purple Cow, Gelett Burgess

  Rope Rhyme, Eloise Greenfield

  Sing a Song of People, Lois Lenski

  Solomon Grundy, traditional

  The Swing, Robert Louis Stevenson

  Table Manners (also known as "The Goops), Gelett Burgess

  Thanksgiving Day ("Over the river and through the wood"), Lydia Maria Child

  Washington, Nancy Byrd Turner

  Wynken, Blynken, and Nod, Eugene Field

b. Fiction

- Novels

  Pinocchio, by Carlo Collodi

  The House at Pooh Corner, A.A. Milne

- Stories

  The Children's Book of Virtues

  The Boy and the Dike

  The Boy Who Cried Wolf

  Indian Cinderella

What Your First Grader Needs to Know

The Frog Prince

Hansel and Gretel

How Anansi Got Stories from the Sky God

It Could Always Be Worse

Jack and the Beanstalk

The Knee-High Man

Medio Pollito

The Pied Piper of Hamelin

The Princess and the Pea

Puss-in-Boots

Rapunzel

Rumpelstiltskin

Sleeping Beauty

Issun Boshi

Tom Thumb

Why the Owl Has Big Eyes

The Tale of Peter Rabbit, Beatrix Potter

Text Resources, Grade 1

Tales of Br'er Rabbit (recommended tales: Br'er Rabbit Gets Br'er Fox's Dinner; Br'er Rabbit Tricks Br'er Bear; Br'er Rabbit and the Tar Baby)

- Aesop's Fables:

The Children's Book of Virtues

The Boy Who Cried Wolf

What Your First Grader Needs to Know

The Dog in the Manger

The Wolf in Sheep's Clothing

The Maid and the Milk Pail

The Fox and the Grapes

The Goose and the Golden Eggs

- Different Lands, Similar Stories

Text Resources, Grade 1, Core Knowledge Foundation

Lon Po Po

Little Red Riding Hood

Thumbelina

Little Finger of the Watermelon Patch

The Egyptian Cinderella

The Korean Cinderella

Yeh-Shen: A Cinderella Story from China

The Children's Book of Virtues

The Indian Cinderella

- Literary Terms

  Characters, heroes, heroines

  Drama: actors, actresses, costumes, scenery, props, theater, stage, audience

c. Sayings and Phrases:

What Your First Grader Needs to Know

A.M. and P.M.

An apple a day keeps the doctor away.

Do unto others as you would have them do unto you.

Fish out of water

Hit the nail on the head.

If at first you don't succeed, try, try again.

Land of Nod

Let the cat out of the bag.

The more the merrier.

Never leave till tomorrow what you can do today.

Practice makes perfect.

Sour grapes

There's no place like home.

Wolf in sheep's clothing

III. History and Geography

Teacher Resources:

- *The Story of the World, Volume 1: Ancient Times*, Susan Wise Bauer
- *A History of the United States and Its People*, Edward Eggleston
- *A History of US, Book 1: The First Americans*, Joy Hakim

Read-aloud Resources:

- Core Knowledge *Tell It Again!* Read-Aloud Anthologies and Flipbooks (available in PDF as part of the Core Knowledge Language Arts resources at coreknowledge.org):
  - *Early World Civilizations*
  - *Early American Civilizations*
  - *A New Nation: American Independence*
  - *Frontier Explorers*
- Various trade publications, including:
  - *A Visit to Egypt*, Peter and Connie Roop
  - DK Eyewitness Books (useful as a visual aid)
  - *And Then What Happened, Paul Revere?*, Jean Fritz
  - *The Inca Empire*, Sandra Newman
  - *The Story of the Liberty Bell*, Natalie Miller
  - *Tomie dePaola's Book of Bible Stories*, Tomie dePaola
  - *Muhammad*, Demi

Fall Semester –

a. Geography

- ♦ Spatial Sense:

  Name your continent, country, state, and community

  Understand map keys, legends, and symbols

  Understand North, South, East, and West on a map

  Identify major oceans: Pacific, Atlantic, Indian, Arctic

  Identify seven continents: Asia, Europe, Africa, North America, South America, Antarctica, Australia

  Locate: Canada, United States, Mexico, and Central America

  Locate: Equator, Northern Hemisphere, Southern Hemisphere, North Pole, and South Pole

- ♦ Geographical Terms and Features: peninsula, harbor, bay, island

b. Early World Civilizations

- ♦ Mesopotamia: The "Cradle of Civilization"

  Importance of Tigris and Euphrates Rivers

  Development of writing, why writing is important to the development of civilization

Code of Hammurabi, why rules and laws are important to the development of civilization

- Ancient Egypt

  Geography: Africa, Sahara Desert

  Importance of Nile River, floods, and farming

  Pharaohs: Tutankhamen, Hatshepsut

  Pyramids and mummies, animal gods, Sphinx

  Writing: Hieroglyphics

c. History of World Religions

- Judaism

  Belief in one God

  Israel, Chanukah, Star of David, Torah, synagogue

  Important stories: Noah and the Flood, Exodus, 10 Commandments, David and Goliath

- Christianity

  Christianity grew out of Judaism

  Jesus, meaning of "messiah"

  Christmas and Easter, symbol of the cross

  Important stories: Nativity, Visit of the Magi, Feeding of the 5000, Good Samaritan, Death and Resurrection

- Islam

  Originated in Arabia, spread worldwide

  Followers are called Muslims

  Allah, Muhammad, Makkah, Qur'an, mosque

  Symbol of crescent and star (found on the flags of many mainly Islamic nations)

  Important stories: Early life of Muhammad, Revelation to Muhammad, Night Journey, Flight from Mecca

d. Modern Civilization and Culture: Mexico

- Geography:

  North American continent, locate Mexico relative to Canada and the US

  Central America, Yucatan Peninsula

  Pacific Ocean, Gulf of Mexico, Rio Grande

  Mexico City

- Culture:
  Indian and Spanish heritage
  Traditions: fiesta, piñata
  National Holiday: September 16, Independence Day

Spring Semester –

a. Early People and Civilizations
   - The earliest people: hunters and nomads
     Crossing from Asia to North America (the land bridge as one possibilitiy)
     From hunting to farming
     Gradual development of early towns and cities
   - Early American Civilizations
     Maya in Mexico and Central America
     Aztecs in Mexico: Moctezuma (Montezuma), Tenochtitlan (Mexico City)
     Inca in South America (Peru, Chile): Cities in the Andes, Machu Picchu

b. Early Exploration and Settlement
   - Columbus
   - The Conquistadors
     The search for gold and silver
     Hernan Cortes and the Aztecs
     Francisco Pizarro and the Inca
     Diseases devastate Native American population
   - English settlers
     The story of the Lost Colony: Sir Walter Raleigh, Virginia Dare
     Virginia: Jamestown, Captain John Smith, Pocahontas and Powhatan
     Slavery, plantations in Southern colonies
     Massachusetts: Pilgrims, Mayflower, Thanksgiving Day, Massachusetts Bay Colony, the Puritans

c. The American Revolutions
   - Locate the original 13 colonies
   - The Boston Tea Party
   - Paul Revere's ride, "One if by land, two if by sea."
   - Minutemen and Redcoats, the "shot heard round the world."
   - Thomas Jefferson and the Declaration of Independence

- Fourth of July
- Benjamin Franklin: patriot, inventor, writer
- George Washington: military commander, first president, Martha Washington, capital city named Washington
- Legend of Betsy Ross and the flag

d. Early Exploration of the American West
   - Daniel Boone and the Wilderness Road
   - The Louisiana Purchase: explorations of Lewis and Clark, Sacagawea
   - Geography: Locate Appalachian Mountains, Rocky Mountains, Mississippi River

e. Symbols and Figures: recognize and become familiar with the significance of
   - Liberty Bell
   - Current US president
   - American flag
   - Bald eagle

III. Mathematics

Resources:

- Primary Mathematics Textbooks 1A & 1B, US Edition, Singapore Mathematics
- Primary Mathematics Workbooks 1A & 1B, US Edition, Singapore Mathematics
- Primary Math HOME Instructor Guides 1A & 1B, US Edition, Singapore Mathematics

Fall Semester –

a. Numbers 0 to 10
   - Counting

b. Number Bonds: making number stories

c. Addition
   - Making addition stories
   - Addition with number bonds
   - Other methods of addition

d. Subtraction
   - Making subtraction stories

- Methods of subtractions

e. Ordinal Numbers: naming position
f. Numbers to 20
    - Counting and comparing
    - Addition and subtraction
g. Shapes
    - Common shapes
h. Length
    - Comparing length
    - Measuring length
i. Weight
    - Comparing weight
    - Measuring weight

Spring Semester –

q. Comparing numbers
    - Comparing numbers
    - Comparison by subtraction
r. Graphs: Picture Graphs
s. Numbers to 40
    - Counting
    - Tens and ones
    - Addition and subtraction
    - Adding three numbers
t. Multiplication
    - Adding equal groups
    - Making multiplication stories
    - Multiplication within 40
u. Division: sharing and grouping
v. Halves and quarters: making halves and quarters
w. Time: telling time
x. Numbers to 100
    - Tens and ones
    - Order of numbers

- ♦ Addition within 100
- ♦ Subtraction within 100

y. Money

- ♦ Bills and coins
- ♦ Shopping

IV. Science

Teacher Resources:

- Science Explorer series (Teachers Editions): *Animals, Astronomy, Chemical Building Blocks, Earth's Changing Surface, Earth's Wates, Electricity and Magnetism, Environmental Science, Human Biology and Health, Inside Earth, Integrated Lab Manual, The Nature of Science and Technology, Weather and Climate*

Read-aloud Resources:

- *Edward Jenner and the Smallpox Vaccine*, Linda Ross
- *Egg to Chick*, Millicent Selsam
- *Eggs of Things*, Maxine W. Kumin and Anne Sexton
- *Living in the Arctic*, Allan Fowler
- *Manfish: A Story of Jacques Cousteau,* Jennifer Berne
- *Marshes & Swamps*, Gail Gibbons
- *More Eggs of Things*, Maxine W. Kumin and Anne Sexton
- *My Feet*, Aliki
- *My Hands*, Aliki
- *Pasteur's Fight Against Microbes*, Beverley Birch and Christian Birmingham
- *Plant Earth/Inside Out*, Gail Gibbons
- *Redwoods Are the Tallest Trees in the World*, David Adler
- *Sea Turtles*, Gail Gibbons and Paula Parker
- *Seeds and More Seeds*, Millicent Selsam
- *Sunken Treasure,* Gail Gibbons
- *Sun Up, Sun Down*, Gail Gibbons
- *The Fantastic Undersea Life of Jacques Cousteau,* Dan Yaccarino
- *The Planets,* Gail Gibbons
- *Whales*, Gail Gibbons
- *Who Eats What?,* Patricia Lauber

Student Resources:

- *ScienceSaurus: A Student Handbook* (yellow softcover), Houghton Mifflin Harcourt

a. Living Things and Their Environments

- ♦ Habitats

  Living things live in environments to which they are particularly suited

  Specific habitats and what lives there, for example:

  Forest – oak trees, squirrels, raccoons, snails, mice

  Water – fish, oysters, starfish, algae

The food chain or food web: a way of picturing the relationships between living things

Animals: big animals eat little ones, etc.

Plants: nutrients, water, soil, air, sunlight

- Oceans and undersea life

  Most of the earth is covered with water

  Locate oceans: Pacific, Atlantic, Indian, Arctic

  Oceans are salt water (vs. fresh water rivers and lakes)

  Coast, shore, waves, tides

  Currents, the Gulf Stream

  Landscape of the ocean floor: mountain peaks and deep valleys

  Diversity of ocean life

  Dangers to ocean life (e.g. overfishing, pollution, oil spills)

  Biography: Jacques Cousteau (marine biologist)

- Environmental change and habitat destruction: environments are constantly changing, and this can sometimes pose dangers to specific habitats, for example:

  Effects of population growth, development, pollution, litter

  Floods, fires, major temperature changes (e.g. ice ages)

- Special classifications of animals

  Herbivores, carnivores, omnivores

  Extinct animals

b. The Human Body

- Body Systems: skeletal system, muscular system, digestive system, circulatory system, nervous system
- Germs, diseases, and preventing illnesses

  Taking care of your body: exercise, cleanliness, healthy foods, rest

  Vaccinations
- Biography: Edward Jenner (found a way to stop smallpox)
- Biography: Louis Pasteur (made milk safer to drink)

c. Matter

- Basic concept of atoms
- Names and common examples of three states of matter: solid (e.g. wood, rocks), liquid (e.g. water), gas (e.g. air, steam).

- Water as an example of changing states of matter of a single substance

d. Properties of Matter: Measurement
   - Units of measurement:
     Length: centimeter, inch, foot
     Volume: gallon, quart
   - Temperature: degrees Fahrenheit

e. Introduction to Electricity
   - Static electricity
   - Basic parts of simple electric circuits (e.g. batteries, wire, bulb or buzzer, switch)
   - Conductive and nonconductive materials
   - Safety rules for electricity (e.g. never put your finger or anything metallic in an electrical outlet; never touch a switch or electrical appliance when your hands are wet or when you're in the bathtub, etc.)
   - Biography: Thomas Edison

f. Astronomy: Introduction to the Solar System
   - Sun: source of energy, light, heat
   - Moon: phases of the moon
   - The eight planets
   - Stars: constellations, Big Dipper, sun
   - Earth and its place in the solar system
     The earth moves around the sun
     The earth revolves; one rotation takes one day
     Sunrise and sunset
     When it is day where you are, it is night for people on the opposite side of the earth

g. The Earth
   - Geographical features of the earth's surface
     The shape of the earth, the horizon
     Oceans and continents
     North Pole and South Pole, Equator
   - What's inside the earth
     Inside the earth: layers (crust, mantle, core), high temperatures
     Volcanoes and geysers

Rocks and minerals

Formation and characteristics of different kinds of rocks: metamorphic, igneous, sedimentary

Important minerals in the earth (e.g. quartz, gold, coal, iron ore)

V. Visual Arts

Resources:

- Art Resources, Grade 1, Core Knowledge Foundation
- *Children's Book of Art*, DK Eyewitness
- Getting to Know the World's Greatest Artists, series by Mike Venezia:
  - *Claude Monet*
  - *Diego Rivera*
  - *Edgar Degas*
  - *Francisco Goya*
  - *Georgia O'Keefe*
  - *Grant Wood*
  - *Henri Matisse*
  - *Jacob Lawrence*
  - *James McNeill Whistler*
  - *Leonardo da Vinci*
  - *Paul Cezanne*
  - *Vincent van Gogh*

a. Art from Long Ago

- Look at and discuss

  Cave paintings

  Art of Ancient Egypt: Great Sphinx, mummy cases, Bust of Queen Nefertiti

b. Elements of Art

- Color

  Know that red, yellow, and blue are commonly referred to as the "primary colors," and that

  Blue + yellow = green

  Blue + red = purple

  Red + yellow = orange

  Observe the use of color in

  Tulips in Holland, Claude Monet

Arrangement in Black and Gray (also known as *Whistler's Mother*), James A. McNeill Whistler
Piñata, Diego Rivera

- Line
  Identify and use different lines: straight, zigzag, curved, wavy, spiral, thick, thin
  Observe how different lines are used in
  Parade, Jacob Lawrence
  The Swan, Henri Matisse
  One of Georgia O'Keefe's *Shell* paintings
- Shape: Recognize basic geometric shapes – square, rectangle, triangle, circle, oval – in nature, man-made objects, and artworks, including
  Parade, Jacob Lawrence
  Stone City, Iowa, Grant Wood
- Texture: Describe qualities of texture (e.g. rough, smooth, bumpy, scratchy, etc.) in
  Native American baskets (e.g. pomo basket)
  Little Fourteen-Year-Old Dancer (also known as *Dressed Ballet Dancer*), Edgar Degas
  Young Hare, Albrecht Dürer

c. Kinds of Pictures: Portrait and Still Life

- Recognize as a portrait or self-portrait:
  Mona Lisa, Leonardo da Vinci
  Don Manuel Osorio Manrique de Zuñiga, Francisco Goya
  Self-Portrait (1889), Vincent van Gogh
- Recognize as a still life:
  Irises, Vincent van Gogh
  Studies with fruit by Paul Cézanne, such as *Apples and Oranges*
- Recognize as a mural (a painting on a wall):
  The History of Medicine in Mexico, Diego Rivera

VI. Music

Resources:

- Core Knowledge Music Collection, Grades 1 and 2, Core Knowledge Foundation
- Text Resources, Grade 1, Core Knowledge Foundation
- Getting to Know the World's Greatest Composers, series by Mike Venezia:
    - *Wolfgang Amadeus Mozart*

a. Elements of Music:

- ♦ Through participation, become familiar with basic elements of music (rhythm, melody, harmony, form, timbre, etc.).

  Recognize a steady beat, accents, and the downbeat; play a steady beat; recognize accents.

  Move responsively to music.

  Recognize short and long sounds.

  Discriminate between fast and slow.

  Discriminate between obvious differences in pitch: high and low.

  Discriminate between loud and soft.

  Understand that melody can move up and down.

  Hum the melody while listening to music.

  Echo short rhythms and melodic patterns.

  Play simple rhythms and melodic patterns.

  Recognize like and unlike phrases.

  Recognize that music has timbre or tone color.

  Sing unaccompanied, accompanied, and in unison.

- ♦ Understanding the following notation:

  Whole note, half note, quarter note

b. Listening and Understanding

- ♦ Musical terms and concepts:

  Composers: know that a composer is someone who writes music; become familiar with Wolfgang Amadeus Mozart as a composer who wrote what is known as classical music, and listen to the Allegro (first movement) from *A Little Night Music* (*Eine kleine Nachtmusik*).

  Orchestra: become familiar with the families of instruments in the orchestra (strings, brass, woodwinds, percussion); know that the leader of

the orchestra is called the conductor; listen to Sergei Prokofiev's *Peter and the Wolf*.

- Music can tell a story

  Opera: understand that opera combines music, singing, and acting; listen to selections from Humperdinck's *Hansel and Gretel* ("Brother, Come Dance with Me," "I Am the Little Sandman," and "Children's Prayer").
  Instrumental Music: listen to Paul Dukas, *The Sorcerer's Apprentice*.
  Ballet: understand that ballet combines music and movement, often to tell a story; listen to Tchaikovsky's *Nutcracker Suite*.

- American musical traditions: Jazz

  Understand that jazz is a kind of music that developed in America, with African and African American roots, and that jazz musicians improvise.
  Recognize Louis Armstrong as a great early jazz musician.

c. Songs

America the Beautiful
Billy Boy
Dry Bones
For He's a Jolly Good Fellow
Frère Jacques
La Cucaracha
Make New Friends
Michael, Row the Boat Ashore
Oh, Dear, What Can the Matter Be?
Oh, John the Rabbit
Oh! Susanna
On Top of Old Smokey
She'll Be Comin' 'Round the Mountain
Skip to My Lou
Take Me Out to the Ball Game
There's a Hole in the Bucket
When the Saints Go Marching In
Yankee Doodle

First Grade Curriculum Map

	August-September	October	November	December	January	February	March	April	May
Math (Primary Mathematics)	Lessons 1-3 (1A)	Lessons 4-5 (1A)	Lessons 6-7 (1A)	Lessons 8-9 (1A)	Lessons 1-2 (1B)	Lessons 3-4 (1B)	Lessons 5-6 (1B)	Lessons 7-8 (1B)	Lesson 9 (1B)
Literature (include approx. 2 poems per month)	Frog Prince Hansel and Gretel Thumbelina (& variations)	Cinderella (& variations) Jack and the Beanstalk Pied Piper	Pinocchio Puss-in-Boots Br'er Rabbit	Princess and the Pea Rapunzel	Aesop's Fables	Rumpelstiltskin Sleeping Beauty The Boy at the Dike	Peter Rabbit House at Pooh Corner	Why the Owl Has Big Eyes Lon Po Po/ Little Red Riding Hood	Medio Pollito How Anansi Got Stories It Could Always Be Worse
Phonics & Literacy (Riggs) ** Includes Grammar and Composition*	2 weeks review, assessment, 10 lessons	10-15 lessons, mastery of at least one list	10-15 lessons, mastery of at least one list	10-15 lessons, mastery of at least one list	10-15 lessons, mastery of at least one list	10-15 lessons, mastery of at least one list	10-15 lessons, mastery of at least one list	10-15 lessons, mastery of at least one list	10-15 lessons, mastery of at least one list
Science	Habitats & Food Chains Oceans Jacques Cousteau Environmental Change	Classification of Animals	Human Body Louis Pasteur	Human Body Edward Jenner	Astronomy	Matter	Electricity Thomas Edison	The Earth	The Earth
History & Geography	Basic Geography and Maps Modern Mexico	Mesopotamia	Ancient Egypt Judaism	Islam Christianity	First Americans Maya, Aztec, Inca	Early Exploration and Settlement	Thirteen Colonies American Revolution	American Revolution American symbols	Exploration of American West
Art		Art from long ago	Color	Line	Shape	Texture	Portrait	Still Life	
Music	Basic Elements 2 songs	Basic Notation 2 songs	Composers Mozart 2 songs	Orchestra Prokofiev 2 songs	Opera 2 songs	Instrumental Music 2 songs	Ballet 2 songs	Jazz 2 songs	Review notation, elements 2 songs

Second Grade

I. Phonics & Literacy

Resources:

- *Writing and Spelling Road to Reading and Thinking*, Level I Teacher's Edition, Riggs Institute
- *Writing and Spelling Road to Reading and Thinking*, Level II Teacher's Edition, Riggs Institute
- Box of Phonogram Cards, Riggs Institute
- *Update/Enhancement Packet* from Access Literacy
- *The ABC's and All Their Tricks*, Margaret Bishop
- *Standard Test Lessons in Reading*, Books A,B, & C, McCall-Crabbs
- *Standard Test Lessons in Reading* (Teacher's Edition), McCall-Crabbs
- *Standard Test Lessons in Reading Answer Sheets*, McCall-Crabbs
- *My English Orthography Notebook*, Access Literacy

a. New Schools: In the first year of a school, 2nd grade teachers should begin with Lesson 1 of the Level I manual and proceed at one lesson per day through handwriting and phonograms 1-55. Teachers should then assess the class ability level using the assessments and related instructions on pages 29-42 of the Level I manual. Teachers should grade each test by counting the number of correctly spelled words until a student misses five words in a row. The class average should then be compared to the equivalency table on page 33, and this score will indicate the spelling list with which the class should begin. From this starting point, teachers should proceed at a pace of approximately one lesson per day, or one spelling-vocabulary list every two weeks, through the entire year. If the class average places them starting beyond List 3, the teacher will teach the spelling list where the class averaged. After an entire list is taught and while teaching the next spelling list, begin to teach phonograms 56-71, 2 phonograms per day in addition to the words, until the phonograms are completed.

b. Other Schools: After a school is established, most second-grade students will be well acquainted with the Level I program from 1st grade. To begin the new school year, teachers should take two weeks to review handwriting and phonograms, and some of the vocabulary words from first grade to review rules and markings. Then the teacher will assess the class ability level using the assessments and related instructions on pages 29-42 of the Level I manual. Teachers should grade each test by counting the number of correctly spelled words until a student misses five words in a row. The class average should then be compared to the

equivalency table on page 33, and this score will indicate the spelling list with which the class should begin. From this starting point, teachers should proceed at a pace of approximately one lesson per day, or one spelling-vocabulary list every two weeks, through the entire year. Most classes should finish the Level I manual early in the year and proceed directly into the Level II manual.

c. Students should make daily entries in their own copy of *My English Orthography Notebook* such that the notebook is filled, or nearly filled, by the end of the school year.
d. Teachers should give students five McCall-Crabbs reading comprehension passages as 3-minute timed tests to assess the students' reading comprehension levels. Teachers should then use McCall-Crabbs reading comprehension books A-C for instruction and practice in reading comprehension 2 or 3 times per week for 15-20 minutes, with books distributed based upon each student's individual ability.

II. Grammar & Composition

Resources:

- *Writing and Spelling Road to Reading and Thinking*, Level I Teacher's Edition, Riggs Institute
- Audio resources for *Well-Ordered Language*, Level 1A, Coupland and Peters

While the emphasis should be on learning to read in the kindergarten through second grades, grammar is an important tool to achieve that goal. Students should have a basic definition of the eight parts of speech and understand how those fit within sentences for comprehensive understanding of their reading and writing. This is done primarily through review of the grammar in the Riggs Level I Manual. Grammar instruction integrates into daily spelling and sentence writing through teaching the parts of speech for spelling words, study of sentence patterns, and sentence analysis based upon those patterns. The Well-Ordered Language songs about the parts of speech are useful to help students memorize definitions. The grammar in the Level II Riggs Manual should be disregarded, as it introduces diagramming which will not be used until the fourth grade.

III. Literature

Teacher Resources:

- Listen, My Children, Second Grade, Core Knowledge Foundation
- What Your Second Grader Needs to Know, Core Knowledge Foundation
- *Classic Myths to Read Aloud,* William F. Russell
- *D'Aulaire' s Book of Greek Myths*, Ingri d'Aulaire and Edgar Parin d'Aulaire
- *Charlotte's Web*, E.B. White
- *Peter Pan,* J.M. Barrie
- *Sign of the Beaver,* Elizabeth George Speare
- *American Tall Tales,* Mary Pope Osborne

a. Poetry

Listen, My Children: Poems for Second Graders

- Poems:

  Bed in Summer, Robert Louis Stevenson

  Bee! I'm expecting you, Emily Dickinson

  Buffalo Dusk, Carl Sandburg

  Caterpillars, Aileen Fisher

  Discovery, Harry Behn

  Harriet Tubman, Eloise Greenfield

  Hurt No Living Thing, Christina Rossetti

  Lincoln, Nancy Byrd Turner

  The Night Before Christmas, Clement Clarke Moore

  Rudolph Is Tired of the City, Gwendolyn Brooks

  Seashell, Federico Garcia Lorca

  Smart, Shel Silverstein

  Something Told the Wild Geese, Rachel Field

  There Was an Old Man with a Beard, Edward Lear

  Who Has Seen the Wind? Christina Rossetti

  Windy Nights, Robert Louis Stevenson

b. Fiction

- Novels

  Charlotte's Web, E.B. White

  Peter Pan, James M. Barrie

  Sign of the Beaver, Elizabeth George Speare

- Stories

What Your Second Grader Needs to Know

Beauty and the Beast
The Blind Men and the Elephant
A Christmas Carol, Charles Dickens
The Emperor's New Clothes, Hans Christian Andersen
The Fisherman and His Wife, Brothers Grimm
How the Camel Got His Hump, a "Just-So" story by Rudyard Kipling
Iktomi Lost His Eyes
The Magic Paintbrush
El Pajaro Cu
Talk
The Tiger, the Brahman, and the Jackal
The Tongue-Cut Sparrow

- Mythology of Ancient Greece

D'Aulaire' s Book of Greek Myths

Gods of Ancient Greece: Zeus, Hera, Apollo, Artemis, Poseidon, Aphrodite, Demeter, Ares, Hermes, Athena, Hephaestus, Dionysus, Eros, Hades
Mythological creatures and characters: Atlas, centaurs, Cerberus, and Pan
Greek Myths: Mount Olympus, Prometheus, Pandora's Box, Swift-footed Atalanta, Demeter and Persephone, Hercules and the Labors of Hercules

Classic Myths to Read Aloud

Mythological creatures and characters: Pegasus
Greek Myths: Oedipus and the Sphinx, Theseus and the Minotaur, Daedalus and Icarus, Arachne the Weaver, The Story of Helen of Troy, The Return of Ulysses

- Tall Tales

American Tall Tales

Paul Bunyan

Johnny Appleseed (introduced in Kindergarten)
John Henry
Pacos Bill
Casey Jones (Introduced in Kindergarten)

- Literary Terms: myth, tall tale, limerick

c. Sayings and Phrases:

What Your Second Grader Needs to Know

Back to the drawing board
Better late than never
Cold feet
Don't cry over spilled milk.
Don't judge a book by its cover.
Easier said than done
Eaten out of house and home
Get a taste of your own medicine
Get up on the wrong side of the bed
In hot water
Keep your fingers crossed.
Practice what you preach.
The real McCoy
Two heads are better than one.
Turn over a new leaf
Where there's a will there's a way.
You can't teach an old dog new tricks.

IV. History and Geography

Teacher Resources:

- *The Story of the World, Volume 1: Ancient Times*, Susan Wise Bauer
- *A History of the United States and Its People*, Edward Eggleston
- *A History of US, Book 6: War, Terrible War*, Joy Hakim

Read-aloud Resources:

- Core Knowledge *Tell It Again!* Read-Aloud Anthologies and Flipbooks (available in PDF as part of the Core Knowledge Language Arts resources at coreknowledge.org):
  - *Early Asian Civilizations*
  - *Ancient Greek Civilization*
  - *The War of 1812*
  - *Westward Expansion*
  - *The US Civil War*
  - *Immigration*
  - *Fighting for a Cause*
- Various Trade Books, including:
  - DK Eyewitness Books (useful as a visual aid)
  - *D'Aulaires' Book of Greek Myths*, Ingri and Edgar Parin D'Aulaire
  - *The Golden Days of Greece*, Olivia Coolidge

Fall Semester –

a. Geography

- ♦ Spatial Sense:

  Name your continent, country, state, and community

  Understand map keys, legends, and symbols

  Understand North, South, East, and West on a map

  Identify major oceans: Pacific, Atlantic, Indian, Arctic

  Identify seven continents: Asia, Europe, Africa, North America, South America, Antarctica, Australia

  Locate: Canada, United States, Mexico, and Central America

  Locate: Equator, Northern Hemisphere, Southern Hemisphere, North Pole, and South Pole

- ♦ Geographical Terms and Features: coast, valley, prairie, desert, oasis

b. Early Asian Civilizations

- ♦ Geography of Asia:

  The largest continent, with the most populous countries in the world

  Locate: China, India, Japan

- ♦ India

  Indus River and Ganges River

Hinduism: Brahma, Vishnu, Shiva, holy books including the Rig Veda
Buddhism: Prince Siddhartha, outgrowth from Hinduism, spread throughout Asia
King Asoka (or Ashoka)

- China
  Yellow and Yangtze Rivers
  Teachings of Confucius (for example, honor your ancestors)
  Great Wall of China
  Invention of paper
  Importance of silk
  Chinese New Year

c. Modern Japanese Civilization
   - Geography
     Locate relative to continental Asia ("land of the rising sun")
     Four major islands
     Pacific Ocean, Sea of Japan
     Mt. Fuji
     Tokyo
   - Culture: Japanese flag, big modern cities, traditional craft of origami, traditional costume of kimono

d. The Ancient Greek Civilization
   - Geography: Mediterranean Sea, Aegean Sea, Crete
   - Sparta
   - Athens as a city-state: the beginnings of democracy
   - Persian Wars: Marathon and Thermopylae
   - Olympic games
   - Worship of gods and goddesses
   - Great thinkers: Socrates, Plato, Aristotle
   - Alexander the Great

Spring Semester –

e. American Government: The Constitution

- Basic Elements: What is government? What is a constitution? Why might we want a constitutional government?
- American government is based on the Constitution, the highest law of our land
- James Madison, "Father of the Constitution"
- Government by the consent of the governed: "We the people"

f. The War of 1812
   - President James Madison and Dolley Madison
   - British impressment of American sailors
   - Old Ironsides
   - British burn the White House
   - Fort McHenry, Francis Scott Key, and "The Star-Spangled Banner"
   - Battle of New Orleans, Andrew Jackson

g. Westward Expansion
   - Pioneers head West
     New means of travel: Robert Fulton and the steamboat, Erie Canal, Railroads, the Transcontinental Railroad
     Routes west: wagon trains on the Oregon Trail
     The Pony Express
   - Native Americans
     Sequoyah and the Cherokee alphabet
     Forced removal to reservations: the "Trail of Tears"
     Some Native Americans displaced from their homes and ways of life by railroads (the "iron horse")
     Effect of near extermination of buffalo on Plains Indians

h. The Civil War
   - Controversy over slavery
   - Harriet Tubman, the "underground railroad"
   - Northern v. Southern states (Yankees v. Rebels)
   - Ulysses S. Grant and Robert E. Lee
   - Clara Barton, "Angel of the Battlefield," founder of American Red Cross
   - President Abraham Lincoln: keeping the Union together

- Emancipation Proclamation and the end of slavery

i. Immigration and Citizenship
   - America as the "land of opportunity"
   - The meaning of "e pluribus unum"
   - Ellis Island and the Statue of Liberty
   - Millions of newcomers to America: large populations of immigrants settle in major cities like New York, Chicago, Philadelphia, Detroit, Cleveland, Boston, San Francisco
   - Citizenship:
     What it means to be a citizen of a nation
     American citizens have certain rights and responsibilities: voting, holding public office, paying taxes
     Becoming an American citizen (by birth, naturalization)
   - Extension of Citizenship and its benefits:
     19th Amendment: esp. Susan B. Anthony
     Civil Rights Movement: Rosa Parks, Martin Luther King, Jr.

j. Geography of the Americas
   - North America: Canada, United States, Mexico
     The United States: fifty states; territories of American Samoa, Guam, Puerto Rico, and the U.S. Virgin Islands; Mississippi River, Appalachians, Rocky Mountains, Great Lakes
     Atlantic and Pacific Oceans, Gulf of Mexico, Caribbean Sea, West Indies
     Central America
   - South America
     Brazil: largest country in South America, Amazon River, rain forests
     Peru and Chile: Andes Mountains
     Locate: Venezuela, Colombia, Ecuador
     Bolivia: named after Simon Bolivar, "The Liberator"
     Argentina: the Pampas
     Main languages: Spanish and Portuguese

k. Symbols and Figures: US flag (current and earlier versions), Statue of Liberty, Lincoln Memorial

V. Mathematics

Resources:

- Primary Mathematics Textbooks 2A & 2B, US Edition, Singapore Mathematics
- Primary Mathematics Workbooks 2A & 2B, US Edition, Singapore Mathematics
- Primary Math HOME Instructor Guides 2A & 2B, US Edition, Singapore Mathematics

Fall Semester –

a. Numbers to 1000
    - ♦ Looking back
    - ♦ Comparing numbers
    - ♦ Hundreds, tens, and ones

b. Addition and Subtraction
    - ♦ Meanings of addition and subtraction
    - ♦ Addition without renaming
    - ♦ Subtraction without renaming
    - ♦ Addition with renaming
    - ♦ Subtraction with renaming

c. Length
    - ♦ Measuring length in meters
    - ♦ Measuring length in centimeters
    - ♦ Measuring length in yards and feet
    - ♦ Measuring length in inches

d. Weight
    - ♦ Measuring weight in kilograms
    - ♦ Measuring weight in grams
    - ♦ Measuring weight in pounds
    - ♦ Measuring weight in ounces

e. Multiplication and Division
    - ♦ Multiplication
    - ♦ Division

f. Multiplication Tables of 2 and 3
    - ♦ Multiplication table of 2
    - ♦ Multiplication table of 3
    - ♦ Dividing by 2

- Dividing by 3

Spring Semester –

g. Addition and Subtraction
    - Finding the missing number
    - Methods for mental addition
    - Methods for mental subtraction
h. Multiplication and Addition
    - Multiplying and Dividing by 4
    - Multiplying and Dividing by 5
    - Multiplying and Dividing by 10
i. Money
    - Dollars and Cents
    - Adding Money
    - Subtracting Money
j. Fractions
    - Halves and quarters
    - Writing fractions
k. Time
    - Telling time
    - Time intervals
l. Capacity
    - Comparing capacity
    - Liters
    - Gallons, quarts, pints, and cups
m. Graphs: Picture graphs
n. Geometry
    - Flat and curved faces
    - Making shapes
o. Area: Square Units

VI. Science

Teacher Resources:

- *Anton van Leeuwenhoek*, Lisa Yount
- Science Explorer series (Teachers Editions): *Animals, Cells and Heredity, Earth's Waters, Electricity and Magnetism, From Bacteria to Plants, Human Biology and Health, Integrated Lab Manual, Motion, Forces, and Energy*

Read-aloud Resources:

- *All Aboard! Elijah McCoy's Steam Engine*, Monica Kulling
- *Chicks and Chickens*, Gail Gibbons
- *Children of Summer: Henri Fabre's Insects*, Margaret J. Anderson
- *Daniel Hale Williams: Surgeon Who Opened Hearts and Minds*, Mike Venezia
- *Florence Nightingale,* Demi
- *Florence Nightingale,* Shannon Zemlicka
- *Ladybugs*, Gail Gibbons
- *Monarch Butterfly*, Gail Gibbons
- *Small Wonders: Jean-Henri Fabre and His World of Insects*, Matthew Clark Smith

Student Resources:

- *ScienceSaurus: A Student Handbook* (red softcover), Houghton Mifflin Harcourt

a. Cycles in Nature

- ♦ Seasonal Cycles

  The four seasons and the earth's orbit around the sun

  Seasons and life processes

  Spring: sprouting, sap flow in plants, mating and hatching

  Summer: growth

  Fall: ripening, migration

  Winter: plant dormancy, animal hibernation

- ♦ Life cycles

  Life cycle: birth, growth, reproduction, death

  Reproduction in plants and animals: from seed to seed in plants, from egg to egg in chickens, from frog to frog, from butterfly to butterfly (metamorphosis)

- ♦ The water cycle

  Most of the earth's surface is covered by water

  Water cycle:

  Evaporation and condensation

  Water vapor in the air, humidity

  Clouds: cirrus, cumulus, stratus

Precipitation, groundwater

b. Insects
    - Helpful: pollination; products like honey, beeswax, and silk; eat harmful insects
    - Harmful: destroy crops, trees, wooden buildings, clothes; carry disease; bite or sting
    - Distinguishing characteristics
      Exoskeleton, chitin
      Six legs and three body parts: head, thorax, and abdomen
      Most but not all insects have wings
    - Life cycles: metamorphosis
      Some insects look like miniature adults when born from eggs, and they molt to grow (examples: grasshopper, cricket)
      Some insects go through distinct stages of egg, larva, pupa, adult (examples: butterflies, ants)
    - Social insects
      Most insects live solitary lives, but some are social (such as ants, honeybees, termites, wasps)
      Ants: colonies
      Honeybees: workers, drones, queen
    - Biography: Jean-Henri Fabre (entomologist)

c. The Human Body
    - Cells
      All living things are made up of cells, too small to be seen without a microscope
      Cells make up tissues; tissues make up organs; organs work in systems
      Biography: Anton van Leeuwenhoek (invented the microscope)
    - Digestive and Excretory Systems
      Salivary glands, taste buds
      Teeth: incisors, bicuspids, molars
      Esophagus, stomach, liver, small intestine, large intestine
      Kidneys, urine, bladder, urethra, anus, appendix
    - Taking care of your body: a healthy diet
      The “food pyramid” or “MyPlate”

Vitamins and minerals

- Biographies:
  Florence Nightingale (helped the wounded in the Crimean War/ made hospitals more sanitary)
  Daniel Hale Williams (performed the first open-chest surgery)

d. Magnetism
   - Magnetism demonstrates that there are forces we cannot see that act upon objects
   - Most magnets contain iron
   - Lodestones: naturally occurring magnets
   - Magnetic poles: north-seeking and south seeking poles
   - Magnetic field (strongest at the poles)
   - Laws of magnetic attraction: unlike poles attract, like poles repel
   - The earth behaves as if it were a huge magnet: north and south magnetic poles
   - Orienteering: use of a magnetized needle in a compass, which will always point to the north

e. Simple Machines
   - Lever
   - Pulley
   - Wheel-and-axle
     Gears: wheels with teeth and notches
     How gears work, and familiar uses (for example, in bicycles)
   - Inclined plane
   - Wedge
   - Screw
   - Friction, and ways to reduce friction (lubricants, rollers, etc.)
   - Biography: Elijah McCoy (invented the automatic lubricator)

VII. Visual Arts

Resources:

- Art Resources, Grade 2, Core Knowledge Foundation
- *Children's Book of Art*, DK Eyewitness
- Getting to Know the World's Greatest Artists, series by Mike Venezia:
    - *El Greco*
    - *Henri Matisse*
    - *Henri Rousseau*
    - *Marc Chagall*
    - *Pablo Picasso*
    - *Paul Klee*
    - *Vincent van Gogh*

a. Elements of Art

- ♦ Recognize lines as horizontal, vertical, or diagonal
- ♦ Observe the use of line in

  Mother and Child, Pablo Picasso

  The Great Wave at Kanagawa Nami-Ura from *Thirty-six Views of Mt. Fuji*, Katsushika Hokusai

b. Sculpture: Observe shape, mass, and line in sculptures, including

  The Discus Thrower

  Flying Horse, from Wu-Wei, China

  The Thinker, Auguste Rodin

c. Kinds of Pictures: Landscapes

- ♦ Recognize as landscapes and discuss

  The Oxbow (also known as *View from Mount Holyoke, Northampton, Massachusetts, after a Thunderstorm*), Thomas Cole

  View of Toledo (also known as *Toledo in a Storm*), El Greco

  Virgin Forest, Henri Rousseau

  The Starry Night, Vincent van Gogh

d. Abstract Art

- ♦ Compare lifelike and abstract animals, including

  Paintings of birds by John James Audubon

  Young Hare, Albrecht Durer

  Cat and Bird, Paul Klee

  Bull's Head (made from bicycle seat and handlebars), Pablo Picasso

  The Snail (also known as *Chromatic Composition*), Henri Matisse

- ♦ Observe and discuss examples of abstract painting and sculpture, including
  I and the Village, Marc Chagall
  Bird in Space, Constantin Brancusi

e. Architecture

- ♦ Understand architecture as the art of designing buildings
- ♦ Understand symmetry and a line of symmetry, and observe symmetry in the design of some buildings (such as the Parthenon)
- ♦ Noting line, shape, and special features (such as columns and domes), look at the following:
  The Parthenon
  Great Stupa (Buddhist temple in Sanchi, India)
  Himeji Castle (also known as "White Heron Castle," Japan)
  The Guggenheim Museum (New York City)

VIII. Music

Resources:

- Core Knowledge Music Collection, Grades 1 and 2, Core Knowledge Foundation
- Text Resources, Grade 2, Core Knowledge Foundation
- Getting to Know the World's Greatest Composers, series by Mike Venezia:
  - *Johann Sebastian Bach*
  - *Ludwig van Beethoven*

a. Elements of Music:

- ♦ Through participation, become familiar with basic elements of music (rhythm, melody, harmony, form, timbre, etc.).
  Recognize a steady beat, accents, and the downbeat; play a steady beat.
  Move responsively to music
  Recognize short and long sounds
  Discriminate between fast and slow; gradually slowing down and getting faster.
  Discriminate between differences in pitch: high and low.
  Discriminate between loud and soft; gradually increasing and decreasing volume.
  Understand that melody can move up and down.

Hum the melody while listening to music.
Echo short rhythms and melodic patterns.
Play simple rhythms and melodies.
Recognize like and unlike phrases.
Recognize timbre (tone color).
Sing unaccompanied, accompanied, and in unison.
Recognize verse and refrain.
Recognize that musical notes have names.
Recognize a scale as a series of notes.
Sing the C major scale using "do re mi" etc.

- Understanding the following notation:
  Staff, treble clef, names of lines and spaces in the treble clef
  Whole note, half note, quarter note
  Whole rest, half rest, quarter rest

b. Listening and Understanding

- The Orchestra:
  Review families of instruments: strings, brass, woodwind, percussion
  Become familiar with instruments in the string family – violin, viola, cello, double bass – and listen to
    Camille Saint-Saëns, from *Carnival of the Animals*: "The Swan" (cello) and "Elephants" (double bass)
    Antonio Vivaldi, *The Four Seasons*
  Become familiar with instruments in the percussion family – for example, drums (timpani, snare), xylophone, wood block, maracas, cymbals, triangle, tambourine – and listen to Carlos Chavez, *Toccata for Percussion*, third movement.
- Keyboard Instruments: Recognize that the piano and organ are keyboard instruments, and listen to a variety of keyboard music, including:
  Wolfgang Amadeus Mozart, *Rondo Alla turca* from *Piano Sonata K. 331*
  Ludwig van Beethoven, *Für Elise*
  Felix Mendelssohn, from *Songs without Words*, "Spring Song"
- Composers and their music
  Antonio Vivaldi, *The Four Seasons*

Johann Sebastian Bach, *Minuet in G major* (collected by Bach in the *Anna Magdalena Notebook*); *Jesu, Joy of Man's Desiring*; *Toccata and Fugue in D minor*

Ludwig van Beethoven, *Symphony No. 6 ("Pastoral")*: first movement and from final movement, "Thunderstorm," to end of symphony.

c. Songs

Buffalo Gals
Casey Jones (chorus only)
Clementine
Dixie
Do-Re-Mi
The Erie Canal
Follow the Drinking Gourd
Good Bye Old Paint
Home on the Range
I've Been Working on the Railroad
John Henry
Old Dan Tucker
The Star-Spangled Banner
Swing Low, Sweet Chariot
This Land Is Your Land
When Johnny Comes Marching Home

Second Grade Curriculum Map

	August-September	October	November	December	January	February	March	April	May
Math **(Primary Mathematics)**	Lessons 1-2 (2A)	Lessons 3-4 (2A)	Lesson 5 (2A)	Lesson 6 (2A)	Lesson 1 (2B)	Lessons 2-3 (2B)	Lessons 4-5 (2B)	Lessons 6-7 (2B)	Lessons 8-9 (2B)
Literature (include approx. 2 poems per month)	Charlotte's Web	Magic Paintbrush Fisherman and His Wife Beauty and the Beast	Greek Mythology	Tongue-Cut Sparrow Christmas Carol How the Camel Got His Hump	Peter Pan	Iktomi Stories Tall Tales Talk	Sign of the Beaver	Emperor's New Clothes Blind Men & the Elephant	El Pajaro Cu Tiger, Brahman, & Jackal
Phonics & Literacy **(Riggs)** ** Includes Grammar and Composition*	2 weeks review, assessment, 15-20 lessons	20 lessons; mastery of 2 lists	20 lessons; mastery of 2 lists	20 lessons; mastery of 2 lists	20 lessons; mastery of 2 lists	20 lessons; mastery of 2 lists	20 lessons; mastery of 2 lists	20 lessons; mastery of 2 lists	15-20 lessons; mastery of 1-2 lists
Science	Seasons and Water Cycle Life Cycles	Insects	Insects Jean-Henri Fabre	Magnetism	Simple Machines Elijah McCoy	Cells and Microscopes Daniel Hale Williams Anton van Leeuwenhoek	Cells & Microscopes Taking Care of Your Body Florence Nightingale	Digestive and Excretory Systems	Plants
History & Geography	Basic Geography and Maps Ancient India	Ancient China	Ancient Greece	Modern Japan	Constitution War of 1812	Westward Expansion United States Geography	Civil War	Immigration and Citizenship	Geography of Central & South America
Art	Lines	Architecture	Architecture	Sculpture	Landscapes	Landscapes	Abstract Art	Abstract Art	
Music	Basic Notation 2 songs	Basic Elements 2 songs	String Instruments Carnival of the Animals 2 songs	Vivaldi 2 songs	Percussion Instruments Toccata for Percussion 2 songs	Keyboard Instruments Sonata K. 331 2 songs	Beethoven Spring Song 2 songs	Bach 2 songs	Review notation, elements

Third Grade

I. Phonics and Literacy

Resources:

- *Writing and Spelling Road to Reading and Thinking*, Level I Teacher's Edition, Riggs Institute (for first-year schools)
- *Writing and Spelling Road to Reading and Thinking*, Level II Teacher's Edition, Riggs Institute
- *Writing and Spelling Road to Reading and Thinking*, Level III Spelling List, Riggs Institute
- A box of Phonogram cards, Riggs Institute
- *The ABC's and All Their Tricks,* Margaret Bishop
- *Standard Test Lessons in Reading*: Books A, B, and C, McCall-Crabbs
- *Standard Test Lessons in Reading* (Teacher's Manual), McCall-Crabbs
- *Standard Test Lessons in Reading Answer Sheets*, McCall-Crabbs
- *My English Orthography Notebook*, Access Literacy
- "Older Student Adaptation: Instructions for 3-6th Grade Teachers," Access Literacy (pamphlet)

a. New Schools: In the first year of a school, 3rd grade teachers should spend the first month covering the material in the "Older Student Adaptation" pamphlet, which draws from various lessons in the Level I manual. This will include teaching the phonograms, remediating student handwriting or teaching cursive, and working on more basic spelling lists. After this month, teachers should test students according to the instructions on page 20 of the "Older Student Adaptation" pamphlet. Depending on the class average, the teacher will either review spelling lists as described on page 20, or move forward at the pace of one spelling-vocabulary list every two weeks, through the entire year or until the students have tested beyond the Level III vocabulary. Students should make daily entries in their own copy of *My English Orthography Notebook* such that the notebook is filled, or nearly filled, by the end of the school year.

b. Other Schools: After a school is established, most third-grade students will be well acquainted with the Level I and Level II programs from 1st and 2nd grade. To begin the new school year, teachers should assess the class ability level using the assessments and related instructions on pages 29-42 of the Level I manual. Teachers should grade each test by counting the number of correctly spelled words until a student misses five words in a row. The class average should then be compared to the equivalency table on page 33, and this score will indicate the

spelling list with which the class should begin. From this starting point, teachers should proceed at a pace of approximately one lesson per day, or 20-25 words per week, through the entire year. Most classes should finish the Level II manual early in the year and proceed directly into the Level III spelling list. If the class finishes the Level III list—or if the class orthography assessment scores are above the Level III spelling lists—then teachers should choose spelling and vocabulary words from the curriculum alongside teaching Latin and Greek roots from *English from the Roots Up, Vol.1*.

c. Students should make daily entries in their own copy of *My English Orthography Notebook* such that the notebook is filled, or nearly filled, by the end of the school year.

d. Teachers should give students five McCall-Crabbs reading comprehension passages as 3-minute timed tests to assess the students' reading comprehension levels. Teachers should then use McCall-Crabbs reading comprehension books A-C for instruction and practice in reading comprehension 2 or 3 times per week for 15-20 minutes, with books distributed based upon each student's individual ability.

II. Grammar & Composition

Resources:

- *Well-Ordered Language*, Level 1A, Peters and Coupland
- *Well-Ordered Language*, Level 1B, Peters and Coupland

a. Grammar

Level 1A

- Four Kinds of Sentences
- Principal Elements, Part 1—Subject and Predicate
- Principal Elements, Part 2—Subject and Predicate Verb
- Adverbs
- Adjectives
- Direct Objects
- Subject Pronouns
- Interrogative Sentences—Subject Pronouns and Helping Verbs

Level 1B

- Object Pronouns
- Pronoun Review
- Prepositional Phrases—Adverbial
- Introductory Prep Phrases
- Compound Subjects
- Compound Verbs
- Compound Objects

b. Composition

- Introduction to Paragraph
- Informative Paragraph
- Narrative Paragraph
- Persuasive Paragraph

I. Literature

Teacher Resources:

- *What Your Third Grader Needs to Know*, Core Knowledge Foundation
- *The Annotated Alice, Martin Gardner*
- *Classic Myths to Read Aloud,* William F. Russell
- *D'Aulaires Book of Norse Myths,*

Student Resources:

- *Arabian Nights Stories,* Philip Smith
- *Farmer Boy*, Laura Ingalls Wilder
- *Black Beauty,* Anna Sewell
- *Princess and the Goblin,* George MacDonald
- *Alice in Wonderland*, Lewis Carroll

a. Poetry

Listen, My Children: Poems for Third Graders

- Poems:

  Adventures of Isabel, Ogden Nash

  The Bee, Isaac Watts

  By Myself, Eloise Greenfield

  Catch a Little Rhyme, Eve Merriam

  The Crocodile, Lewis Carroll

Dream Variations, Langston Hughes
Eletelephony, Laura Richards
Father William, Lewis Carroll
First Thanksgiving of All, Nancy Byrd Turner
For want of a nail, the shoe was lost…, traditional
Jimmy Jet and His TV Set, Shel Silverstein
Knoxville, Tennessee, Nikki Giovanni
Trees, Sergeant Joyce Kilmer

- Terms: stanza, line

b. Fiction

- Novels

Black Beauty, Anna Sewell
Princess & the Goblin, George MacDonald
Farmer Boy, Laura Ingalls Wilder
Alice in Wonderland, Lewis Carroll

- Stories

Arabian Nights:

Aladdin and the Wonderful Lamp
Ali Baba and the Forty Thieves

What Your Third Grader Needs to Know

The Hunting of the Great Bear
The Husband Who Was to Mind the House
The Little Match Girl
The People Could Fly
Three Words of Wisdom
William Tell

- Myths and Mythical Characters

D'Aulaires Book of Norse Myths

Norse Mythology: Asgard, Valhalla, Hel, Odin, Thor, trolls
Norse gods and English names for days of the week: Tyr, Odin (Wodin), Thor, Frigg (Freya)

Classic Myths to Read Aloud

More Myths and Legends of Ancient Greece and Rome: Jason and the Golden Fleece, Perseus and Medusa, Cupid and Psyche, The

Sword of Damocles, Damon and Pythias, The Wanderings of Aeneas

What Your Third Grader Needs to Know

Androcles and the Lion, Horatius at the Bridge

- Literary Terms: biography, autobiography, fiction, nonfiction

c. Sayings and Phrases:

What Your Third Grader Needs to Know

Actions speak louder than words.

His bark is worse than his bite.

Beat around the bush

Beggars can't be choosers.

Clean bill of health

Cold shoulder

A feather in your cap

Last straw

Let bygones be bygones

One rotten apple spoils the whole barrel.

On its last legs

Rule the roost

The show must go on.

Touch and go

When in Rome do as the Romans do.

Rome wasn't built in a day.

II. History and Geography

Resources:

- *World Rivers* (Reader), Core Knowledge Foundation
- *Ancient Rome* (Reader), Core Knowledge Foundation
- *The Vikings* (Reader), Core Knowledge Foundation
- *The Earliest Americans* (Reader), Core Knowledge Foundation
- *Exploration of North America* (Reader), Core Knowledge Foundation
- *The Story of the World, Volume 1: Ancient Times*, Susan Wise Bauer
- *The Story of the World, Volume 3: Early Modern Times*, Susan Wise Bauer
- *A History of the United States and Its People*, Edward Eggleston
- DK Eyewitness Books (useful as a visual aid, especially because neither Bauer nor Eggleston use many pictures or maps)
- N.C. Wyeth's *Pilgrims*, Robert D. San Souci (illustrations by Wyeth)

Fall Semester –

a. Geography
    - ♦ Spatial Sense:
      Name your continent, country, state, and community
      Understand map keys, legends, and symbols
      Understand North, South, East, and West on a map
      Identify major oceans: Pacific, Atlantic, Indian, Arctic
      Identify seven continents: Asia, Europe, Africa, North America, South America, Antarctica, Australia
      Locate: Canada, United States, Mexico, and Central America
      Locate: Equator, Northern Hemisphere, Southern Hemisphere, North Pole, and South Pole
      Measure distances using a bar scale
      Use an atlas
    - ♦ Geographical Terms and Features: boundary, channel, delta, isthmus, plateau, reservoir, strait
    - ♦ Canada:
      French and British Heritage; French-speaking Quebec
      Rocky Mountains
      Hudson Bay, St. Lawrence River, Yukon River
      Provinces
      Major cities: Montreal, Quebec, Toronto, Vancouver
    - ♦ Important Rivers of the World:
      Terms: source, mouth, tributary, drainage basin
      Asia: Ob, Yellow, Yangtze, Ganges, Indus, Tigris, Euphrates
      Africa: Nile, Niger, Congo
      South America: Amazon, Parana, Orinoco
      North America: Mississippi and major tributaries, Mackenzie, Yukon
      Australia: Murray-Darling
      Europe: Volga, Danube, Rhine
b. Ancient Rome [Note: Cicero? The Roman Republic?]
    - ♦ Geography of the Mediterranean
      Mediterranean Sea, Aegean Sea, Adriatic Sea
      Greece, Italy, France, Spain

Strait of Gibraltar, Atlantic Ocean
North Africa, Asia Minor, Turkey
Bosporus Strait, Black Sea, Constantinople
Red Sea, Persian Gulf, Indian Ocean

- Background
  Define B.C./A.D.
  The legend of Romulus and Remus
  Latin as the language of Rome
  Pantheon, gods, goddesses
  The Republic: Senate, Patricians, Plebeians
  Orators/Statesmen: including Marcus Tullius Cicero and Cato the Elder
  Punic Wars: Carthage, Hannibal, Scipio Africanus
- The Empire
  Julius Caesar: defeat of Pompey, Cleopatra, Brutus, assassination
  Augustus Caesar
  The Forum: temples, marketplaces, etc.
  The Colosseum: circuses, gladiator combat, chariot races
  Roads, bridges, aqueducts
  Mt. Vesuvius, destruction of Pompeii
  Persecution of Christians
- The "Decline and Fall" of Rome
  Weak and corrupt emperors, legend of Nero fiddling as Rome burns
  Civil wars
  City of Rome sacked
  Social and moral decay
- The Eastern Roman Empire: Byzantium
  The rise of the Byzantine Empire
  Constantine, emperor who made Christianity the official religion of Rome
  Constantinople (now Istanbul) merges diverse influences and cultures
  Justinian, Justinian Code

c. The Vikings
   - From area now called Scandinavia (Sweden, Denmark, Norway)
   - Also called Norsemen, they were skilled sailors and shipbuilders
   - Traders, and sometimes raiders of the European coast

- Eric the Red and Leif Ericson (Leif "the Lucky")
- Earliest Europeans (long before Columbus) we know of to come to North America
  Locate: Greenland, Canada, Newfoundland

Spring Semester –

d. The Earliest Americans
   - Crossing from Asia to North America: migration of various peoples, land-bridge theory, and early peoples, including Inuits, Anasazi, mound builders
   - Native Americans
     In the Southwest: Pueblos (Hopi, Zuni), Dine (Navajo), Apaches
     Eastern "Woodland" Indians
       Woodland culture: wigwams, longhouses, farming, peace pipe, Shaman and Sachem
       Major tribes and nations: including Powhatan, Delaware, Susquehanna, Mohican, Massachusett, Iroquois Confederacy
     In the Southeast: Cherokee, Seminole

e. Early Exploration of North America
   - Early Spanish Exploration and Settlement
     Settlement of Florida
     Ponce de Leon, legend of the Fountain of Youth
     Hernando de Soto
     Founding of St. Augustine, oldest continuous European settlement in the United States
     Geography: Caribbean Sea, West Indies, Puerto Rico, Cuba, Gulf of Mexico, Mississippi River
   - Exploration and Settlement of the American Southwest
     Early Spanish explorers in the lands that are now Texas, New Mexico, Arizona, and California
     Missionary settlements, especially in Texas and California
     Coronado and the legend of the "Seven Cities of Cibola" (of Gold)
     Geography: Grand Canyon, Rio Grande

Conflicts between the Spanish and the Pueblos, including 1680 revolt led by Popé

- Search for the Northwest Passage

  Explorers who sought short cut to Asia

  John Cabot: Newfoundland

  Champlain: "New France" and Quebec

  Henry Hudson: the Hudson River

  Geography: "New France," Quebec, Canada, St. Lawrence River, the Great Lakes

f. The Thirteen Colonies: Life and Times Before the Revolution

- Geography:

  Thirteen colonies by region: New England, Middle Atlantic, Southern

  Climate and corresponding differences in agriculture (esp. New England vs. South)

  Important cities in trade and government, including Philadelphia, Boston, New York, and Charleston

- Southern Colonies

  Virginia

  Chesapeake Bay, James River

  Jamestown Colony: mission, establishment, trade with Powhatan Indians, John Smith, Pocahontas, John Rolfe, spread of disease, and The Starving Time

  Clashes between American Indians and English colonists

  Tobacco

  African slave labor

  Maryland: Catholicism, Lord Baltimore

  South Carolina: Charleston, plantations, slave labor

  North Carolina

  Georgia: James Oglethorpe's plan to establish a colony for English debtors

  Slavery in the Southern Colonies:

  Economic reasons that the Southern colonies came to rely on slavery

  The difference between indentured servants and slaves

The Middle Passage

- New England Colonies

  Development of maritime economy: fishing and shipbuilding

  Massachusetts

  Colonists seeking religious freedom from established church in England

  The Pilgrims: travel from England to Holland to Massachusetts, Mayflower, Mayflower Compact, Plymouth Rock, William Bradford, help from Wampanoag Indians (Squanto)

  The Puritans: Massachusetts Bay Colony, Governor John Winthrop, City on a Hill Speech, emphasis on education

  New Hampshire, Connecticut,

  Rhode Island: Roger Williams and religious toleration, Anne Hutchinson

- Middle Atlantic Colonies

  New Jersey, Delaware

  New York

  Dutch settlement in "New Netherland"

  Dutch West India Company acquisition of Manhattan and Long Island, establishment of New Amsterdam

  English take over colony, rename it New York

  Pennsylvania: William Penn, Society of Friends (Quakers), Philadelphia

III. Mathematics

Resources:

- Primary Mathematics Textbooks 3A & 3B, US Edition, Singapore Mathematics
- Primary Mathematics Workbooks 3A & 3B, US Edition, Singapore Mathematics
- Primary Math HOME Instructor Guides 3A & 3B, US Edition, Singapore Mathematics

Fall Semester –

a. Numbers to 10,000
   - Thousands, hundreds, tens, and ones
   - Number patterns

b. Addition and Subtraction

- Sum and difference
- Adding ones, tens, hundreds, and thousands
- Subtracting ones, tens, hundreds, and thousands
- Two-step word problems

c. Multiplication and Division
- Looking back
- More word problems
- Multiplying ones, tens, and hundreds
- Quotient and remainder
- Dividing hundreds, tens, and ones

d. Multiplication tables of 6, 7, 8, and 9
- Looking back
- Multiplying and dividing by 6
- Multiplying and dividing by 7
- Multiplying and dividing by 8
- Multiplying and dividing by 9

e. Money
- Dollars and cents
- Addition
- Subtraction

Spring Semester –

f. Mental Calculation
- Addition
- Subtraction
- Multiplication
- Division

g. Length
- Meters and centimeters
- Kilometers
- Yards, feet, and inches
- Miles

h. Weight

- Kilograms and grams
- More word problems
- Pounds and ounces

i. Capacity
   - Liters and milliliters
   - Gallons, quarts, pints, and cups

j. Graphs: Bar Graphs

k. Fractions
   - Fraction of a whole
   - Equivalent fractions

l. Time
   - Hours and minutes
   - Other units of time

m. Geometry
   - Angles
   - Right angles

n. Area and perimeter
   - Area
   - Perimeter
   - Area of a rectangle

IV. Science

Teacher Resources:

- *Copernicus*, Catherine M. Andronik
- *John Muir: America's Naturalist,* Thomas Locker
- *Mae Jemison: Out of This World,* Rose Blue
- Science Explorer series (Teacher's Editions): *Astronomy*, *Earth's Waters, Environmental Science, Human Biology and Health, Integrated Lab Manual, Inside Earth, The Nature of Science and Technology, Sound and Light*
- *Scheduling the Heavens: The Story of Edmond Halley,* Mary Virginia Fox
- *The Wild Muir: Twenty-Two of John Muir's Greatest Adventures,* Lee Stetson
- *Who Was Alexander Graham Bell?,* Bonnie Bader

Student Resources:

- DeltaScience ContentReaders series (purple editions): *Changes in Ecosystem, Earth, Moon, and Sun System, Ecosystems, Heat and Light Energy, Human Body Systems, Our Solar System and Beyond, Sound Energy*
- *ScienceSaurus: A Student Handbook* (blue softcover), Houghton Mifflin Harcourt

a. Introduction to the Classification of Animals
    - Scientists classify animals according to shared characteristics, for example: cold-blooded, warm-blooded, vertebrates, invertebrates
    - Different classes of vertebrates: Fish, Amphibians, Reptiles, Birds, Mammals

b. The Human Body
    - The muscular system: involuntary and voluntary muscles
    - The skeletal system
      Skeleton, bones, marrow
      Musculo-skeletal connections: ligaments, tendons, cartilage
      Skull, cranium
      Spinal column, vertebrae
      Joints
      Ribs, rib cage, sternum
      Scapula, pelvis, tibia, fibula
      Broken bones, x-rays
    - The nervous system
      Brain: medulla, cerebellum, cerebrum, cerebral cortex
      Spinal cord, nerves, reflexes
    - Vision: how the eye works
      Parts of the eye: cornea, iris and pupil, lens, retina
      Optic nerve
      Farsighted and nearsighted
    - Hearing: how the ear works
      Sound as vibration
      Outer ear, ear canal, eardrum
      Hammer, anvil, strirrup, cochlea
      Auditory nerve
      Protecting your hearing

c. Light and Optics
    - Speed of light
    - Light travels in straight lines
    - Transparent and opaque objects
    - Reflection

Mirrors: plane, concave, convex
Uses of mirrors in telescopes and microscopes

- The spectrum: use a prism to demonstrate the spectrum from white light
- Lenses: magnifying and bending light

d. Sound
   - Cause: object vibrating rapidly
   - Travels through solids, liquids, and gases
   - Speed of sound
   - Qualities of sound: pitch (high/low based on speed of vibration), intensity
   - Human voice: larynx, vocal cords, deeper/higher voices based on shape of vocal cords
   - Biography: Alexander Graham Bell (invented the telephone)

e. Ecology
   - Habitats, interdependence of organisms and their environment
   - The concept of a "balance of nature" (constantly changing, not a static condition)
   - Food chain or food web: producers, consumers, decomposers, and the limits of food chain/web models
   - Ecosystems: how they can be affected by environmental and man-made changes
   - Man-made threats to the environment: air pollution, water pollution
   - Measures to protect the environment: conservation, recycling, etc.
   - Biography: John Muir (conservationist who helped create many national parks)

f. Astronomy
   - The "Big Bang" as one theory
   - The universe: an extent almost beyond imagining
   - Galaxies: Milky Way, Andromeda
   - Our solar system: Sun, eight planets
   - Biography: Copernicus and heliocentric theory
   - Planetary motion: orbit and rotation, day/night, tilt of Earth's axis, seasons
   - Gravity

Gravitational pull of sun and moon cause ocean tides on earth
Gravitational pull of black holes prevents even light from escaping

- Asteroids, meteors, comets, Halley's Comet
- Solar and lunar eclipse, how an eclipse happens
- Stars and constellations
- Orienteering by using North Star, Big Dipper
- Exploration of space: observation through telescopes, rockets and satellites, Apollo 11 and lunar landing, space shuttle
- Biography: Mae Jemison (astronaut and medical pioneer)
- Biography: Edmond Halley (astronomer)

V. Visual Arts

Resources:

- Art Resources, Grade 3, Core Knowledge Foundation
- Text Resources, Grade 3, Core Knowledge Foundation
- *Children's Book of Art*, DK Eyewitness
- Getting to Know the World's Greatest Artists, series by Mike Venezia:
  - *Faith Ringgold*
  - *Henri Matisse*
  - *Horace Pippin*
  - *Johannes Vermeer*
  - *Mary Cassatt*
  - *Pieter Bruegel*

a. Elements of Art

- Light: Observe how artists use light and shadow
  James Chapin, *Ruby Green Singing*
  Johannes Vermeer, *Milkmaid*
- Space:
  Understand two-dimensional and three-dimensional
  Observe relationship between two-dimensional and three-dimensional shapes (e.g. square to cube)
  Observe how artists can make two-dimensional canvases appear three-dimensional by creating the illusion of depth
  Examine the foreground, middle ground, and background in paintings
  Jean Millet, *The Gleaners*

Pieter Bruegel, *Peasant Wedding*

- Design: how the elements of art work together

  Terms: Figure, ground, pattern, balance, symmetry

  Examine design in the following:

  Rosa Bonheur, *The Horse Fair*

  Mary Cassatt, *The Bath*

  Early American quilts

  Edward Hicks, *The Peaceable Kingdom*

  Henri Matisse, cut-outs: *Icarus*

  Edvard Munch, *The Scream*

  Horace Pippin, *Victorian Interior*

  Faith Ringgold, *Tar Beach*

b. American Indian Art
   - Kachina Dolls (Hopi, Zuni)
   - Navajo (Dine) blankets and rugs, sand paintings
   - Jewelry

c. Art of Ancient Roman and Byzantium
   - Elements of Roman architecture: arch, column, dome
   - Le Pont du Gard
   - The Pantheon
   - Byzantine mosaics
   - Hagia Sophia

VI. Music

Resources:

- Core Knowledge Music Collection, Grades 3-5, Core Knowledge Foundation
- Text Resources, Grade 3, Core Knowledge Foundation
- Getting to Know the World's Greatest Composers, series by Mike Venezia:
  - *Aaron Copland*
  - *Peter Ilich Tchaikovsky*
  - *John Philip Sousa*

a. Elements of Music:
   - Through participation, become familiar with basic elements of music (rhythm, melody, harmony, form, timbre, etc.).

Recognize a steady beat, accents, and the downbeat; play a steady beat.
Move responsively to music
Recognize short and long sounds
Discriminate between fast and slow; gradually slowing down and getting faster.
Discriminate between differences in pitch: high and low.
Discriminate between loud and soft; gradually increasing and decreasing volume.
Understand that melody can move up and down.
Hum the melody while listening to music.
Echo shorty rhythms and melodic patterns.
Play simply rhythms and melodies.
Sing unaccompanied, accompanied, and in unison.
Recognize harmony; sing rounds.
Recognize verse and refrain.
Continue work with timbre and phrasing.
Review names of musical notes; scale as a series of notes; singing the C major scale using "do re mi" etc.

- Understanding the following notation:
  names of lines and spaces in the treble clef
  treble clef, staff, bar line, double bar line, measure, repeat signs
  whole note, half note, quarter note, eighth note
  whole rest, half rest, quarter rest
  meter signature 4/4, 2/4, 4/3
  soft ***pp p*** loud ***f ff***

b. Listening and Understanding

- The Orchestra:
  Review families of instruments: strings, brass, woodwind, percussion
  Become familiar with brass instruments—trumpet, French horn, trombone, tuba—and listen to
  Gioacchino Rossini, *William Tell Overture*, finale (trumpet)
  Wolfgang Amadeus Mozart, selections from the *Horn Concertos* (French Horn)

Become familiar with woodwind instruments—flute and piccolo (no reeds); clarinet, oboe, bassoon (with reeds)—and listen to

Claude Debussy, Prelude to the *Afternoon of the Faun* (flute)
Opening of George Gershwin's *Rhapsody in Blue* (clarinet)

- Composers and their music
  Peter Ilich Tchaikovsky, *Suite from Swan Lake*
  John Philip Sousa, *Stars and Stripes Forever*
  Aaron Copland, *Fanfare for the Common Man*; "Hoedown" from *Rodeo*, "Simple Gifts" from *Appalachian Spring*
- Musical Connections (to be introduced in connection with topics from other disciplines): Nikolai Rimsky-Korsakov, *Scheherazade*, part one: "The Sea and Sinbad's Ship"

c. Songs

Alouette
America ("My country, 'tis of thee")
A Bicycle Built for Two (chorus only)
Down in the Valley
He's Got the Whole World in His Hands
He, Ho, Nobody Home (round)
In the Good Old Summertime (chorus only)
Li'l Liza Jane
My Bonnie Lies Over the Ocean
Polly Wolly Doodle
The Man on the Flying Trapeze (chorus only)
The Sidewalks of New York (chorus only)
Simple Gifts ("Tis a gift to be simple")
This Little Light of Mine
You're a Grand Old Flag

Third Grade Curriculum Map

	August-September	October	November	December	January	February	March	April	May
Math **(Primary Mathematics)**	Lessons 1-2 (3A)	Lesson 3 (3A)	Lesson 4 (3A)	Lesson 5 (3A)	Lesson 1 (3B)	Lessons 2-3 (3B)	Lessons 4-5 (3B)	Lessons 6-7 (3B)	Lessons 8-9 (3B)
Literature Read 1-2 poems per month	Arabian Nights The Husband Who Was to Mind the House Black Beauty	Black Beauty Greek and Roman Mythology	Norse Mythology Princess & the Goblin	Princess & the Goblin William Tell The Little Match Girl	The Hunting of the Great Bear Farmer Boy	Farmer Boy	The People Who Could Fly Three Words of Wisdom	Alice in Wonderland	Alice in Wonderland
Grammar **(Well Ordered Language)**	Parts of Speech Kinds of Sentences	Principal Elements Helping Verbs Adverbs	Adjectives Direct Objects	Pronouns as: -Subject -Interrogative -Object	Pronoun Review Subject-Verb Agreement	Prepositional Phrases Inverted Prepositional Phrases	Simple Conjunctions, Compound Subjects, and Compound Verbs	Compound Verbs Compound Direct Objects	Punctuation & Review
Phonics & Literacy **(Riggs)**	2 weeks review; assessment; 15-20 lessons	Finish Level II lessons; 20-25 words per week	20-25 words per week (from Level III list)	20-25 words per week	20-25 words per week	20-25 words per week	20-25 words per week	20-25 words per week	20-25 words per week
Composition	Introduction to the Paragraph- Informative Paragraph	Narrative Paragraph	Persuasive Paragraph	Review/ Remediation	Review/ Remediation	Informative Paragraph	Narrative Paragraph	Persuasive Paragraph	Review/ Remediation
Science	Classification of Animals	Ecology John Muir	Light & Optics	Astronomy Mae Jemison	Astronomy Copernicus	E. Halley Sound A.G. Bell	Human Body	Human Body	Human Body
History & Geography	Rivers of the World Ancient Rome	Ancient Rome	Ancient Rome Vikings	Earliest Americans	Earliest Americans Exploration	Exploration Southern Colonies	New England Colonies	Middle Atlantic Colonies	Canada
Art	Balance and Symmetry	Ancient Rome	Ancient Rome	Byzantium	American Indian Art	Light	Space	Design	Design
Music	Basic Notation 2 songs	Basic Elements 2 songs	P.I. Tchaikovsky Brass Instruments 2 songs	W. Tell Overture Horn Concertos 1 song	Woodwinds Prelude to…a Faun Rhapsody in Blue 2 songs	J.P. Souza 2 songs	A. Copland 2 songs	Scheherazade 2 songs	Review notation, elements, ranges

Fourth Grade

I. Phonics and Literacy

Resources:

For First Year Schools—

- *Writing and Spelling Road to Reading and Thinking*, Level I Teacher's Edition, Riggs Institute
- *Writing and Spelling Road to Reading and Thinking*, Level II Teacher's Edition, Riggs Institute
- *Writing and Spelling Road to Reading and Thinking*, Level III Spelling List, Riggs Institute
- Box of Phonogram cards, Riggs Institute
- "Older Student Adaptation: Instructions for 3-6th Grade Teachers," Access Literacy (pamphlet)
- *The ABC's and All Their Tricks,* Margaret Bishop
- *My English Orthography Notebook*, Access Literacy

For All Schools—

- *Writing and Spelling Road to Reading and Thinking*, Level III Spelling List, Riggs Institute
- English from the Roots Up, Volume I, Joegil Lundquist
- *Standard Test Lessons in Reading*: Books B, C, and D, McCall-Crabbs
- *Standard Test Lessons in Reading* (Teacher's Manual), McCall-Crabbs
- *Standard Test Lessons in Reading Answer Sheets*, McCall-Crabbs

a. New Schools: In the first year of a school, 4th grade teachers should spend the first month covering the material in the "Older Student Adaptation" pamphlet, which draws from various lessons in the Level I manual. This will include teaching the phonograms, remediating student handwriting or teaching cursive, and working on more basic spelling lists. After this month, teachers should test students according to the instructions on page 20 of the "Older Student Adaptation" pamphlet. Depending on the class average, the teacher will either review spelling lists as described on page 20, or move forward from at the pace of one spelling-vocabulary list every two weeks, through the entire year or until the students have tested beyond the Level III vocabulary. Students should make daily entries in their own copy of *My English Orthography Notebook* such that the notebook is filled, or nearly filled, by the end of the school year.
b. Second-Year Schools: In the school's second year, most fourth-grade students will be well acquainted with the Level I and Level II programs from the previous grade, but they will likely not be through the Level III spelling and vocabulary

words. To begin the new school year, teachers should assess the class ability level using the assessments and related instructions on pages 29-42 of the Level I manual. Teachers should grade each test by counting the number of correctly spelled words until a student misses five words in a row. The class average should then be compared to the equivalency table on page 33, and this score will indicate the spelling list with which the class should begin. From this starting point, teachers should proceed at a pace of approximately 4-6 words per day, through the Level III vocabulary list. Most classes should finish the Level III manual before the end of the year. When the class finishes the Level III manual—or if the class orthography assessment scores are above the Level III manual—then teachers should choose spelling and vocabulary words from the curriculum alongside teaching Latin and Greek roots from *English from the Roots Up, Vol. 1*.

c. Established Schools: In established schools, students should have already finished all spelling and vocabulary words in the Level I, II, and III manuals. If necessary, teachers can begin the year by assessing students (as described above and on pages 29-42 of the Level I manual) and doing necessary review of spelling lists from the Level III manual. When finished with the Level III manual, teachers should choose approximately ten words per week from other content areas (science, history, literature, Latin/Greek roots) to explicitly teach as spelling and vocabulary words. From the beginning of the year forward, students should learn 3-4 Latin or Greek roots each week so as to cover all one hundred roots in the first volume of *English from the Roots Up*. English derivatives should be included in weekly spelling tests.

d. All Schools: Teachers should give students five McCall-Crabbs reading comprehension passages as 3-minute timed tests to assess the students' reading comprehension levels. Teachers should then use McCall-Crabbs reading comprehension books B-F for instruction and practice in reading comprehension 2 or 3 times per week for 15-20 minutes, with books distributed based upon each student's individual ability.

II. Grammar & Composition

Resources:

For First-Year Schools:

- *Well-Ordered Language*, Level 1A, Peters and Coupland
- *Well-Ordered Language*, Level 1B, Peters and Coupland

For Other Schools:

- *Well-Ordered Language*, Level 2A, Peters and Coupland
- *Well-Ordered Language*, Level 2B, Peters and Coupland

Note: For first-year schools, see the scope and sequence for grammar in 3rd grade.

a. Grammar

Level 2A- Review with Introduction of Diagramming

- Four Kinds of Sentences & Principal Elements
- Adverbs
- Adjectives
- Predicate Verbs
- Predicate Nominatives
- Predicate Adjective
- Possessive Nouns

Level 2B

- Prepositional Phrases – adverbial & adjectival
- Compound elements
- Subject Pronouns
- Object Pronouns
- Possessive pronouns
- Interrogative pronouns
- Compound Sentences
- Relative Clauses

b. Composition

- Informative Paragraph: Teacher provides introductory paragraph. Student writes 3 topic sentences for one of those they also write the body paragraph.

- Narrative Paragraph: Teacher provides introductory paragraph. Student writes 3 topic sentences for one of those they also write the body paragraph.
- Persuasive Paragraph: Teacher provides introductory paragraph. Student writes 3 topic sentences for one of those they also write the body paragraph.
- Informative Essay: Teacher provides introductory paragraph. Student writes 3 body paragraphs.
- Narrative Essay: Teacher provides introductory paragraph. Student writes 3 body paragraphs.
- Persuasive Essay: Teacher provides introductory paragraph. Student writes 3 body paragraphs.

III. Literature

Teacher Resources:

- *What Your Fourth Grader Needs to Know*, Core Knowledge Foundation
- *Listen, My Children*, 4th Grade, Core Knowledge Foundation

Student Resources

- *Johnny Tremain*, Esther Forbes
- Core Classics, Core Knowledge Foundation:
  - *Gulliver's Travels*
  - *King Arthur and the Knights of the Roundtable*
  - *Legend of Sleepy Hollow*
  - *Pollyanna*
  - *Robin Hood*
  - *Robinson Crusoe*
  - *Treasure Island*

a. Poetry

Listen, My Children: Poems for Fifth Graders

- Poems:

  Afternoon on a Hill, Edna St. Vincent Millay

  Clarence, Shel Silverstein

  Clouds, Christina Rossetti

  Concord Hymn, Ralph Waldo Emerson

  Dreams, Langston Hughes

the drum, Nikki Giovanni
Fog, Carl Sandburg
George Washington, Rosemary and Stephen Vincent Benet
Humanity, Elma Stuckey
Life Doesn't Frighten Me, Maya Angelou
Monday's Child Is Fair of Face, traditional
Paul Revere's Ride, Henry Wadsworth Longfellow
The Pobble Who Has No Toes, Edward Lear
The Rhinoceros, Ogden Nash
Things, Eloise Greenfield
A Tragic Story, William Makepeace Thackeray

- Terms: stanza, line

b. Fiction

- Novels

  Johnny Tremain, Esther Forbes

- Stories

  Core Classics

  Gulliver's Travels, Jonathan Swift: (excerpt) Gulliver in Lilliput and Brobdingnag
  Pollyanna, Eleanor Porter
  Robinson Crusoe, Daniel Defoe
  Treasure Island, Robert Louis Stevenson
  Robin Hood

  What Your Fourth Grader Needs to Know

  The Fire on the Mountain
  The Magic Brocade
  St. George and the Dragon

- Myths and Mythical Characters

  Core Classics

  Legends of King Arthur and the Knights of the Round Table: How Arthur Became King, The Sword in the Stone, The Sword Excalibur, Guinevere, Merlin and the Lady of the Lake, Sir Lancelot

- Literary Terms: novel, plot, setting

c. Sayings and Phrases:

What Your Fourth Grader Needs to Know

An ounce of prevention is worth a pound of cure.
As the crow flies
Beauty is only skin deep.
The bigger they are, the harder they fall.
Birds of a feather flock together. Blow hot and cold
Break the ice
Bull in a china shop
Bury the hatchet
Can't hold a candle to
Don't count your chickens before they hatch.
Don't put all your eggs in one basket.
Etc.
Go to pot
Half a loaf is better than none.
Haste makes waste.
Laugh and the world laughs with you.
Lightning never strikes twice in the same place.
Live and let live.
Make ends meet.
Make hay while the sun shines.
Money burning a hole in your pocket
Once in a blue moon
One picture is worth a thousand words.
On the warpath
RSVP
Run-of-the-mill
Seeing is believing.
Shipshape
Through thick and thin
Timbuktu
Two wrongs don't make a right.
When it rains, it pours.

You can lead a horse to water, but you can't make it drink.

IV. History and Geography

Resources:

- *The Thirteen Colonies* (Reader), Core Knowledge Foundation
- *Using Maps and Exploring World Mountains* (Reader), Core Knowledge Foundation
- *Medieval Europe* (Reader), Core Knowledge Foundation
- *Early African Kingdoms and Islamic Empires* (Reader), Core Knowledge Foundation
- *Dynasties of China* (Reader), Core Knowledge Foundation
- *The American Revolution* (Reader), Core Knowledge Foundation
- *The United States Constitution* (Reader), Core Knowledge Foundation
- *Early Presidents* (Reader), Core Knowledge Foundation
- *American Reformers* (Reader), Core Knowledge Foundation
- *The Story of the World, Volume 2: The Middle Ages*, Susan Wise Bauer
- *A History of the United States and Its People*, Edward Eggleston
- *The Role of Religion in the Early Islamic World*, Jim Whiting
- *Crusades: the struggle for the Holy lands* (DK Discoveries), Rice and Gravett
- Other DK Eyewitness Books (useful as a visual aid, especially because neither Bauer nor Eggleston use many pictures or maps)

Fall Semester –

a. Geography
    - ♦ Geographic Tools: Map keys, latitude and longitude, coordinates, degrees, relief maps.
    - ♦ Mountains: Andes, Rockies, Appalachians, Himalayas, Urals, Atlas, Alps, and highest mountains on each continent.

b. Europe in the Middle Ages
    - ♦ Geography of Europe
    - ♦ Germanic Tribes, 200 A.D. to the Fall of Rome
    - ♦ Development of Christian Church: hierarchy, major counsels, conversion of Germanic tribes, rise of monasteries, Charlemagne, and schism of East and West.
    - ♦ Feudalism
    - ♦ Norman Conquest
    - ♦ Growth of Towns: commerce, guilds, weakening of feudalism.
    - ♦ England in the Middle Ages: Henry II, Thomas Becket, Magna Carta, King John, Parliament, Hundred Years' War, Joan of Arc, Black Plague.

c. Spread of Islam, confrontations between Islam and Christendom

- Islam, terms and founding: Muhammad, Allah, Qur'an, jihad, Mecca, Medina, mosques, and Five Pillars.
- Early split between Sunni and Shii Muslims.
- Spread of Islam: North Africa, eastern Roman empire, Spain, Mediterranean, and Istanbul.
- Contributions of Islamic Civilization: Avicenna, Arabic numerals, scientific development, preservation of Greek and Roman texts, art, Cordoba.
- Interaction with Christendom: Jerusalem, Crusades, Saladin, Richard the Lion-Hearted, Moors, and trade and cultural exchange between Islamic and Christian civilization.

d. Early and Medieval African Kingdoms
   - Geography of Africa
   - Early African Kingdoms: Kush, Axum
   - Medieval Kingdoms of the Sudan: Ghana, Mali, Songhai, trans-Saharan trade.

e. China: Dynasties and Conquerors
   - Qin Shihuangdi, first emperor
   - Han Dynasty: Silk Road, invention of paper
   - Tang and Song Dynasties: trade, compass, gunpowder, paper money
   - Mongol Invasions
   - Ming Dynasty

Spring Semester –

f. American Revolution
   - French and Indian War: Alliances with Native Americans, Battle of Quebec
   - Causes and Provocations: Taxation, Boston Massacre, Crispus Attucks, Boston Tea Party, Intolerable Acts, First Continental Congress, Thomas Paine, Patrick Henry (Give Me Liberty or Give Me Death).
   - The Revolution: Paul Revere, Lexington and Concord, Bunker Hill, Second Continental Congress, General George Washington, Declaration of Independence, Loyalists, Saratoga, alliance with France, Valley Forge, Benedict Arnold, Cornwallis, Yorktown.

g. Making a Constitutional Government:
   - Ideas behind the Declaration of Independence
   - From Declaration to Constitution: Republican government, legislative supremacy, Articles of Confederation.
   - Constitutional Convention: Founding Fathers, arguments between large and small states, issue of slavery and 3/5s compromise.
   - US Constitution: Preamble, separation of powers, incentives and limitations of the three branches, institutional checks, limits on federal power, Bill of Rights.
   - Institutions of Republican Government: current president, current vice-president, current state governor, state constitutions, state institutions, local government and officials, taxation, citizen participation.

h. Early Presidents and Politics:
   - George Washington: cabinet, Whiskey Rebellion, Farewell Address.
   - John Adams
   - Growth of Political Parties: Elections of 1796 and 1800, competing visions between Jefferson and Hamilton.
   - Jeffersonian America: Louisiana Purchase, Democratic Party, James Madison, War of 1812, James Monroe, Monroe Doctrine, John Quincy Adams
   - Andrew Jackson: Battle of New Orleans, national bank, populist appeals, Indian removal policies.

V. Mathematics

Resources:

- Primary Mathematics Textbooks 4A & 4B, US Edition, Singapore Mathematics
- Primary Mathematics Workbooks 4A & 4B, US Edition, Singapore Mathematics
- Primary Math Teacher's Guides 4A & 4B, US Edition, Singapore Mathematics

Fall Semester –

a. Whole Numbers
   - Numbers to 100,000
   - Rounding off numbers
   - Factors

- Multiples

b. Multiplication and Division of Whole Numbers
   - Multiplication by a 1-digit number, division by a 1-digit number and by 10.
   - Multiplication by a 2-digit number

c. Fractions
   - Adding fractions
   - Subtracting fractions
   - Mixed numbers
   - Improper fractions
   - Fraction of a set

d. Tables and Graphs
   - Presenting data

e. Angles
   - Measuring angles

f. Perpendicular and Parallel Lines
   - Perpendicular lines
   - Parallel lines

g. Area and Perimeter
   - Rectangles and squares
   - Composite figures

Spring Semester –

h. Decimals
   - Tenths
   - Hundredths
   - Thousandths
   - Rounding off

i. The Four Operations of Decimals
   - Addition and subtraction
   - Multiplication
   - Division

j. Measures

- ♦ Multiplication
- ♦ Division

k. Symmetry

- ♦ Symmetric figures

l. Solid Figures

- ♦ Identifying solid figures

m. Volume

- ♦ Cubic units
- ♦ Volume of a cuboid

VI. Science

Teacher Resources:

- *Benjamin Banneker: Pioneering Scientist*, Ginger Wadsworth
- *Charles Drew: Doctor Who Got the World Pumped Up to Donate Blood*, Mike Venezia
- *Elizabeth Blackwell: First Woman Physician,* Tristan Boyer Binns
- *Michael Faraday, Father of Electronics,* Charles Ludwig
- Science Explorer series (Teacher's Editions): *Chemical Building Blocks, Chemical Interactions, Earth's Changing Surface, Electricity and Magnetism, Human Biology and Health, Inside Earth, Integrated Lab Manual, The Nature of Science and Technology, Weather and Climate*
- *What are You Figuring Now?: A Story about Benjamin Banneker,* Jeri Ferris

Student Resources:

- DeltaScience ContentReaders series (purple editions): *Air and Water, Electricity and Magnetism, Inside Earth, Human Body Systems, Properties of Matter, Soils, Weather and Climate, Weathering and Erosion*
- *ScienceSaurus: A Student Handbook* (green softcover), Houghton Mifflin Harcourt

a. The Human Body

- ♦ The circulatory system

  Pioneering work of William Harvey

  Heart: four chambers (atrium/atria or atriums [plural] and ventricle/ventricles), aorta

  Blood

  Blood vessels: arteries, veins, capillaries Blood pressure, pulse

  Coagulation (clotting)

  Filtering function of liver and spleen

Fatty deposits can clog blood vessels and cause a heart attack. • Blood types (four basic types: A, B, AB, O) and transfusions

- The respiratory system

  Process of taking in oxygen and getting rid of carbon dioxide

  Nose, throat, voice box, trachea (windpipe)

  Lungs, bronchi, bronchial tubes, diaphragm, ribs, alveoli (air sacs)

  Smoking: damage to lung tissue, lung cancer
- Biography: Elizabeth Blackwell (first female to graduate from medical school in the United States)
- Biography: Charles Drew (pioneered work in blood research, blood transfusions, and the development of blood banks)

b. Chemistry: Basic Terms and Concepts

- Atoms

  All matter is made up of particles too small for the eye to see, called atoms.

  Scientists have developed models of atoms; while these models have changed over time as scientists make new discoveries, the models help us imagine what we cannot see.

  Atoms are made up of even tinier particles: protons, neutrons, electrons.

  The concept of electrical charge
- Properties of Matter

  Mass: the amount of matter in an object, similar to weight

  Volume: the amount of space a thing fills

  Density: how much matter is packed into the space an object fills

  Vacuum: the absence of matter
- Elements

  Elements are the basic kinds of matter, of which there are a little more than one hundred. There are many different kinds of atoms, but an element has only one kind of atom. Familiar elements, such as gold, copper, aluminum, oxygen, iron

  Most things are made up of a combination of elements.
- Solutions

  A solution is formed when a substance (the solute) is dissolved in another substance (the solvent), such as when sugar or salt is dissolved in water;

the dissolved substance is present in the solution even though you cannot see it.

Concentration and saturation (as demonstrated through simple experiments with crystallization)

c. Electricity
    - Electricity as the charge of electrons
    - Static electricity
    - Electric current
    - Electric circuits, and experiments with simple circuits (battery, wire, light bulb, filament, switch, fuse)
    - Conductors and insulators
    - Electromagnets: how they work and common uses
    - Using electricity safely
    - Biography: Michael Faraday (chemist and physicist whose work led to the development of the electric motor and electric generator)

d. Geology: The Earth and Its Changes
    - The Earth's Layers

      Crust, mantle, core (outer core and inner core)

      Movement of crustal plates

      Earthquakes

      Volcanoes

      Hot springs and geysers

      Theories of how the continents and oceans were formed: Pangaea and continental drift
    - How mountains are formed

      Volcanic mountains, folded mountains, fault-block mountains, dome-shaped mountains

      Undersea mountain peaks and trenches (Mariana Trench)
    - Rocks

      Formation and characteristics of metamorphic, igneous, and sedimentary rock
    - Weathering and erosion

      Physical and chemical weathering

      Weathering and erosion by water, wind, and glaciers

The formation of soil: topsoil, subsoil, bedrock

- Biography: James Hutton (geologist)

e. Meteorology

- The water cycle (review from grade 2): evaporation, condensation, precipitation
- Clouds: cirrus, stratus, cumulus (review from grade 2)
- The atmosphere
- Air movement: wind direction and speed, prevailing winds, air pressure, low and high pressure, air masses
- Cold and warm fronts: thunderheads, lightning and electric charge, thunder, tornadoes, hurricanes
- Forecasting the weather: barometers (relation between changes in atmospheric pressure and weather), weather maps, weather satellites
- Weather and climate: "weather" refers to daily changes in temperature, rainfall, sunshine, etc., while "climate" refers to weather trends that are longer than the cycle of the seasons.
- Biography: Benjamin Banneker (published almanac; reproduced plans to build Washington, D.C. entirely from memory)

VII. Visual Arts

Resources:

- Art Resources, Grade 4, Core Knowledge Foundation
- Text Resources, Grade 4, Core Knowledge Foundation
- *Children's Book of Art*, DK Eyewitness

a. Art of the Middle Ages in Europe:

- Madonnas, illuminated manuscripts, tapestries
- Gothic architecture: spires, pointed arches, flying buttresses, rose windows, gargoyles and statues; famous cathedrals, including Notre Dame

b. Islamic Art and Architecture:

- Illuminated manuscripts; including illuminated Qu'ran
- Islamic architecture: features like domes and minarets; famous buildings including Dome of the Rock, Alhambra Palace, Taj Mahal

c. Art of Africa
   - ♦ Spiritual purposes and significance: e.g., masks used in ceremonies for planting, harvesting, and hunting
   - ♦ Art from specific peoples and regions: antelope headdresses of Mali, sculptures by Yoruba artists in the city of Ife, ivory carvings and bronze sculptures of Benin

d. Art of China: silk scrolls, calligraphy, porcelain

e. Art of the early United States:
   - ♦ Famous portraits and paintings, including *Paul Revere* by John Singleton Copley and *George Washington* and *Washington Crossing the Delaware* by Gilbert Stuart
   - ♦ Architecture: Monticello, Georgian architecture (especially neo-classical manifestations like Greek Revival).

VIII. Music

Resources:

- Core Knowledge Music Collection, Grades 3-5, Core Knowledge Foundation
- Text Resources, Grade 4, Core Knowledge Foundation

a. Elements of Music:
   - ♦ Through participation, become familiar with basic elements of music (rhythm, melody, harmony, form, timbre, etc.).
     Recognize a steady beat, accents, and the downbeat; play a steady beat and a simple rhythm pattern.
     Discriminate between fast and slow; gradually slowing down and getting faster. Discriminate between differences in pitch: high and low.
     Discriminate between loud and soft; gradually increasing and decreasing volume. Understand legato (smoothly flowing progression of notes) and staccato (crisp, distinct notes).
     Sing unaccompanied, accompanied, and in unison.
     Recognize harmony; sing simple rounds and canons.
     Recognize verse and refrain; also, introduction and coda.
     Continue work with timbre and phrasing.

Recognize theme and variations, and listen to Mozart, Variations on "*Ah! vous dirai-je Maman*" (familiarly known as "Twinkle Twinkle Little Star"). Sing or play simple melodies.

- Understanding the following notation:
  names of lines and spaces in the treble clef; middle C
  treble clef, staff, bar line, double bar line, measure, repeat signs
  whole note, half note, quarter note, eighth note
  whole rest, half rest, quarter rest
  tied notes and dotted notes
  sharps flats
  Da capo [D.C.] *al fine*
  meter signature 4/4, 2/4, 4/3
  soft ***pp p mp*** loud ***mf f ff***

b. Listening and Understanding

- The Orchestra: Review the orchestra, including families of instruments and specific instruments, by listening to Benjamin Britten, The Young Person's Guide to the Orchestra.
- Vocal Ranges
  Recognize vocal ranges of the female voice
  Recognize vocal ranges of the male voice
- Composers and their music:
  George Frederick Handel, "Hallelujah Chorus" from The Messiah
  Franz Joseph Haydn, Symphony No. 94 ("Surprise")
  Wolfgang Amadeus Mozart, The Magic Flute, selections, including:
  Overture; Introduction, "Zu Hilfe! Zu Hilfe!" (Tamino, Three Ladies); Aria, "Der Vogelfanger bin ich ja" (Papageno); Recitative and Aria, "O zittre nicht, mein lieber Sohn!" (Queen of the Night); Aria, "Ein Madchen oder Weibchen" (Papageno); Duet, "Pa-pa-gena! Pa-pa-geno!" (Papageno and Papagena); Finale, Recitative and Chorus, "Die Strahlen der Sonne" (Sarastro and Chorus)
- Musical Connections:
  Gregorian Chant

c. Songs

Auld Lang Syne

Blow the Man Down
Cockles and Mussels
Comin' Through the Rye
I Love the Mountains (round"
Loch Lomond
My Grandfather's Clock
Taps
The Yellow Rose of Texas
Waltzing Matilda

Songs of the U.S. Armed Forces:

- Air Force Song
- Navy Song (Anchors Aweigh)
- The Army Goes [The Caissons Go] Rolling Along
- The Marine's Hymn

Fourth Grade Curriculum

	August-September	October	November	December	January	February	March	April	May
Math (Primary Mathematics)	Lessons 1-2 (4A)	Lesson 3 (4A)	Lessons 4-5 (4A)	Lessons 6-7 (4A)	Lesson 1 (4B)	Lesson 2 (4B)	Lessons 2-3 (4B)	Lessons 4-5 (4B)	Lesson 6 (4B)
Literature	Pollyanna	Robin Hood	King Arthur Saint George & the Dragon	The Magic Brocade Gulliver's Travels	Gulliver's Travels Fire on the Mountain	Rip Van Winkle Sleepy Hollow Robinson Crusoe	Robinson Crusoe	Johnny Tremain	Treasure Island
Orthography (Riggs)	Intro of Roots 3 roots & 10 spelling/vocab. words per week	3 roots & 10 spelling/vocab. words per week	3 roots & 10 spelling/vocab. words per week	3 roots & 10 spelling/vocab. words per week	3 roots & 10 spelling/vocab. words per week	3 roots & 10 spelling/vocab. words per week	3 roots & 10 spelling/vocab. words per week	3 roots & 10 spelling/vocab. words per week	3 roots & 10 spelling/vocab. words per week
Grammar (Well Ordered Language)	Principle Elements Diagramming Adjectives	Adjectives Adverbs	Direct Objects Predicate Nominative	Predicate Adjective Possessive Nouns	Prepositions Prepositional Phrases	Subject Pronouns Object Pronouns	Possessive Pronouns Interrogative Pronouns	Compound and Complex Sentences Relative Clauses	Comma Quotation Mark Apostrophe
Composition	Informative Body Paragraph & 2 topic sentences	Narrative Body Paragraph & 2 topic sentences	Persuasive Body Paragraph & 2 topic sentences	Review/ Remediation	Review/ Remediation	3 Informative Body Paragraphs	3 Narrative Body Paragraphs	3 Persuasive Body Paragraphs	Review/ Remediation
Science	Circulatory & Respiratory Systems Charles Drew Elizabeth Blackwell	Geology James Hutton	Geology	Geology	Meteorology Benjamin Banneker	Meteorology	Chemistry	Chemistry Electricity Michael Faraday	Electricity
History & Geography	Maps Mountains Medieval Europe	Medieval Europe Islam	Crusades Medieval African Kingdoms	Ancient China	American Revolution	Making the Constitution	The Federalist Washington Adams Jefferson	Jeffersonian America	Andrew Jackson
Art	Medieval Europe	Islamic Art and Architecture	Africa	Ancient China	Late 18th-century US	Late 18th-century US	Monticello	Georgian Architecture	
Music	Basic Notation 2 songs	Basic Elements 2 songs	F.J. Hayden 2 songs	Vocal Ranges G.F. Handel 1 song	Orchestra 2 songs	W.A. Mozart 2 songs	W.A. Mozart 2 songs	Gregorian Chant 1 song	Review notation, elements, ranges

Fifth Grade

I. Phonics and Literacy

Resources:

For First Year Schools—

- *Writing and Spelling Road to Reading and Thinking*, Level I Teacher's Edition, Riggs Institute
- *Writing and Spelling Road to Reading and Thinking*, Level II Teacher's Edition, Riggs Institute
- *Writing and Spelling Road to Reading and Thinking*, Level III Spelling List, Riggs Institute
- *The ABC's and All Their Tricks,* Margaret Bishop
- Box of Phonogram cards, Riggs Institute
- "Older Student Adaptation: Instructions for 3-6th Grade Teachers," Access Literacy (pamphlet)
- *My English Orthography Notebook*, Access Literacy

For All Schools—

- *Writing and Spelling Road to Reading and Thinking*, Level III Spelling List, Riggs Institute
- *English from the Roots Up*, Volume I, Joegil Lundquist
- *English from the Roots Up*, Volume II, Joegil Lundquist
- *Standard Test Lessons in Reading*: Books C-F, McCall-Crabbs
- *Standard Test Lessons in Reading* (Teacher's Manual), McCall-Crabbs
- *Standard Test Lessons in Reading Answer Sheets*, McCall-Crabbs

a. New Schools: In the first year of a school, 5th grade teachers should spend the first month covering the material in the "Older Student Adaptation" pamphlet, which draws from various lessons in the Level I manual. This will include teaching the phonograms, remediating student handwriting or teaching cursive, and working on more basic spelling lists. After this month, teachers should test students according to the instructions on page 20 of the "Older Student Adaptation" pamphlet. Depending on the class average, the teacher will either review spelling lists as described on page 20, or move forward from at the pace of one spelling-vocabulary list every two weeks, through the entire year or until the students have tested beyond the Level III vocabulary. Students should make daily entries in their own copy of *My English Orthography Notebook* such that the notebook is filled, or nearly filled, by the end of the school year.
b. Second-Year Schools: In the school's second year, most fifth-grade students will be well acquainted with the Level I, II, and III programs from the previous grade,

but they may not be through the Level III spelling and vocabulary words. To begin the new school year, teachers should assess the class ability level using the assessments and related instructions on pages 29-42 of the Level I manual. Teachers should grade each test by counting the number of correctly spelled words until a student misses five words in a row. The class average should then be compared to the equivalency table on page 33, and this score will indicate the spelling list with which the class should begin. From this starting point, teachers should proceed at a pace of one spelling-vocabulary list every two weeks through the entire year. When the class finishes the Level III manual—or if the class orthography assessment scores are above the Level III manual—then teachers should choose spelling and vocabulary words from the curriculum alongside teaching Latin and Greek roots from *English from the Roots Up*. Teachers should plan to explicitly teach approximately 300 words throughout the school year.

c. Established Schools: In established schools, students should have already finished all spelling and vocabulary words in the Level I, II, and III manuals. If necessary, teachers can begin the year by assessing students (as described above and on pages 29-42 of the Level I manual) and doing necessary review of spelling lists from the Level III manual. When finished with review of the Level III manual, teachers should choose approximately ten vocabulary words per week from other content areas (science, history, literature, Latin/Greek roots) to explicitly instruct for spelling and usage. Students should be given regular practice opportunities for spelling and usage of the new vocabulary. Then vocabulary can be tested weekly or bi-weekly to assess mastery. From the beginning of the year forward, students should learn 3-4 Latin or Greek roots each week so as to cover all one hundred roots in the second volume of *English from the Roots Up*. English derivatives should be included in practice opportunities and weekly spelling tests.

d. All Schools: Teachers should give students five McCall-Crabbs reading comprehension passages as 3-minute timed tests to assess the students' reading comprehension levels. Teachers should then use McCall-Crabbs reading comprehension books C-F for instruction and practice in reading comprehension 2 or 3 times per week for 15-20 minutes, with books distributed based upon each student's individual ability.

II. Grammar & Composition

Resources:

For First-Year Schools:

- *Well-Ordered Language*, Level 2A, Peters and Coupland
- *Well-Ordered Language*, Level 2B, Peters and Coupland

For Other Schools:

- *Well-Ordered Language*, Level 3A, Peters and Coupland
- *Well-Ordered Language*, Level 3B, Peters and Coupland

a. Grammar

Level 3A

- Four Kinds of Sentences & Principal Elements
- Adverbs & Adjectives
- Direct Objects
- Predicate Verb, Predicate Nominative, Predicate Adjective
- Sensory Linking verbs
- Prepositional Phrases
- Personal pronouns
- Compound elements
- Indirect Objects
- Interrogative pronouns
- Relative Clauses

Level 3B

- Adverbial elements & Interrogative Adverbs
- Adverbial clauses
- Reflexive pronouns
- Verbals - Participles
- Verbals - Gerunds
- Verbals - Infinitives
- Compound-complex sentences

b. Composition

- Informative Essay: Teacher provides introductory paragraph, which the student revises. Student writes 3 body paragraphs.
- Narrative Essay: Teacher provides introductory paragraph, which the student revises. Student writes 3 body paragraphs.
- Persuasive Essay: Teacher provides introductory paragraph, which the student revises. Student writes 3 body paragraphs.

III. Literature

Teacher Resources:

- *What Your Fifth Grader Needs to Know,* Core Knowledge Foundation
- *The Adventures of Tom Sawyer*, Norton Critical Edition
- Text Resources, Grade 5, Core Knowledge Foundation
- Comedy of Errors DVD, Globe Theatre Production

Student Resources:

- *Listen, My Children*, 5th Grade, Core Knowledge Foundation
- *The Adventures of Tom Sawyer,* Mark Twain
- *Comedy of Errors*, William Shakespeare
- *The Secret Garden,* Frances Hodgson Burnett
- *Wind in the Willows,* Kenneth Grahame
- 5th Grade Core Classics, Core Knowledge Foundation:
  - *Little Women*
  - *Sherlock Holmes*
  - *Don Quixote*
  - *Narrative of the Life of Frederick Douglass*

a. Poetry

Listen, My Children: Poems for Fifth Graders

- Poems:

  The Arrow and the Song, Henry Wadsworth Longfellow

  Barbara Frietchie, John Greenleaf Whittier

  Battle Hymn of the Republic, Julia Ward Howe

  A bird came down the walk, Emily DickinsonIliad

  Casey at the Bat, Ernest Lawrence Thayer

  The Eagle, Alfred Lord Tennyson

  I Hear America Singing, Walt Whitman

I like to see it lap the miles, Emily Dickinson
I, too, sing America, Langston Hughes
Jabberwocky, Lewis Carroll
Narcissa, Gwendolyn Brooks
O Captain! My Captain! Walt Whitman
A Poison Tree, William Blake
The Road Not Taken, Robert Frost
The Snowstorm, Ralph Waldo Emerson
Some Opposites, Richard Wilbur
The Tiger, William Blake
A Wise Old Owl, Edward Hersey Richards

- Terms: onomatopoeia, alliteration

b. Fiction

- Novels

  The Adventures of Tom Sawyer, Mark Twain
  The Secret Garden, Frances Hodgson Burnett
  Wind in the Willows, Kenneth Grahame

- Stories

  Core Classics

  Don Quixote, Miguel de Cervantes
  Little Women (part first), Louisa May Alcott
  Narrative of the Life of Frederick Douglass, Frederick Douglass
  Tales of Sherlock Holmes, including "The Red-Headed League," Arthur Conan Doyle

- Drama

  Comedy of Errors, William Shakespeare
  Terms: tragedy, comedy, act, scene, Globe Theater

- Myths and Legends

  What Your Fifth Grader Needs to Know

  The Samurai's Daughter
  The Sun Dance,
  Coyote Goes to the Land of the Dead

- Literary Terms:

  pen name (pseudonym)

literal and figurative language: imagery, metaphor, simile, symbol, personification

c. Sayings and Phrases:

What Your Fifth Grader Needs to Know

Birthday suit
Bite the hand that feeds you.
Chip on your shoulder
Count your blessings.
Eat Crow
Eleventh hour
Eureka!
Every cloud has a silver lining.
Few and far between
Forty winks
The grass is always greener on the other side
To kill two birds with one stone
Lock, stock, and barrel
Make a mountain out of a molehill
A miss is as good as a mile.
It's never too late to mend.
Out of the frying pan and into the fire.
A penny saved is a penny earned.
Read between the lines.
Sit on the fence
Steal his/her thunder
Take the bull by the horns.
Till the cows come home
Time heals all wounds.
Tom, Dick, and Harry
Vice versa
A watched pot never boils.
Well begun is half done.
What will be will be.

IV. History and Geography

Resources:

- *World Lakes* (Reader), Core Knowledge Foundation
- *Maya, Aztec, and Inca Civilizations* (Reader), Core Knowledge Foundation
- *The Age of Exploration* (Reader), Core Knowledge Foundation
- *The Renaissance and Reformation* (Reader), Core Knowledge Foundation
- *England in the Golden Age* (Reader), Core Knowledge Foundation
- *Early Russia* (Reader), Core Knowledge Foundation
- *Feudal Japan* (Reader), Core Knowledge Foundation
- *The Geography of the United States* (Reader), Core Knowledge Foundation
- *Westward Expansion Before the Civil War* (Reader), Core Knowledge Foundation
- *The Civil War* (Reader), Core Knowledge Foundation
- *Native Americans and Westward Expansion: Cultures and Conflicts* (Reader), Core Knowledge Foundation
- *The Story of the World, Volume 2: The Middle Ages*, Susan Wise Bauer
- *The Story of the World, Volume 3: Early Modern Times*, Susan Wise Bauer
- *A History of the United States and Its People*, Edward Eggleston
- DK Eyewitness Books (useful as a visual aid, especially because neither Bauer nor Eggleston use many pictures or maps)
- *Narrative of the Life of Frederick Douglass*, Core Classics, Core Knowledge Foundation

Fall Semester –

a. Geography
    - ♦ Geographic Tools: Map keys, latitude and longitude, coordinates, degrees, relief maps
    - ♦ The Globe: Tropic of Cancer, Tropic of Capricorn, climate zones, time zones, Arctic Circle, Antarctic Circle, depiction of the globe (Mercator projection, conic and plane projections)
    - ♦ Great Lakes: Caspian Sea, Aral Sea, Victoria, Tanganyika, Chad, Superior, Huron, Michigan, Maracaibo, Titicaca

b. Early American Civilizations
    - ♦ Geography of Central and South America
    - ♦ The Mayas: pyramids, temples, hieroglyphic writing, astronomy, mathematics, 365-day calendar
    - ♦ The Aztecs: warrior culture, Tenochtitlan, aqueducts, temples, Moctezuma (Montezuma), ruler-priests, human sacrifice
    - ♦ The Inca: Machu Picchu, Cuzco, mountain road network
    - ♦ Spanish Conquerors: Cortés, Pizzaro, advantages of Spanish weapons, devastation of European diseases

c. European Exploration, Trade, and the Clash of Cultures

- Background:

  Motivations:

  Muslims controlled overland trade routes

  Profit through trade

  Spread of Christianity

  Geography:

  The Moluccas, or "Spice Islands"

  Indochina, Malay Peninsula, Philippines

  Define: archipelago

  "Ring of Fire": earthquakes and volcanic activity

- Portugal:

  Prince Henry the Navigator, exploration of the West African coast

  Bartolomeu Dias rounds the Cape of Good Hope

  Vasco da Gama: spice trade with India, exploration of East Africa

  Portuguese conquer East African Swahili city-states

  Cabral claims Brazil

- Spain:

  Two worlds meet: Christopher Columbus and the Tainos

  Bartolomé de las Casas speaks out against enslavement and mistreatment of native peoples

  Treaty of Tordesillas between Portugal and Spain

  Balboa reaches the Pacific

  Magellan crosses the Pacific, one of his ships returns to Spain, making the first round-the-world voyage

- England and France:

  Search for Northwest Passage

  Colonies in North America and West Indies

  Trading posts in India

- Holland:

  The Dutch take over Portuguese trade routes and colonies in Africa and the East Indies

  The Dutch in South Africa, Cape Town

  The Dutch in North America: New Netherland, later lost to England

- Trade and Slavery:

  The sugar trade:

  African slaves on Portuguese sugar plantations on islands off West African coast, such as Sao Tome.

  Sugar plantations in Caribbean

  Transatlantic slave trade: the "triangular trade" from Europe to Africa to colonies in the Caribbean and Americas; the "Slave Coast" in West Africa, The Middle Passage

d. The Renaissance
   - Islamic scholars translate Greek works and so help preserve classical civilization
   - A rebirth of ideas from ancient Greece and Rome
   - New trade and new wealth
   - Italian city states: Venice, Florence, Rome
   - Patrons of the arts and learning: the Medici Family of Florence, the Popes in Rome
   - Leonardo da Vinci, Michelangelo
   - Renaissance ideals and values as embodied in Castiglione's *The Courtier* and Machiavelli's *The Prince*
   - Copernicus and Galileo: Ptolemaic (earth-centered) vs. sun-centered models of the universe.

e. The Reformation
   - Gutenberg's printing press: the Bible made widely available
   - The Protestant Reformation: Martin Luther and the 95 Theses, John Calvin
   - Counter-Reformation

f. England from the Golden Age to the Glorious Revolution:
   - The Golden Age

     Henry VIII and the Church of England

     Elizabeth I

     British naval dominance: defeat of Spanish Armada, Sir Francis Drake, British exploration and North American settlements
   - The English Revolution

     King Charles I, Puritans and Parliament

Civil War: Cavaliers and Roundheads
Execution of Charles I
Oliver Cromwell and the Puritan Regime
The Restoration (1660): Charles II restored to the English throne, many Puritans leave England for America

- The "Glorious Revolution"
  King James II replaced by William and Mary
  Bill of Rights: Parliament limits the power of the monarchy

g. Russia: Early Growth and Expansion

- Geography
  Moscow and St. Petersburg, Ural Mountains, Siberia, steppes
  Volga River, Don River, Black Sea, Caspian Sea, Baltic Sea
  Search for a warm-water port
- History and Culture
  Russia as successor to the Byzantine Empire: Moscow as new center of Eastern Orthodox Church and of Byzantine culture (after fall of Constantinople in 1453)
  Ivan III (the Great), czar (from the Latin "Caesar")
  Ivan IV (the Terrible)
  Peter the Great: modernizing and "Westernizing" Russia
  Catherine the Great: reforms of Peter and Catherine make life even harder for peasants

h. Feudal Japan

- Geography
  Sea of Japan, four main islands (Hokkaido, Honshu, Shikoku, Kyushu), Tokyo
  The Pacific Rim, typhoons, earthquakes
- History and Culture
  Emperor as nominal leader, real power in the hands of shoguns
  Samurai, code of Bushido
  Rigid class system
  Closed to outsiders
  Buddhism: the four Noble Truths and the Eightfold Path, Nirvana
  Shintoism: reverence for ancestors, reverence for nature, *kami*

Spring Semester –

i. Geography:
   - Fifty states and capitals
   - Western Hemisphere, North America, Caribbean Sea, Gulf of Mexico
   - Gulf Stream, affect on climate
   - Regions and their characteristics: New England, Mid-Atlantic, South, Midwest, Great Plains, Southwest, West, Pacific Northwest

j. Westward Expansion Before the Civil War
   - Geography

     Rivers: James, Hudson, St. Lawrence, Mississippi, Missouri, Ohio, Columbia, Rio Grande

     Erie Canal connecting the Hudson River and Lake Erie

     Appalachian and Rocky Mountains

     Continental Divide and the flow of rivers: east of Rockies to the Arctic or Atlantic Oceans, west of Rockies to the Pacific Ocean

     Great Plains stretching from Canada to Mexico
   - Early exploration of the West

     Daniel Boone, Cumberland Gap, Wilderness Trail

     Lewis and Clark, Sacagawea

     "Mountain Men," fur trade

     Zebulon Pike, Pike's Peak
   - Pioneers

     Getting there in wagon trains, flatboats, steamboats

     Many pioneers set out from St. Louis (where the Missouri and Mississippi Rivers meet).

     Land routes: Santa Fe Trail and Oregon Trail

     Mormons (Latter-day Saints) settle in Utah, Brigham Young, Salt Lake

     Gold Rush, '49ers
   - Native American resistance

     More and more settlers move onto Native American lands, treaties made and broken

     Tecumseh (Shawnee): attempted to unite tribes in defending their land

     Battle of Tippecanoe

     Osceola, Seminole leader

- "Manifest Destiny" and conflict with Mexico
  The meaning of "manifest destiny"
  Early settlement of Texas: Stephen Austin
  General Antonio Lopez de Santa Anna
  Battle of the Alamo ("Remember the Alamo"), Davy Crockett, Jim Bowie
- The Mexican-American War
  General Zachary Taylor ("Old Rough and Ready")
  Some Americans strongly oppose the war, Henry David Thoreau's "Civil Disobedience"
  Mexican lands ceded to the United States (California, Nevada, Utah, parts of Colorado, New Mexico, Arizona)

k. Causes and Conflicts of the Civil War:
   - Abolitionists: William Lloyd Garrison and The Liberator, Frederick Douglass
   - Slave life and rebellions
   - Industrial North versus agricultural South
   - Mason-Dixon Line
   - Controversy over whether to allow slavery in territories and new states: Missouri Compromise of 1820, Dred Scott decision allows slavery in the territories
   - Importance of Harriet Beecher Stowe's Uncle Tom's Cabin
   - John Brown, Harper's Ferry
   - Lincoln: "A house divided against itself cannot stand;" Lincoln-Douglas debates, Lincoln elected president.
   - Southern secession

l. The Civil War
   - Military actions: Fort Sumter, First Battle of Bull Run, USS Monitor and CSS Virginia (ironclads), Battle of Antietam Creek, Gettysburg, Sherman's march to the sea, burning of Atlanta, fall of Richmond, surrender at Appomattox
   - People: Jefferson Davis, Robert E. Lee, Ulysses S. Grant, Stonewall Jackson, William Tecumseh Sherman
   - Terms: Confederacy, Yankees and Rebels (Blue and Gray)
   - The Emancipation Proclamation

- Gettysburg Address, Lincoln's Second Inaugural
- African-American troops, Massachusetts Regiment led by Colonel Shaw
- Assassination of Lincoln by John Wilkes Booth

m. Reconstruction

- The South in ruins
- Struggle for control of the South, Radical Republicans vs. Andrew Johnson, impeachment
- Carpetbaggers and scalawags
- Freemen's Bureau, "40 Acres and a mule"
- 13th, 14th, and 15th Amendments to the Constitution
- Black Codes, the Ku Klux Klan and "vigilante justice"
- End of Reconstruction, Compromise of 1877, all federal troops removed from the South

n. Native Americans: Cultures and Conflicts

- Culture and Life
  Great Basin (e.g., Nez Perce)
  Plateau (e.g., Shoshone and Ute)
  Plains (e.g. Arapaho, Cheyenne, Lakota [Sioux], Blackfeet, Crow)
  Extermination of buffalo (review from grade 2)
  Pacific Northwest (e.g. Chinook, Kwakiutl, Yakima)
- American Government Policies
  Bureau of Indian Affairs
  Forced removal to reservations
  Attempts to break down tribal life, assimilation policies, Carlisle School
- Conflicts
  Sand Creek Massacre
  Little Big Horn: Crazy Horse, Sitting Bull, Custer's Last Stand
  Wounded Knee: Ghost Dance
  Nez Perce Removal; "I will fight no more forever," Chief Joseph (Highh'moot Tooyalakekt)

o. Westward Expansion After the Civil War

- Homestead Act (1862), many thousands of Americans and immigrants start farms in the West
- "Go west, young man" (Horace Greeley's advice)

- Railroads, Transcontinental Railroad links east and west, immigrant labor
- Cowboys, cattle drives
- The "wild west," reality versus legend: Billy the Kid, Jesse James, Annie Oakley, Buffalo Bill
- "Buffalo Soldiers," African American troops in the West
- U.S. purchases Alaska from Russia, "Seward's folly"
- 1890: the closing of the American frontier (as acknowledged in the U.S. Census), the symbolic significance of the frontier

V. Mathematics

Resources:

- Primary Mathematics Textbooks 5A & 5B, US Edition, Singapore Mathematics
- Primary Mathematics Workbooks 5A & 5B, US Edition, Singapore Mathematics
- Primary Math Teacher's Guides 5A & 5B, US Edition, Singapore Mathematics

Fall Semester –

a. Whole Numbers
   - Place values
   - Millions
   - Approximation and estimation
   - Multiplying by tens, hundreds, or thousands
   - Dividing by tens, hundreds, or thousands
   - Order of operations
   - Word problems

b. Multiplication and Division by a 2-Digit Whole Number

c. Fractions
   - Fraction and division
   - Addition and subtraction of unlike fractions
   - Addition and subtraction of mixed numbers
   - Product of a fraction and a whole number
   - Product of fractions
   - Dividing a fraction by a whole number
   - Word problems

d. Area of Triangle
e. Ratio
    - Finding ratio
    - Equivalent ratios
    - Comparing three quantities
f. Angles
    - Measuring angles
    - Finding unknown angles

Spring Semester –

g. Decimals
    - Approximation and estimation
    - Multiplication by tens, hundreds, or thousands
    - Division by tens, hundreds, or thousands
    - Multiplying by a 2-digit whole number
    - Conversion of measurements
h. Percentage
    - Percent
    - Writing fractions as percentage
    - Percentage of a quantity
i. Average
j. Rate
k. Graphs: Line Graphs
l. Triangles
    - Sum of angles of a triangle
    - Isosceles and equilateral triangles
    - Drawing triangles
m. 4-Sided Figures
    - Parallelograms, rhombuses, and trapezoids
    - Drawing parallelograms and rhombuses
n. Tessellations: Tiling Patterns
o. Volume
    - Cubes and cuboids
    - Finding the volume of a solid

VI. Science

Teacher Resources

- Science Explorer series (Teacher's Editions): *Cells and Heredity, Animals, Human Biology and Health*
- *Carl Linneaus*, Margaret J. Anderson
- *John Dalton and the Atomic Theory*, Jim Whiting
- *Percy Lavon Julian: Pioneering Chemistry*, Darlene R. Stille

Student Resources:

- Science Explorer series (Student and Teacher's Editions): *Chemical Building Blocks, From Bacteria to Plants*
- *ScienceSaurus: A Student Handbook* (green cover), Houghton Mifflin Harcourt

a. Classifying Living Things

- ♦ Domains: Bacteria, Archaea, Eukarya
- ♦ Kingdoms within Domain Eukarya: Plantae, Animalia, Fungi (mushrooms, yeast, mold, mildew), Protista (algae, protozoans, amoeba, *Euglena*)
- ♦ Domain Bacteria corresponds to the Kingdom Eubacteria (*E. coli*, cyanobacteria). Domain Archaea corresponds to the Kingdom Archaebacteria (bacteria living in extreme environments; halophiles, methanogens). These are two kingdoms of prokaryotes differing in their cell structure and genetic makeup.
- ♦ Each Kingdom is divided into smaller groupings as follows: Phylum, Class, Order, Family, Genus, Species (followed by intra-species variety).
- ♦ Scientific Names
  Use of Latin
  Homo sapiens: the scientific name for the human species (genus *Homo*, species *sapiens*)
  Taxonomists: biologists who specialize in classification
- ♦ Different classes of vertebrates and major characteristics: fish, amphibians, reptiles, birds, mammals
- ♦ Examples of how an animal is classified [e.g., collie: Domain Eukarya, Kingdom Animalia, Phylum Chordata (subphylum Vertebrata), Class Mammalia, Order Carnivora, Family Canidae, Genus *Canis* (a coyote, wolf, or dog), Species *familiaris* (a domestic dog), of the collie variety]

- Biography: Carl Linneaus (botanist and "Father of Taxonomy" who standardized the classification system

b. Cells: Structures and Processes
   - All living things are made up of cells
   - Structure of cells (both plant and animal): cell membrane, nucleus, cytoplasm, organelles (include mitochondria and vacuoles)
   - Plant cells, unlike animal cells, have cell walls and chloroplasts
   - Prokaryotes (bacteria): cells without nuclei and membrane-bound organelles
   - Some organisms consist of only a single cell (e.g. prokaryotes, amoeba, protozoans, some algae)
   - Cells are shaped differently in order to perform different functions
   - Organization of cells into tissues, organs, and systems
     In complex organisms, groups of cells form tissues
     Tissues with similar functions form organs
     In complex organisms, organs work together in a system (e.g. digestive, circulatory, and respiratory systems)
   - Biography: Ernest Just (biologist and medical pioneer who specialized in studying cells and reproduction in marine animals)

c. Plant Structures and Processes
   - Structure: non-vascular and vascular plants
     Non-vascular plants (e.g., mosses)
     Vascular plants have tubelike structures that allow water and dissolved nutrients to move through the plant
     Parts and functions of vascular plants: roots, stems and buds, leaves
   - Photosynthesis
     Photosynthesis is an important life process that occurs in plant cells, but not animal cells (photo = light; synthesis = putting together).
   - Reproduction
     Asexual reproduction
       Example of algae
       Vegetative reproduction: runners and bulbs, growing plants from eyes, buds, leaves, roots, and stems
     Sexual reproduction by spore-bearing plants (e.g. mosses and ferns)

Sexual reproduction of non-flowering seed plants: conifers, male and female cones, wind pollination

Sexual reproduction of flowering plants

Functions of sepals and petals, stamen, anther, pistil, ovary

Process of seed and fruit production: pollen, wind, insect and bird pollination, fertilization, growth of ovary, mature fruit.

Seed germination and plant growth: seed coat, embryo and endosperm, germination, monocots (e.g., corn) and dicots (e.g., beans)

d. Life Cycles and Reproduction

- The life cycle and reproduction

Life cycle: development of an organism from birth to growth, reproduction, death

All living things reproduce themselves. Reproduction may be sexual or asexual.

Examples of asexual reproduction: fission (splitting) of bacteria, spores from mildews, molds, and mushrooms, budding of yeast cells, regeneration and cloning

Sexual reproduction requires the joining of special male and female cells, called gametes, to form a fertilized egg.

- Sexual reproduction in animals

Reproductive organs: testes (sperm) and ovaries (eggs)

External fertilization: spawning

Internal fertilization: birds, mammals

Development of the embryo: egg, zygote, embryo, growth in uterus, fetus, newborn

- Biography: Percy Lavon Julian (biologist and inventor who developed synthetic cortisone to treat arthritis pain)

e. The Human Body

- Changes in human adolescence: puberty, glands and hormones, growth spurt, hair growth, breasts, voice change
- The endocrine system

The human body has two types of glands: duct glands (e.g., salivary glands) and ductless (or endocrine) glands

Endocrine glands secrete chemicals called hormones. Different hormones control different body processes

Pituitary gland: located at the bottom of the brain; secretes hormones that control other glands, and hormones that regulate growth

Thyroid gland: located below the voice box; secretes a hormone that controls the rate at which the body burns and uses food

Pancreas: both a duct and ductless gland; secretes a hormone called insulin that regulates how the body uses and stores sugar; when the pancreas does not produce enough insulin, a person has a sickness called diabetes

Adrenal glands: secrete a hormone called adrenaline, especially when a person is frightened or angry, causing rapid heartbeat and breathing

- The reproductive system

Females: ovaries, fallopian tubes, uterus, vagina, menstruation

Males: testes, scrotum, penis, urethra, semen

Sexual reproduction: intercourse, fertilization, zygote, implantation of zygote in the uterus, pregnancy, embryo, fetus, newborn

f. Chemistry: Matter and Change

- Atoms, Molecules, and Compounds

Basics of atomic structure: nucleus, protons, neutrons, electrons

Atoms are constantly in motion, electrons move around the nucleus in paths called shells (or energy levels)

Atoms may join together to form molecules and compounds

Common compounds and their formulas: H_2O, NaCl, CO_2

- Elements

Elements have atoms of only one kind, having the same number of protons. There are a little more than 100 different elements

The Periodic Table: organizes elements with common properties; explain atomic symbol and atomic number

Some well-known elements and their symbols: Hydrogen (H), Helium (He), Carbon (C), Nitrogen (N), Oxygen (O), Sodium (Na), Aluminum (Al), Silicon (Si), Chlorine (Cl), Iron (Fe), Copper (Cu), Silver (Ag), Gold (Au)

Two important categories of elements: metals and non-metals

Metals comprise about 2/3 of the known elements

Properties of metals: most are shiny, ductile, malleable, conductive

- Biography: John Dalton (chemist; atomic theory)
- Chemical and Physical Change

  Chemical change alters a molecule's composition and results in a new substance with a new molecular structure. Examples of chemical change: rusting of iron, burning of wood, milk turning sour

  Physical change alters only the properties or appearance of the substance, but does not change what the substance is made up of. Examples of physical change: cutting wood or paper, breaking glass, freezing water

VII. Visual Arts

Resources:

- Art Resources, Grade 5, Core Knowledge Foundation
- Text Resources, Grade 5, Core Knowledge Foundation
- *Children's Book of Art*, DK Eyewitness

a. Art of the Renaissance:

- Shift in world view from medieval to Renaissance art, a new emphasis on humanity and the natural world
- The influence of Greek and Roman art on Renaissance artists (classical subject matter, idealization of human form, balance and proportion)
- The development of linear perspective during the Italian Renaissance

  The vantage point or point-of-view of the viewer

  Convergence of lines toward a vanishing point, the horizon line
- Observe and discuss works in different genres – such as portrait, fresco, Madonna – by Italian Renaissance artists, including

  Sandro Botticelli, *The Birth of Venus*

  Leonardo da Vinci: *The Proportions of Man*, *Mona Lisa*, *The Last Supper*

  Michelangelo, Ceiling of the Sistine Chapel, especially the detail know as *The Creation of Adam*

Raphael: The Marriage of the Virgin, examples of his Madonnas (such as *Madonna and Child with the Infant St. John*, *The Alba Madonna*, or *The Small Cowper Madonna*)

- ♦ Become familiar with Renaissance sculpture, including
  Donatello, *Saint George*
  Michelangelo, *David*
- ♦ Become familiar with Renaissance architecture, including
  The Florence Cathedral, dome designed by Filippo Brunelleschi
  St. Peter's in Rome
- ♦ Observe and discuss paintings of the Northern Renaissance, including
  Pieter Bruegel, *Peasant Wedding*
  Albrecht Durer, *Self-Portrait* (such as from 1498 or 1500)
  Jan van Eyck, *Giovanni Arnolfini and His Wife* (also known as *Arnolfini Wedding*)

b. American Art: Nineteenth-Century United States

- ♦ Become familiar with the Hudson River School of landscape painting, including
  Thomas Cole, *The Oxbow* (*The Connecticut River Near Northampton*)
  Albert Bierstadt, *Rocky Mountains, Lander's Peak*
- ♦ Become familiar with genre paintings, including
  George Caleb Bingham, *Fur Traders Descending the Missouri*
  William Sidney Mount, *Eel Spearing at Setauket*
- ♦ Become familiar with art related to the Civil War, including
  Civil War photography of Mathew Brady and his colleagues
  The Shaw Memorial sculpture of Augustus Saint-Gaudens
- ♦ Become familiar with popular prints by Currier and Ives

c. Art of Japan

- ♦ Become familiar with: The Great Buddha (also known as the Kamakura Buddha), Landscape gardens

VIII. Music

Resources:

- Core Knowledge Music Collection, Grades 3-5, Core Knowledge Foundation
- Text Resources, Grade 5, Core Knowledge Foundation

a. Elements of Music:

- Through participation, become familiar with basic elements of music (rhythm, melody, harmony, form, timbre, etc.).

  Recognize a steady beat, accents, and the downbeat; play a steady beat, a simple rhythm pattern, simultaneous rhythm patterns, and syncopation patterns.

  Discriminate between fast and slow; gradually slowing down and getting faster; *accelerando* and *ritardando*.

  Discriminate between differences in pitch: high and low.

  Discriminate between loud and soft; gradually increasing and decreasing volume; *crescendo* and *decrescendo*.

  Understand *legato* (smoothly flowing progression of notes) and *staccato* (crisp, distinct notes).

  Sing unaccompanied, accompanied, and in unison.

  Recognize harmony; sing simple rounds and canons.

  Recognize introduction, interlude, and coda in musical selections.

  Recognize verse and refrain.

  Continue work with timbre and phrasing.

  Recognize theme and variations.

  Sing or play simple melodies while reading scores.

- Understanding the following notation and terms:

  names of lines and spaces in the treble clef; middle C

  treble clef, staff, bar line, double bar line, measure, repeat signs

  whole note, half note, quarter note, eighth note

  whole rest, half rest, quarter rest, eighth rest

  grouped sixteenth notes

  tied notes and dotted notes

  sharps flats

Da capo [D.C.] *al fine*

meter signature 4/4, 2/4, ¾ or common time 2/4, 3/4, 6/8

soft ***pp p mp*** loud ***mf f ff***

b. Listening and Understanding

- Composers and their music

  Ludwig van Beethoven, *Symphony No. 5*

  Modest Mussorgsky, *Pictures at an Exhibition* (as orchestrated by Ravel)

- Musical Connections

  Music from the Renaissance (such as choral works of Josquin Desprez; lute songs by John Dowland)

c. American Musical Traditions

- Spirituals: Originated by African-Americans, many spirituals go back to the days of slavery.

  Familiar spirituals, such as: Down by the Riverside, Sometimes I Feel Like a Motherless Child, Wayfaring Stranger, We Shall Overcome

d. Songs

Battle Hymn of the Republic
Danny Boy
Dona Nobis Pacem (round)
Git Along Little Dogies
God Bless America
Greensleeves
The Happy Wanderer
Havah Nagilah
If I Had a Hammer
Red River Valley
Sakura
Shenandoah
Sweet Betsy from Pike

Fifth Grade Curriculum Map

	August-September	October	November	December	January	February	March	April	May
Math (Primary Mathematics)	Lessons 1-2 (5A)	Lessons 2-3 (5A)	Lessons 3-4 (5A)	Lessons 5-6 (5A)	Lesson 1 (5B)	Lessons 2-3 (5B)	Lessons 4-5 (5B)	Lessons 6-7 (5B)	Lessons 8-9 (5B)
Literature (include 2 poems per month)	Don Quixote	Don Quixote	Comedy of Errors Tale of the Oki Islands	Secret Garden	Adventures of Tom Sawyer	Frederick Douglass	Sherlock Holmes	Little Women	Native American Stories
Orthography (Riggs)	Roots review 3 roots & 10 spelling/vocab. words per week	3 roots & 10 spelling/vocab. words per week	3 roots & 10 spelling/vocab. words per week	3 roots & 10 spelling/vocab. words per week	3 roots & 10 spelling/vocab. words per week	3 roots & 10 spelling/vocab. words per week	3 roots & 10 spelling/vocab. words per week	3 roots & 10 spelling/vocab. words per week	3 roots & 10 spelling/vocab. words per week
Grammar (Well Ordered Language)	Four Kinds of Sentences Adverbs & Adjectives Direct Objects	Predicate Verbs, Nominatives & Adjectives Sensory Linking Verbs	Prepositional Phrases Personal Pronouns	Compound Elements Indirect Objects	Interrogative Pronouns Relative Clauses	Adverbial Elements & Interrogative Adverbs Adverbial Clauses	Reflexive Pronouns Participles	Gerunds Infinitives	Compound-Complex Sentences
Composition	Introduction to 5 Paragraph Essay	Informative Essay Introduction	Informative Essay Body Paragraphs	Review/ Remediation	Review/ Remediation	Narrative Essay Introduction	Narrative Essay Body Paragraphs	Persuasive Essay Introduction	Persuasive Essay Body Paragraphs
Science	Plant Structures and Processes	Plant Structures and Processes Classification	Classification Carl Linnaeus	Cell Structures and Processes Ernest Just	Cell Structures and Processes	Life Cycles and Reproduction Percy Lavon Julian	Endocrine System Reproductive System	Atomic Structure & Periodic Table John Dalton	Elements, Compounds, & Chemical Change
History & Geography	Geography Early American Civilizations	European Exploration and Trade Renaissance	Reformation England from Henry VIII to William & Mary	Russia Feudal Japan	Westward Expansion to 1860	Civil War	Civil War Reconstruction	Native Americans	Westward Expansion after 1860
Art	Renaissance Art	Renaissance Art/Sculpture	Renaissance Art/Architecture	Art of Japan	19th-century American Art	19th-century American Art	19th-century American Art	19th-century American Art	
Music	Basic Notation and Elements	Renaissance Music	Mendelssohn Dona Nobis Pacem	Mussorgsky Songs: Sakura and Hava Nagilah	Beethoven	Spirituals	American Songs	American Songs	American Songs

Sixth Grade

I. Phonics and Literacy

Resources:

(For first- and second-year schools)

- *Writing and Spelling Road to Reading and Thinking*, Level I Teacher's Edition, Riggs Institute
- *Writing and Spelling Road to Reading and Thinking*, Level II Teacher's Edition, Riggs Institute
- *Writing and Spelling Road to Reading and Thinking*, Level III Spelling List, Riggs Institute
- Box of Phonogram cards, Riggs Institute
- *The ABC's and All Their Tricks,* Margaret Bishop
- "Older Student Adaptation: Instructions for 3-6th Grade Teachers," Access Literacy (pamphlet)
- *My English Orthography Notebook*, Access Literacy
- Standard Test Lessons in Reading: Books D-F, McCall-Crabbs
- Standard Test Lessons in Reading: Teacher's Manual, McCall-Crabbs
- Standard Test Lessons in Reading: Answer Sheets, McCall-Crabbs
- *English from the Roots Up*, Volume I, Joegil Lundquist
- *English from the Roots Up*, Volume II, Joegil Lundquist

a. New Schools: In the first year of a school, 6th grade teachers should spend the first month covering the material in the "Older Student Adaptation" pamphlet, which draws from various lessons in the Level I manual. This will include teaching the phonograms, remediating student handwriting or teaching cursive, and working on more basic spelling lists. After this month, teachers should test students according to the instructions on page 20 of the "Older Student Adaptation" pamphlet. Depending on the class average, the teacher will either review spelling lists as described on page 20, or move forward from at the pace of one spelling-vocabulary list every two weeks, through the entire year or until the students have tested beyond the Level III vocabulary. Students should make daily entries in their own copy of *My English Orthography Notebook* such that the notebook is filled, or nearly filled, by the end of the school year.

b. Second-Year Schools: In the school's second year, most sixth-grade students will be well acquainted with the Level I, II, and III programs from the previous grade, but they may not be through the Level III spelling and vocabulary words. To begin the new school year, teachers should assess the class ability level using the

assessments and related instructions on pages 29-42 of the Level I manual. Teachers should grade each test by counting the number of correctly spelled words until a student misses five words in a row. The class average should then be compared to the equivalency table on page 33, and this score will indicate the spelling list with which the class should begin. From this starting point, teachers should proceed at a pace of one spelling-vocabulary list every two weeks through the entire year. When the class finishes the Level III manual—or if the class orthography assessment scores are above the Level III manual—then teachers should choose approximately 10 words per week to explicitly instruct for spelling and as vocabulary words. The vocabulary can be chosen from the curriculum alongside teaching Latin and Greek roots from *English from the Roots Up*.

c. Established Schools: In established schools, students should have already finished all spelling and vocabulary words in the Level I, II, and III manuals, as well as the Greek and Latin roots in the two volumes of *English from the Roots Up*. If necessary, teachers can begin the year by reviewing spelling lists from the Level III manual and Greek and Latin roots from *English from the Roots Up*. Teachers should choose approximately 300 vocabulary words based upon words from the literature, history, and science curriculum to be explicitly taught for spelling and usage. Students should be given regular practice opportunities for spelling and usage of the new vocabulary. Then vocabulary can be tested weekly or bi-weekly to assess mastery.
d. As necessary, use the McCall-Crabbs Standard Test Lessons in Reading to assess and build student reading comprehension.

II. Grammar

Resources:

For First-Year Schools:

- *Well-Ordered Language*, Level 2A, Peters and Coupland
- *Well-Ordered Language*, Level 2B, Peters and Coupland

For Other Schools:

- *Well-Ordered Language*, Level 4A, Peters and Coupland (available to pilot in 2018)
- *Well-Ordered Language*, Level 4B, Peters and Coupland (available to pilot in 2018)

a. Grammar

Level 4A

- Four Kinds of Sentences &Principal Elements
- Adverbs and Adjectives
- Predicate Verb, Predicate Nominative, Predicate Adjective with Sensory Linking verbs
- Prepositional Phrases
- Indirect Objects
- Interrogative pronouns & Interrogative Adverbs
- Relative Clauses
- Reflexive, Intensive, & Indefinite pronouns
- Adverbial clauses

Level 4B

- Verbals - Participles
- Participle phrases
- Verbals - Gerunds
- Gerund phrases
- Verbals - Infinitives
- Infinitives phrases
- Appositives
- Noun clauses

b. Composition

- Informative Essay: Student writes introductory paragraph and 3 body paragraphs. Conclusion paragraph optional, depending on student ability and necessity for one.
- Narrative Essay: Student writes introductory paragraph and 3 body paragraphs. Conclusion paragraph optional, depending on student ability and necessity for one.
- Persuasive Essay: Student writes introductory paragraph and 3 body paragraphs. Conclusion paragraph optional, depending on student ability and necessity for one.

III. Literature

Teacher Resources:

- *What Your Sixth Grader Needs to Know*, Core Knowledge Foundation
- Macbeth DVD, Royal Shakespeare Company 1979 Production
- *Metamorphoses*, Ovid (Mendelbaum Translation)
- *Classic Myths to Read Aloud,* William F. Russell

Student Resources:

- *Realms of Gold*, Volume 1, Core Knowledge Foundation
- *Children's Homer*, Padraic Colum
- *Macbeth,* William Shakespeare
- *Prince and the Pauper*, Mark Twain
- *The Count of Monte Cristo*, Alexandre Dumas
- *The Scarlet Pimpernel*, Baroness Orczy

a. Poetry

- Poems:

  Realms of Gold, Volume 1

  All the world's a stage (from *As You Like It*), William Shakespeare
  Apostrophe to the Ocean (from *Childe Harold's Pilgrimage*, Canto 4, Nos. 178-184), George Gordon Byron
  Wandered Lonely as a Cloud, William Wordsworth
  If, Rudyard Kipling
  Mother to Son, Langston Hughes
  Lift Ev'ry Voice and Sing, James Weldon Johnson
  A narrow fellow in the grass, Emily Dickinson
  A Psalm of Life, Henry Wadsworth Longfellow
  The Raven, Edgar Allan Poe
  A Song of Greatness, a Chippewa song, trans. Mary Austin
  Stopping by Woods on a Snowy Evening, Robert Frost
  Sympathy, Paul Laurence Dunbar
  There is no frigate like a book, Emily Dickinson
  The Walloping Window-blind, Charles E. Carryl
  Woman Work, Maya Angelou

- Terms: meter, iamb, couplet, rhyme scheme, free verse

b. Fiction

- Novels

  The Prince and the Pauper, Mark Twain

The Scarlet Pimpernel, Baroness Orczy

The Count of Monte Cristo, Alexandre Dumas

- Stories

  Children's Homer, Padraic Colum

- Drama

  Macbeth, William Shakespeare

- Classical Mythology

  Ovid's *Metamorphoses*

  Apollo and Daphne (Book I)

  Narcissus and Echo (Book III)

  Classic Myths to Read Aloud

  Pygmalion and Galatea

  Orpheus and Eurydice

- Literary Terms:

  Epic

  Literal and figurative language (review from grade 5): imagery, metaphor, simile, symbol, personification

c. Sayings and Phrases:

What Your Sixth Grader Needs to Know

All for one and one for all.

All's well that ends well.

Bee in your bonnet

The best-laid plans of mice and men oft go awry.

A bird in the hand is worth two in the bush.

Bite the dust

Catch-as-catch-can

Don't cut off your nose to spite your face.

Don't lock the stable door after the horse is stolen.

Don't look a gift horse in the mouth.

Eat humble pie

A fool and his money are soon parted.

A friend in need is a friend indeed.

Give the devil his due.

Good fences make good neighbors.

He who hesitates is lost.

He who laughs last laughs best.

Hitch your wagon to a star.

If wishes were horses, beggars would ride.

The leopard doesn't change his spots.

Little strokes fell great oaks.

Money is the root of all evil.

Necessity is the mother of invention.

It's never over till it's over.

Nose out of joint

Nothing will come of nothing.

Once bitten, twice shy.

On tenterhooks

Pot calling the kettle black

Procrastination is the thief of time.

The proof of the pudding is in the eating.

RIP

The road to hell is paved with good intentions.

Rome wasn't built in a day.

Rule of thumb

A stitch in time saves nine.

Strike while the iron is hot.

Tempest in a teapot

Tenderfoot

There's more than one way to skin a cat.

Touché!

Truth is stranger than fiction.

IV. History and Geography

Resources:

- *History & Geography*, 6th grade text, Core Knowledge Foundation
- *The Story of the World, Volume 1: Ancient Times*, Susan Wise Bauer
- *The Story of the World, Volume 2: The Middle Ages*, Susan Wise Bauer
- *The Story of the World, Volume 3: Early Modern Times*, Susan Wise Bauer
- DK Eyewitness Books (useful as a visual aid, especially because neither Bauer nor Eggleston use many pictures or maps)
- *The Golden Days of Greece*, Olivia Coolidge

Fall Semester –

a. Geography
    - ♦ Geographic Tools: Map keys, latitude and longitude, coordinates, degrees, relief maps
    - ♦ The Globe: Tropic of Cancer, Tropic of Capricorn, climate zones, time zones, Arctic Circle, Antarctic Circle
    - ♦ Great Deserts:
      Definition of desert; hot vs. cold deserts
      Major deserts: Sahara and Kalahari in Africa; Australia (mostly desert continent); Gobi Desert and Arabian Peninsula in Asia; Mojave, Chihuahuan, and Sonoran in North America; Atacama in South America

b. Lasting Ideas from Ancient Civilizations: Judaism and Christianity
    - ♦ Basic ideas in common
      The nature of God and humanity
      Hebrew Bible and Old Testament of Christian Bible
    - ♦ Judaism: central ideas and moral teachings
      Torah, monotheism
      The idea of a "covenant" between God and man
      Concepts of law, justice, and social responsibility
      Important Stories: Creation, the Fall, Tower of Babel, Calling of Abraham, Abraham and Isaac, Exodus, 10 Commandments, Battle of Jericho and the Promised Land, Anointing of David, David and Goliath, Solomon's Request for Wisdom, Elijah and the Priests of Baal
    - ♦ Christianity: central ideas and moral teachings
      New Testament
      The Sermon on the Mount and the two "great commandments" (Matthew 22: 37-40)
      Important Stories: Nativity, John the Baptist, Baptism of Jesus, Walking on Water, Prodigal Son, Raising of Lazarus, Triumphal Entry, Lord's Supper, Death and Resurrection, Pentecost
    - ♦ Geography of the Middle East
      Birthplace of major world religions: Judaism, Christianity, Islam

Geographic features: Anatolian Peninsula, Arabian Peninsula, Mesopotamia, Tigris and Euphrates Rivers, Atlas Mountains, Taurus Mountains, Mediterranean Sea, Red Sea, Black Sea, Arabian Sea, Persian Gulf

The "silk road"

Climate and terrain: vast deserts (Sahara, Arabian)

c. Lasting Ideas from Ancient Civilizations: Ancient Greece

- The Greek polis (city-state) and patriotism
- Beginnings of democratic government: roots of modern democracy in Athenian democracy, the Assembly, suffrage, majority vote
- The "classical" ideal of human life and works

  The ideal of the well-rounded individual and worthy citizen

  Pericles and the "Golden Age"

  Architecture: the Parthenon

  Games: the Olympics
- Greek wars: victory and hubris, defeat and shame

  Persian Wars: Marathon, Thermopylae, Salamis

  The Peloponnesian War
- Socrates and Plato

  Socrates was Plato's teacher; we know him through Plato's writings

  For Socrates, wisdom is only possible through examination and recognition of one's own ignorance

  The Trial of Socrates
- Plato and Aristotle

  Plato was Aristotle's teacher

  They agreed that reason and philosophy should rule our lives, not emotion and spiritedness

  They disagreed about where true "reality" is: Plato says it is beyond physical things in ideas (i.e., the forms; cf. the "allegory of the cave" in The Republic); Aristotle says reality is only in physical things
- Alexander the Great and the spread of Hellenistic culture

d. Lasting Ideas from Ancient Civilizations: Ancient Rome

- The Roman Republic

Builds upon Greek ideals
Class and status: patricians and plebeians, slaves
Roman government: consuls, tribunes, and senators

- Virgil, The Aeneid: epic on the legendary origins of Rome
- The Punic Wars
- Julius Caesar
- Augustus Caesar
  Pax Romana
  Roman law and the administration of a vast, diverse empire
- Christianity under the Roman Empire
  Jesus' instruction to "Render unto Caesar" (Matthew 22:21)
  Roman persecution of Christians
  Constantine: first Christian Roman emperor
- The "decline and fall" of the Roman Empire
  Causes debated by historians for many hundreds of years (outer forces such as shrinking trade, attacks and invasions; inner forces such as disease, jobless masses, taxes, corruption and violence, rival religions and ethnic groups, weak emperors, etc.)
  Rome's "decline and fall" perceived as an object lesson for later generations and societies

e. The Enlightenment

- Faith in science and human reason, as exemplified by
  Isaac Newton and the laws of nature
  Descartes: "cogito ergo sum"
- Two ideas of human nature: Thomas Hobbes and John Locke
  Hobbes: the need for a strong governing authority as a check on "the condition of man…[which] is a condition of war of all against all"
  Locke: the idea of man as a "tabula rasa" and the optimistic belief in education; argues against doctrine of divine right of kings and for government by consent of the governed
- Influence of the Enlightenment on the beginnings of the United States
  Thomas Jefferson: the idea of "natural rights" in the Declaration of Independence
  Montesquieu and the idea of separation of powers in government

f. The French Revolution

- The influence of Enlightenment ideas and of the English Revolution on revolutionary movement in America and France
- The American Revolution: the French alliance and its effect on both sides
- *L'Ancien Régime* in France
  The social classes: the three Estates
  Louis XIV, the "Sun King": Versailles
  Louis XV: "Après moi, le déluge"
  Louis XVI: the end of the Old Regime
  Marie Antoinette: the famous legend of "Let them eat cake"
- 1789: from the Three Estates to the National Assembly
  July 14, Bastille Day
  Declaration of the Rights of Man
  October 5, Women's March on Versailles
  "Liberty, Equality, Fraternity"
- Louis XVI and Marie Antoinette to the guillotine
- Reign of Terror: Robespierre, the Jacobins, and the "Committee of Public Safety"
- Revolutionary arts and the new classicism
- Napoleon Bonaparte and the First French Empire
  Napoleon as military genius
  Crowned Emperor Napoleon I: reinventing the Roman Empire
  The invasion of Russia
  Exile to Elba
  Wellington and Waterloo

g. Romanticism

- Beginning in early nineteenth century Europe, Romanticism refers to the cultural movement characterized by:
  The rejection of classicism and classical values
  An emphasis on emotion and imagination instead of reason
  An emphasis on nature and the private self instead of society and man in society

- The influence of Jean-Jacques Rousseau's celebration of man in a state of nature (as opposed to man in society): "Man is born free and everywhere he is in chains"; the idea of the "noble savage"
- Romanticism in literature, the visual arts, and music

Spring Semester –

h. The Industrial Revolution
   - Beginnings in Great Britain
     Revolution in transportation: canals, railroads, new highways
     Steam power: James Watt
   - Revolution in textiles: Eli Whitney and the cotton gin, factory production
   - Iron and steel mills
   - The early factory system
     Families move from farm villages to factory towns
     Unsafe, oppressive working conditions in mills and mines
     Women and child laborers
     Low wages, poverty, slums, disease in factory towns
     Violent resistance: Luddites

i. Capitalism and Socialism
   - Capitalism
     Adam Smith and the idea of laissez faire vs. government intervention in economic and social matters
     Law of supply and demand
     Growing gaps between social classes: Disraeli's image of "two nations" (the rich and the poor)
   - Socialism
     An idea intended to offer an alternative to Capitalism; called for the public ownership of the means of production; intended to achieve a more equal distribution of wealth.
     Marxism: the Communist form of Socialism
       Karl Marx and Friedrich Engels, The Communist Manifesto: "Workers of the world, unite!"
       Class struggle: bourgeoisie and proletariat

Communists, in contrast to some other Socialists, opposed all forms of private property

j. Latin American Independence Movements

- The name "Latin America" comes from the Latin origin of the languages now most widely spoken (Spanish and Portuguese)
- Haitian revolution: Toussaint L'Ouverture, Abolition of West Indian slavery
- Mexican revolutions: Miguel Hidalgo, José María Morelos, Santa Anna vs. the United States, Benito Juárez, Pancho Villa, Emiliano Zapata
- Liberators: Simon Bolivar, José de San Martín, Bernardo O'Higgins
- New nations in Central America: Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua
- Brazilian independence from Portugal
- Geography of Latin America

  Mexico: Yucatan Peninsula, Mexico City

  Panama: isthmus, Panama Canal

  Central and South America: locate major cities and countries, including Caracas, Venezuela; Bogota, Colombia; Quito, Ecuador; Lima, Peru; Santiago, Chile; La Paz, Bolivia

  Andes Mountains

  Brazil: largest country in South America, rain forests, Rio de Janeiro, Amazon River

  Argentina: Rio de la Plata, Buenos Aires, Pampas

k. Nineteenth-Century Immigration in the United States

- Waves of new immigrants from about 1830 forward

  Great migrations from Ireland (potato famine) and Germany

  From about 1880 on, many immigrants arrive from southern and eastern Europe

  Immigrants from Asian countries, especially China

  Ellis Island, "The New Colossus" (poem on the Statue of Liberty)

  Large populations of immigrants settle in major cities, including New York, Chicago, Philadelphia, Detroit, Cleveland, Boston, San Francisco
- Tension between ideals and realities

The metaphor of America as a "melting pot"

America perceived as "land of opportunity" vs. resistance, discrimination, and "nativism"

Resistance to Catholics and Jews

Chinese Exclusion Act

l. Industrialization and Urbanization in the United States

- The post-Civil War industrial boom

  The "Gilded Age"

  The growing gap between social classes

  Horatio Alger and the "rags to riches" story

  Growth of industrial cities: Chicago, Cleveland, Pittsburgh

  Many thousands of African-Americans move north

  Urban corruption, "machine" politics: "Boss" Tweed in New York City, Tammany Hall

- The condition of labor

  Factory conditions: "sweat shops," long work hours, low wages, women and child laborers

  Unions: American Federation of Labor; Samuel Gompers

  Strikes and retaliation: Haymarket Square; Homestead, Pennsylvania

  Labor Day

- The growing influence of big business: industrialists and capitalists

  "Captains of industry" and "robber barons": Andrew Carnegie, J.P. Morgan, Cornelius Vanderbilt

  John D. Rockefeller and the Standard Oil Company as an example of the growing power of monopolies and trusts

  Capitalists as philanthropists: funding museums, libraries, etc.

- "Free enterprise" vs. government regulation of business: Interstate Commerce Act and Sherman Antitrust Act attempt to limit power of monopolies

m. Late 19th and Early 20th-Century Reform Movements in the US

- Populism: Discontent and unrest among farmers; gold standard vs. free silver; William Jennings Bryan
- The Progressive Era:

"Muckraking": Ida Tarbell on the Standard Oil Company; Upton Sinclair, *The Jungle*, on the meat packing industry

Jane Addams: settlement houses

Jacob Riis, *How the Other Half Lives*: tenements and ghettos in the modern city

President Theodore Roosevelt: conservation and trust-busting

- Reform for African-Americans

  Ida B. Wells: campaign against lynching

  Booker T. Washington: Tuskegee Institute, Atlanta Exposition Address, "Cast down your bucket where you are"

  W.E.B. DuBois: founding of NAACP, "The problem of the twentieth century is the problem of the color line," *The Souls of Black Folk*

- Women's suffrage: Susan B. Anthony, Nineteenth Amendment (1920)

V. Mathematics

Resources:

- Primary Mathematics Textbooks 6A & 6B, US Edition, Singapore Mathematics
- Primary Mathematics Workbooks 6A & 6B, US Edition, Singapore Mathematics
- Primary Math Teacher's Guides 6A & 6B, US Edition, Singapore Mathematics

Fall Semester –

a. Algebra
   - Algebraic expressions

b. Solid Figures
   - Drawing solid figures
   - Nets

c. Ratio
   - Ratio and fraction
   - Ratio and proportion
   - Changing ratios

d. Percentage
   - Part of a whole as a percentage
   - One quantity as a percentage of another
   - Solving percentage problems by unitary method

e. Speed

- Speed and average speed

Spring Semester –

f. Fractions
   - Division
   - Order of operations
   - Word problems

g. Circles
   - Radius and diameter
   - Circumference
   - Area

h. Graphs: Pie Charts

i. Volume: Solving Problems

j. Triangles and 4-sided Figures: Finding Unknown Angles

k. More Challenging Word Problems
   - Whole numbers and decimals
   - Fractions
   - Ratio
   - Percentage
   - Speed

VI. Science

Teacher Resources:

- *Alexander Fleming*, Salvatore Tocci
- *Alfred Wegener: Pioneer of Plate Tectonics*, Greg Young
- *Isaac Newton: The Scientist Who Changed Everything*, Philip Steele
- *Isaac Newton*, Margaret J. Anderson
- *Lewis Latimer*, Winifred Latimer Norman and Lily Patterson
- *Marie Curie*, Vicki Cobb
- Science Explorer series (Teacher's Editions): *Astronomy, Chemical Building Blocks*
- *Something Out of Nothing: Marie Curie and Radium*, Carla Killough McClafferty

Student Resources:

- Science Explorer series (Student and Teacher's Editions): *Earth's Waters, Inside Earth, Motion, Forces, and Energy*

a. Plate Tectonics
   - The surface of the earth

The surface of the earth is in constant movement

The present features of earth come from its ongoing history. After the sun was formed, matter cooled creating the planets. The continents were once joined (Pangaea).

- Layered structure of the earth

  Crust: surface layer of mainly basalt or granite, 5 to 15 miles thick

  Mantle: 1,800 miles thick, rock of intermediate density, moves very slowly

  Outer core: liquid iron and nickel

  Inner core: solid iron and nickel, 800 miles thick, about 7,000 degrees C

- Crust movements

  The surface of earth is made up of rigid plates that are in constant motion

  Plates move because molten rock rises and falls under the crust causing slowly flowing currents under the plates

  Plates move at speeds ranging from 1 to 4 inches per year

  Earthquakes usually occur where stress has been built up by plates moving in opposite directions against each other. Earthquakes cause waves (vibrations) which have:

  Focus, the point below the surface where the quake begins

  Epicenter, the point on the surface above the focus

  Severity of ground shaking is measured on the Richter scale; each unit on the scale represents a tenfold severity increase

- Volcanoes usually occur where plates are pulling apart or coming together, but some occur at holes (hot spots) in the crust away from plate boundaries. As plates move over these hot spots, they cause chains of volcanoes and island chains like the Hawaiian Islands.
- Evidence for long-term movement of plates includes fit of continents and matches of rock types, fossils, and structures; ocean floor age and topography; ancient climate zones; locations of earthquakes, volcanoes, and mountain ranges; magnetic directions in ancient rocks.
- Biography: Alfred Wegener (known for theory that the continents were once joined together and split apart to form the continents; now known as "the continental drift.")

b. Oceans

- Surface

The world ocean covers most of the earth's surface (71 percent)

Three major subdivisions of the world ocean: Atlantic, Pacific, and Indian Oceans

Islands consist of high parts of submerged continents, volcanic peaks, coral atolls

- Subsurface land features

  Continental shelf, continental slope, continental rise, abyssal plains

  Mid-ocean ridges and trenches, plate tectonics: Mid-Atlantic Ridge, Mariana Trench

- Ocean bottom: average depth of sediment .3 mile, consists of rock particles and organic remains
- Composition of seawater: dilute solution of salts which come from weathering and erosion of continental rocks. Sodium chloride is the main salt.
- Currents, tides, and waves

  Surface currents: large circular streams kept in motion by prevailing winds and rotation of the earth; Gulf Stream (North Atlantic), Kuroshio (North Pacific)

  Subsurface currents are caused by upwelling from prevailing offshore winds (Peru, Chile) and density differences (Antarctica); the upwelling pushes up nutrients from the ocean floor.

  Tides are caused by gravitational forces of the sun and moon; there are two tides daily.

  Waves are caused by wind on the ocean's surface.

  Water molecules tend to move up and down in place and not move with the wave.

  Crest and trough, wave height and wavelength, shoreline friction

  Tsunamis: destructive, fast-moving large waves caused mainly by earthquakes

c. Marine life

- Life zones are determined by the depth to which light can penetrate making photosynthesis possible, and by the availability of nutrients.

The bottom (benthic zone) extends from sunlit continental shelf to dark sparsely populated depths. Shallow lighted water extending over continental shelf contains 90% of marine species.

Pelagic zone: water in open oceans.

- Classification of marine life

  Bottom-living (benthic) such as kelp and mollusks

  Free-swimming (nekton) such as fish and whales

  Small drifting bacteria, protists, plants and animals (plankton), which are the dominant life and food source in the ocean

- The basis for most marine life is phytoplankton (plant-plankton), which carry on photosynthesis near surface; contrast zooplankton.
- Most deepwater life depends on rain of organic matter from above. The densest concentration of marine life is found in surface waters, such as those off Chile, where nutrient-rich water wells up to the bright surface.

d. Astronomy: Gravity, Stars, and Galaxies

- Gravity: an attractive force between objects

  Newton's law of universal gravitation: between any two objects in the universe there is an attractive force, gravity, which grows greater as the objects move closer to each other.

  How gravity keeps the planets in orbit

- Stars

  The sun is a star.

  Kinds of stars (by size): giants, dwarfs, pulsars

  Supernova; black holes

  Apparent movement of stars caused by rotation of the earth

  Constellations: visual groupings of stars, for example, Big Dipper, Orion

  Astronomical distance measured in light years

- Galaxies

  The Milky Way is our galaxy; the Andromeda Galaxy is closest to the Milky Way.

  Quasars are the most distant visible objects (because the brightest).

- Biography: Isaac Newton (known for advances in physics; outlined laws of gravity and invented the telescope)

e. Energy and Heat

- Energy

  Six forms of energy: mechanical, heat, electrical, wave, chemical, nuclear

  The many forms of energy are interchangeable, e.g., gasoline in a car, windmills, hydroelectric plants

  Sources of energy: e.g. heat (coal, natural gas, solar, atomic, geothermal, and thermonuclear), mechanical motion (falling water, wind, etc.)

  Fossil fuels: a finite resource

  Carbon, coal, oil, natural gas

  Environmental impact of fossil fuels: carbon dioxide and global warming theory, greenhouse effect, oil spills, acid rain

  Nuclear energy

  Uranium, fission, nuclear reactor; radioactive waste

  Nuclear power plants: safety and accidents (e.g. Three Mile Island, Chernobyl)

- Heat

  Heat and Temperature: how vigorously atoms are moving and colliding

  Three ways heat can be transferred: conduction, convection, radiation

  Direction of heat transfer

- Biography: Marie Curie (advances in science of radioactivity; discovered the elements polonium and radium)

f. Physical Change: Energy Transfer

- States of matter (solid, liquid, gas) in terms of molecular motion

  In gases, loosely packed atoms and molecules move independently and collide often. Volume and shape change readily.

  In liquids, atoms and molecules are more loosely packed than in solids and can move past each other. Liquids change shape readily but resist change in volume.

  In solids, atoms and molecules are more tightly packed and can only vibrate. Solids resist change in shape and temperature.

- Most substances are solid at low temperatures, liquid at medium temperatures, and gaseous at high temperatures.
- A change of phase is a physical change (no new substance is produced).
- Matter can be made to change phases by adding or removing energy.
- Expansion and contraction

Expansion is adding heat energy to a substance, which causes the molecules to move more quickly and the substance to expand.

Contraction is when a substance loses heat energy, the molecules slow down, and the substance contracts.

Water is a special case: water expands when it changes from a liquid to a solid.

- ♦ Changing phases: condensation, freezing, melting; boiling

  Different amounts of energy are required to change the phase of different substances.

  Each substance has its own melting and boiling point.

  The freezing point and boiling point of water (in Celsius and Fahrenheit)
- ♦ Distillation: separation of mixtures of liquids with different boiling points.
- ♦ Biography: Lewis Howard Latimer (worked with Alexander Graham Bell on drawings of Bell's invention, the telephone; improved Thomas Edison's light bulb)
- ♦ Biography: James Prescott Joule (physicist for which the SI unit for energy is named)

g. The Human Body

- ♦ The circulatory and lymphatic systems

  Briefly review from grade 4: circulatory system

  Lymph, lymph nodes, white cells, tonsils

  Blood pressure, hardening and clogging of arteries
- ♦ The immune system fights infections from bacteria, viruses, fungi.

  White cells, antibodies, antigens

  Vaccines, communicable and non-communicable diseases, epidemics

  Bacterial diseases: tetanus, typhoid, tuberculosis; antibiotics like penicillin, discovered by Alexander Fleming

  Viral diseases: common cold, chicken pox, mononucleosis, rabies, polio, AIDS
- ♦ Biography: Alexander Fleming (biologists who discovered penicillin)

VII. Art

Resources:

- *Eyewitness Companions: Art*, Robert Cumming (DK Eyewitness)
- Eyewitness: Renaissance, Alison Cole (DK Eyewitness)
- Various trade books with large prints of the art listed in the CK Sequence below.

a. Classical Art: The Art of Ancient Greece and Rome
   - ♦ Observe characteristics considered "classic" – emphasis on balance and proportion, idealization of human form in
     The Parthenon and the Pantheon
     The Discus Thrower and *Apollo Belvedere*

b. Gothic Art (ca. 12-15th centuries)
   - ♦ Briefly review the religious inspiration and characteristic features of Gothic cathedrals.

c. The Renaissance (ca. 1350-1600)
   - ♦ Briefly review main features of Renaissance art (revival of classical subjects and techniques, emphasis on humanity, discovery of perspective) and examine representative works, including
     Raphael, *The School of Athens*
     Michelangelo, *David* (review from grade 5)

d. Baroque (ca. 17th century)
   - ♦ Note the dramatic use of light and shade, turbulent compositions, and vivid emotional expression in
     El Greco, *View of Toledo* (also known as *Toledo in a Storm*)
     Rembrandt: a self-portrait, such as *Self-Portrait, 1659*

e. Rococo (ca. mid- to late-17th century)
   - ♦ Note the decorative and "pretty" nature of Rococo art, the use of soft pastel colors, and the refined, sentimental, or playful subjects in
     Jean-Honoré Fragonard, *The Swing*

f. Neoclassical (ca. late 18th-early 19th century)
   - ♦ Note as characteristic of Neoclassical art the reaction against Baroque and Rococo, the revival of classical forms and subjects, belief in high moral purpose of art, and balanced, clearly articulated forms in
     Jacques Louis David, *Oath of the Horatii*

g. Romantic (ca. late 18th- 19th century)

- Note how Romantic art is in part a reaction against Neoclassicism, with a bold, expressive, emotional style, and a characteristic interest in the exotic or in powerful forces in nature, in
  Francisco Goya, *The Bullfight*
  Eugene Delacroix, *Liberty Leading the People*
  Caspar David Friedrich, *The Chalk Cliffs on Rugen*

h. Realism (ca. mid- to late-19th century)

- Note the Realist's characteristic belief that art should represent ordinary people and activities, that art does not have to be uplifting, edifying, or beautiful, in
  Jean Millet, *The Gleaners*
  Gustave Courbet, *The Stone Breakers*
- Become familiar with examples of American realism, including
  Winslow Homer, *Northeaster*
  Thomas Eakins, *The Gross Clinic*
  Henry O. Tanner, *The Banjo Lesson*

VIII. Music

Resources:

- Core Knowledge Music Collection, Grade 6, Core Knowledge Foundation

a. Elements of Music:

- Review as necessary from earlier grades:
  The orchestra and families of instruments (strings, wind, brass, percussion); keyboard instruments
  Vocal ranges: soprano, mezzo-soprano, alto; tenor, baritone, bass
- Recognize frequently used Italian terms:
  grave (very, very slow)
  largo (very slow)
  adagio (slow)
  andante (moderate)
  moderato (medium)
  allegro (fast)
  presto (very fast)

prestissimo (as fast as you can go)
ritardando and *accelerando* (gradually slowing down and getting faster)
crescendo and *decrescendo* (gradually increasing and decreasing volume)
legato (smoothly flowing progression of notes), *staccato* (crisp, distinct notes)

- Recognize introduction, interlude, and coda in musical selections.
- Recognize theme and variations.
- Identify chords [such as I (tonic), IV (subdominant), V (dominant); V7]; major and minor chords; chord changes; intervals (third, fourth, fifth).
- Understand what an octave is.
- Understanding the following notation and terms:
  names of lines and spaces in the treble clef; middle C
  treble clef, bass clef, staff, bar line, double bar line, measure, repeat signs
  whole note, half note, quarter note, eighth note
  whole rest, half rest, quarter rest, eighth rest
  grouped sixteenth notes
  tied notes and dotted notes
  sharps, flats, naturals
  Da capo [D.C.] *al fine*
  meter signature 4/4 or common time 2/4, 3/4, 6/8
  soft ***pp p mp*** loud ***mf f ff***

b. Baroque (ca. 1600-1750)

- Counterpoint, fugue, oratorio
- Johann Sebastian Bach: selections from *Brandenburg Concertos*, selections from *The Well Tempered Clavier*, selections from the *Cantatas* such as *BWV 80*, *BWV 140*, or *BWV 147*
- George Frederick Handel: selections from *Water Music*, "Hallelujah Chorus" from *The Messiah*

c. Classical (ca. 1750-1825)

- The classical symphony (typically in four movements)
  Wolfgang Amadeus Mozart, *Symphony No. 40*
- The classical concerto: soloist, cadenza
  Wolfgang Amadeus Mozart, *Piano Concerto No. 21*
- Chamber music: string quartet, sonata

Franz Joseph Haydn, *String Quartet Opus 76 No. 3, "Emperor"*
Ludwig van Beethoven, *Piano Sonata No. 14 ("Moonlight" Sonata)*

d. Romantic (ca. 1800-1900)
   - ♦ Beethoven as transitional figure: *Symphony No. 9* (fourth movement)
   - ♦ Romantic composers and works:
     Franz Schubert, lieder (art songs): *Die Forelle* ("The Trout"), *Gretchen am Spinnrade* ("Gretchen at the Spinning Wheel")
     Frederic Chopin: "Funeral March" from *Piano Sonata No. 2 in B flat minor*, *"Minute" Waltz*, *"Revolutionary" Etude in C minor*
     Robert Schumann, *Piano Concerto in A Minor*

IX. Latin 1A

Resources:

- *Wheelock's Latin*, 7th ed., Frederic M. Wheelock and Richard A. LaFleur

Supplementary Resources:

- Workbook for Wheelock's Latin, Paul Comeau and Richard A. LaFleur
- Thirty-Eight Latin Stories Designed to Accompany Wheelock's Latin, 5th ed., Anne Groton and James May
- *Classical Mythology & More: A Reader Workbook*, Marianthe Colakis and Mary Joan Masello
- *To Be a Roman: Topics in Roman Culture*, Margaret Brucia and Gregory Daugherty
- *Lingua Latina per se Illustrata, Pars I: Familia Romana*, Hans H. Ørberg
- *Lingua Latina per se Illustrata. Pars I: Latine Disco Student Manual*, Hans Ørberg

a. Chapter 1
   - ♦ Verbs
   - ♦ First and Second Conjugations
   - ♦ Adverbs
   - ♦ Reading and Translating

b. Chapter 2
   - ♦ First declension nouns and adjectives
   - ♦ Prepositions
   - ♦ Conjunctions
   - ♦ Interjections

c. Chapter 3
   - ♦ Second declension masculine nouns and adjectives

- Apposition
- Word Order

d. Chapter 4
   - Second declension neuters
   - Adjectives
   - Present of *sum*
   - Predicate nominatives
   - Substantives

e. Chapter 5
   - First and second conjugations
   - Future and imperfect
   - Adjectives in *–er*

f. Chapter 6
   - *Sum* and *possum*: complementary infinitive

g. Chapter 7
   - Third declension nouns

h. Chapter 8
   - Third conjugation: present system

i. Chapter 9
   - Demonstratives *hic*, *ille*, *iste*
   - Special *-ius* adjectives

j. Chapter 10
   - Fourth conjugation and *-iō* verbs of the third conjugation

Sixth Grade Curriculum Map

	August-September	October	November	December	January	February	March	April	May
Math (Primary Mathematics)	Lesson 1 (6A)	Lessons 2-3 (6A)	Lessons 3-4 (6A)	Lesson 5 (6A)	Lesson 1 (6B)	Lessons 2 (6B)	Lessons 3-4 (6B)	Lessons 4-5 (6B)	Lesson 6 (6B)
Literature	"If" Classical Mythology	Children's Homer	Children's Homer Macbeth 3 poems	Macbeth 2 poems	Scarlet Pimpernel 2 poems	Scarlet Pimpernel 2 poems	Prince and the Pauper 2 poems	Count of Monte Cristo 2 poems	Count of Monte Cristo 2 poems
Grammar (Well Ordered Language)	Review Four Kinds of Sentences Adverbs & Adjectives Direct Objects	Predicate Nominative & Adjectives Sensory Linking Verbs Prep. Phrases	Indirect Object Interrogative Pronouns & Adverbs Relative Clauses	Reflexive, Intensive, & Indefinite Pronouns Adverbial Clauses	Participles Participle Phrases	Gerunds Gerund Phrases	Infinitives Infinitive Phrases	Appositives Noun Clauses	Punctuation Review
Composition	Informative Introductory Paragraph	Informative Body Paragraphs	Informative Conclusion Paragraph	Narrative Introductory Paragraph	Narrative Body Paragraphs	Narrative Conclusion Paragraph	Persuasive Introductory Paragraph	Persuasive Body Paragraphs	Persuasive Conclusion Paragraph
Science	Plate Tectonics Alfred Wegener	Energy Marie Curie	Heat & Heat Transfer	Energy Transfer Lewis Latimer James P. Joule	Astronomy Isaac Newton	Human Body: Circulatory & Lymphatic Systems	Immune System & Diseases Alexander Fleming	Oceans	Oceans
History & Geography	Deserts Judaism & Christianity	Ancient Greece	Ancient Rome Enlightenment	French Revolution	French Revolution	Industrialism, Capitalism, & Socialism	Latin America	Immigration Industrialization & Urbanization	Industrialization & Urbanization Reformers
Art	Classical	Gothic	Renaissance	Baroque	Rococo	Neoclassical	Romantic	Realism	
Music	Basic Notation and Elements	Baroque Bach	Classical Mozart	Handel	Chamber music Haydn	Beethoven Romantic	Schubert	Chopin	Schumann
Latin	Wheelock Ch. 1	Chapter 2	Chapter 3-4	Chapter 5	Chapter 6	Chapter 7	Chapter 8	Chapter 9	Chapter 10

Seventh Grade

I. Grammar & Composition

Resources:

- *Get Smart: Grammar through Sentence Diagramming*, Elizabeth O'Brien
- *Sentence Diagramming Reference Manual: How to Diagram Anything*, Elizabeth O'Brien
- *Sentence Diagramming Exercises: An Introduction to Sentence Diagramming*, Elizabeth O'Brien
- *Elements of Style,* Strunk & White

a. Sentence Diagramming
b. 8 parts of speech
c. Clause: independent vs. dependent clauses, adverbial clauses, noun clauses
d. Verbals: participle, participle phrase, gerund, gerund phrase, infinitive, infinitive phrase
e. Writing and editing process
    - ♦ Outlines
    - ♦ Drafts
    - ♦ Rhetorical Polishing
    - ♦ Citations, use of quotations

II. Literature

Teacher Resources:

- Romeo & Juliet DVD, Globe Theatre Production

Student Resources:

- *Realms of Gold, Vol. II*, Core Knowledge Foundation
- *Cyrano de Bergerac: A Heroic Comedy in Five Acts*, Edmond Rostand
- *Fahrenheit 451*, Ray Bradbury
- *Romeo and Juliet*, William Shakespeare
- *The Call of the Wild*, Jack London
- *The Strange Case of Dr. Jekyll and Mr. Hyde*, Robert Louis Stevenson
- *A Christmas Carol,* Charles Dickens

a. Poetry
    - ♦ Poems:

      Realms of Gold, Vol. II

      Annabel Lee, Edgar Allen Poe

Because I could not stop for Death, Emily Dickinson
The Charge of the Light Brigade, Alfred Lord Tennyson
The Chimney Sweeper (both versions), William Blake
The Cremation of Sam McGee, Robert Service
Dulce et Decorum Est, Wilfred Owen
Fire and Ice, Robert Frost
Harlem, Langston Hughes
Heritage, Countee Cullen
Life is Fine, Langston Hughes
Macavity: The Mystery Cat, T.S. Eliot
The Negro Speaks of Rivers, Langston Hughes
Nothing Gold Can Stay, Robert Frost
The Red Wheelbarrow, William Carlos Williams
This Is Just to Say, William Carlos Williams

- Elements of Poetry:

  Review: meter, iamb, couplet, rhyme scheme, free verse, onomatopoeia, alliteration
  Stanzas and refrains
  Forms: ballad, sonnet, lyric, narrative, limerick, haiku
  Types of rhyme: end, internal, slant, eye

b. Fiction

- Novels/Novellas

  Fahrenheit 451, Ray Bradbury
  The Call of the Wild, Jack London
  Dr. Jekyll and Mr. Hyde, Robert Louis Stevenson
  A Christmas Carol, Charles Dickens

- Short Stories

  Realms of Gold, Vol. II

  The Gift of the Magi, O. Henry
  The Necklace, Guy de Maupassant
  The Purloined Letter, Edgar Allen Poe
  The Secret Life of Walter Mitty, James Thurber
  The Tell-Tale Heart, Edgar Allan Poe

- Essays and Speeches

  Realms of Gold, Vol. II

  The Night the Bed Fell, James Thurber

  Blood Sweat and Tears, Winston Churchill *(can also be read in history)*

  Declaration of War on Japan, Franklin D. Roosevelt *(can also be read in history)*

- Autobiography

  Realms of Gold, Vol. II

  The Story of My Life, Helen Keller

- Drama

  Cyrano de Bergerac, Edmond Rostand

  Romeo and Juliet, William Shakespeare

  Elements of Drama: tragedy and comedy; aspects of conflict, suspense, and characterization; soliloquies and asides

- Literary Terms

  Irony: verbal, situational, dramatic

  Flashbacks and foreshadowing

  Hyperbole; oxymoron; parody

c. Foreign Phrases Commonly Used in English

ad hoc – concerned with a particular purpose; improvised (literally, "to the thing")

bona fides – good faith; sincere, involving no deceit or fraud

carpe diem – seize the day, enjoy the present

caveat emptor – let the buyer beware, buy at your own risk

de facto – in reality, actually existing

in extremis – in extreme circumstances, especially at the point of death

in medias res – in the midst of things

in toto – altogether, entirely

modus operandi – a method of procedure

modus vivendi – a way of living, getting along

persona non grata – an unacceptable or unwelcome person

prima facie – at first view, apparently; self-evident

pro bono public0 – for the public good

pro forma – for the sake of form, carried out as a matter of formality

quid pro quo – something given or received in exchange for something else

requiescat in pace, R.I.P. – may he or she rest in peace (seen on tombstones)

sic transit gloria mundi – thus passes away the glory of the world

sine qua non – something absolutely indispensable (literally, "which which not")

sub rosa – secretly

III. History and Geography

Teacher Resources:

- *A History of the American People*, Paul Johnson
- *America: The Last Best Hope*, Vol. I and II, William J. Bennett
- *World History by Era*, Volumes 7, 8, and 9, various authors
- *Letters of a Nation*, Andrew Carroll
- *The First World War*, John Keegan
- *New Deal or Raw Deal? How FDR's Economic Legacy Has Damaged America*, Burt W. Folsom Jr.
- *The Second World War*, John Keegan

Student Resources:

- Packet of primary texts, Barney Charter School Initiative
- Selections from teacher resources (above)
- *All Quiet on the Western Front*, Erich Maria Remarque
- *My Early Life*, Winston Churchill (selections)
- *Animal Farm*, George Orwell
- *The Diary of a Young Girl*, Anne Frank (selections)

Fall Semester –

a. America Becomes a World Power
   - ♦ Expansion of the US Navy, Captain Alfred T. Mahan
   - ♦ US annexation of Hawaii
   - ♦ The Spanish-American War
   - ♦ Complications of imperialism: War with the Philippines, Anti-Imperialist League
   - ♦ Building the Panama Canal: "Roosevelt Corollary" to the Monroe Doctrine, "Speak softly and carry a big stick."

b. Geography of Western and Central Europe
   - ♦ Physical features

     Mountains: Alps, Apennines, Carpathians, Pyrenees

     Danube and Rhine Rivers

     Seas: Adriatic, Aegean, Baltic, Black, Mediterranean, North

- Population and natural resources
- Languages, major religions
- Legacy of Roman Empire: city sites, transportation routes
- Industrial Revolution leads to urbanization
- Scandinavia: comprised of Denmark, Norway, Sweden, sometimes also includes Finland and Iceland
  Cities: Copenhagen, Denmark; Oslo, Norway; Stockholm, Sweden; Helsinki, Finland
- United Kingdom: comprised of Great Britain (England, Scotland, Wales) and Northern Ireland
  Irish Sea, English Channel
  North Sea: gas and oil
  England: London, Thames River
  Scotland: Glasgow, Edinburgh
  Northern Ireland: Ulster and Belfast, Catholic-Protestant strife
  Ireland: Dublin (review from grade 6: famine of 1840s, mass emigration)
- France
  Alps, Mont Blanc
  Seine and Rhone Rivers
  Bay of Biscay, Strait of Dover
  Corsica (island)
  Major cities: Paris, Lyon, Marseilles
- Belgium, Netherlands (Holland), and Luxembourg
  Cities: Brussels, Amsterdam, Rotterdam, The Hague
- Germany
  Cities: Berlin, Bonn, Hamburg, Munich
  Ruhr Valley: mining region, industrial cities including Essen
  Largest population in Europe, highly urbanized
- Austria and Switzerland
  Mostly mountainous (the Alps)
  Cities: Vienna, Bern, Geneva
- Italy
  Apennines
  Sardinia and Sicily

Cities: Milan, Rome, Venice, Florence
Vatican City: independent state within Rome

- Iberian Peninsula: Spain and Portugal
  Cities: Madrid, Lisbon

c. World War I: "The Great War," 1914-1918

- National pride and greed as causes: European nationalism, militarism, and colonialism
  The British Empire: Queen Victoria
  Italy becomes a nation: Garibaldi
  German nationalism and militarism: Bismarck unifies Germany, war against France, France cedes Alsace-Lorraine to Germany
  European imperialism and rivalries in Africa
    Stanley and Livingstone
    British invade Egypt to protect Suez Canal
    French in North Africa
    Berlin Conference and the "scramble for Africa"
- Entangling defense treaties: Allies vs. Central Powers, Archduke Ferdinand assassinated
- The Western Front and Eastern Front, Gallipoli, Lawrence of Arabia
- War of attrition and the scale of losses: Battle of Marne (1914), new war technologies (e.g., machine guns, tanks, airplanes, submarines), trench warfare
- US Neutrality ends: sinking of the Lusitania, "Make the world safe for democracy"
- Armistice Day, Nov. 11, 1918, abdication of Kaiser Wilhelm II
- Treaty of Versailles
  New central European states and national boundaries
  German reparations and disarmament
- Woodrow Wilson's 14 Points
  League of Nations, concept of collective security

d. Geography of Russia

- Overview:
  Territorially the largest state in the world
  All parts exposed to Artic air masses

Little moisture reaches Russia, because of distance from Atlantic Ocean, and because Himalayas block movement of warm, moist air from south
Population concentrated west of Ural Mountains
Siberia: rich in resources
Mongolia: Russian-dominated buffer state with China
Few well-located ports
Rich oil and natural gas regions

- Physical features
  Volga and Don Rivers (connected by canal)
  Caspian Sea, Aral Sea (being drained by irrigation projects)
  Sea of Japan, Bering Strait
- Cities: Moscow, Petersburg (formerly Leningrad), Vladivostok, Volgograd (formerly Stalingrad)

e. The Russian Revolution
   - Tensions in the Russian identity: Westernizers vs. traditionalists
   - Revolution of 1905, "Bloody Sunday," Russo-Japanese War
   - The last czar: Nicholas II and Alexandra
   - Economic strains of World War I
   - Revolutions of 1917
     March Revolution ousts Czar
     October Revolution: Bolsheviks
   - Civil War: Bolsheviks defeat Czarist counterrevolution, Bolsheviks become the Communist Party, creation of the Soviet Union

f. America in the 1920s
   - Isolationism: restrictions on immigration, Red Scare, Sacco and Vanzetti, Ku Klux Klan
   - The "Roaring Twenties": flappers, prohibition and gangsterism, St. Valentine's Day Massacre, Al Capone
   - The Lost Generation: Ernest Hemingway, F. Scott Fitzgerald
   - Scopes "Monkey Trial"
   - Women's right to vote: 19th Amendment
   - Calvin Coolidge
   - "New Negro" movement, Harlem Renaissance
     African American exodus from segregated South to northern cities

W.E.B. Du Bois: The Souls of Black Folk, NAACP
Zora Neal Hurston, Countee Cullen, Langston Hughes
"The Jazz Age": Duke Ellington, Louis Armstrong
Marcus Garvey, black separatist movement

- Technological advances
  Henry Ford's assembly line production, Model T
  Residential electrification: mass ownership of radio, Will Rogers
  Movies: from silent to sound, Charlie Chaplin
  Pioneers of flight: Charles Lindbergh, Amelia Earhart
  Decline of rural population

Spring Semester –

g. The Great Depression
   - Wall Street stock market Crash of 1929, "Black Tuesday": margin trading, stock speculation
   - Hoover insists on European payment of war debts, Smoot-Hawley Tariff Act
   - Mass unemployment
     Agricultural prices collapse following European peace
     Factory mechanization eliminates jobs
     Bonus Army
     "Hoovervilles"
   - The Dust Bowl, "Okie" migrations
   - Radicals: Huey Long, American Communist Party, Sinclair Lewis

h. Roosevelt and the New Deal
   - Franklin Delano Roosevelt: "The only thing we have to fear is fear itself"
   - Eleanor Roosevelt
   - The New Deal
     Growth of unions: John L. Lewis and the CIO (Congress of Industrial Organizations), A. Philip Randolph, Memorial Day Massacre
     New social welfare programs: Social Security
     New regulatory agencies: Securities and Exchange Commission, National Labor Relations Board
     Tennessee Valley Authority

- Roosevelt's use of executive power: involvement in legislation, "Imperial Presidency", court-packing plan

i. The Rise of Totalitarianism in Europe
   - Italy: Mussolini establishes fascism; attack on Ethiopia
   - Germany
     Weimar Republic, economic repercussions of WWI
     Adolf Hitler and the rise of Nazi totalitarianism: cult of the *Führer* ("leader"), *Mein Kampf*
     Nazism and the ideology of fascism, in contrast to communism and democracy
     Racial doctrines of the Nazis: anti-Semitism, the concept of *Lebensraum* (literally, "living space") for the "master race," *Kristallnacht*
   - The Soviet Union
     Communist totalitarianism: Josef Stalin, "Socialism in one country"
     Collectivization of agriculture
     Five-year plans of industrialization
     The Great Purge
   - Spanish Civil War: Franco, International Brigade, Guernica

j. World War II in Europe and at Home, 1939-45
   - Hitler defies Versailles Treaty: reoccupation of Rhineland, *Anschluss*, annexation of Austria
   - Appeasement: Munich Agreement, "peace in our time"
   - Soviet-Nazi Nonaggression Pact (also called Molotov-Ribbentrop Pact, include secret protocols)
   - Blitzkrieg: invasion of Poland, fall of France, Dunkirk
   - Battle of Britain: Winston Churchill, "nothing to offer but blood, toil, tears, and sweat"
   - The Home Front in America
     American Lend-Lease supplies, Atlantic Charter
     America First movement
     US mobilization for war: desegregation of defense industries, "Rosie the Riveter," rationing, war bonds
     America races Germany to develop the atomic bomb: the Manhattan Project

- Hitler invades Soviet Union: battles of Leningrad and Stalingrad
- The Holocaust: "Final Solution," concentration camps (Dachau, Auschwitz), "Diary of a Young Girl" by Anne Frank (selections)
- North Africa Campaign: El Alamein
- D-Day: Allied invasion of Normandy, General Dwight Eisenhower
- Battle of the Bulge, bombing of Dresden
- Yalta Conference
- Surrender of Germany, Soviet Army takes Berlin

k. World War II in the Pacific, and the End of the War

- Historical background: Japan's rise to power

  Geography of Japan (review all topics from grade 5)

  Sea of Japan and Korea Strait

  High population density, very limited farmland, heavy reliance on imported raw materials and food

  End of Japanese isolation, Commodore Matthew Perry

  Meiji Restoration: end of feudal Japan, industrialization and modernization

  Japanese imperialism: occupation of Korea, invasion of Manchuria, Rape of Nanking

  Japanese-Soviet neutrality treaty
- Pearl Harbor, Dec. 7, 1941: "A day that will live in infamy."
- Internment of Japanese-Americans
- Fall of the Philippines: Bataan Death March, General Douglas MacArthur, "I shall return."
- Battle of Midway
- Island amphibious landings: Guadalcanal, Iwo Jima
- Surrender of Japan

  Atom bombs dropped on Hiroshima and Nagasaki, the Enola Gay

  US dictates pacifist constitution for Japan, Emperor Hirohito
- Potsdam Conference, Nuremberg war crimes trials
- Creation of the United Nations: Security Council, Universal Declaration of Human Rights

l. Geography of the United States

- Physical features

General forms: Gulf/Atlantic coastal plain, Appalachian highlands and Piedmont, Midwest lowlands, Great Plains, Rocky Mountains, Intermountain Basin and Range, Pacific coast ranges, Artic coastal plain

Mountains: Rockies, Appalachians, Sierra Nevada, Cascades, Adirondacks, Ozarks

Peaks: McKinley, Rainier, Whitney

Main water features: Gulf of Mexico, Chesapeake Bay, San Francisco Bay, Puget Sound, Great Salt Lake, Great Lakes (Erie, Huron, Michigan, Ontario, Superior)

Rivers: Mississippi, Missouri, Ohio, Colorado, Hudson, Columbia, Potomac, Rio Grande, Tennessee

Niagara Falls, Grand Canyon, Mojave Desert, Death Valley

- Political, economic, and social features

  The fifty states and their capitals (review); Washington, DC; Commonwealth of Puerto Rico; Virgin Islands; Guam

- Cities: Atlanta, Baltimore, Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Dallas, Denver, Detroit, Houston, Kansas City, Los Angeles, Memphis, Miami, Milwaukee, Minneapolis, New Orleans, Norfolk, Philadelphia, Phoenix, Pittsburgh, Portland, St. Louis, San Antonio, San Diego, San Francisco, Seattle, Tampa
- Population: expansion of settlement, population density
- Regions

  New England, Mid-Atlantic, Mountain States

  South: "Dixie," Mason-Dixon Line, Bible Belt

  Southwest: Sun Belt

  West Coast: San Andreas fault, California aqueduct system

  Coal, oil, and natural gas deposits

  Agricultural crop regions

- New York City

  Bronx, Brooklyn, Manhattan, Queens, Staten Island

  Broadway, Fifth Avenue, Madison Avenue, Park Avenue, Times Square, Wall Street

Central Park, Harlem, Greenwich Village

IV. Mathematics

Resources:

- *Dimensions Math: Common Core*, 7A & 7B, a Singapore Math Program
- *Dimensions Mathematics: Workbook* for 7A & 7B, a Singapore Math Program
- *Dimensions Mathematics: Workbook Solutions* for 7A & 7B, a Singapore Math Program
- *Dimensions Mathematics: Teaching Notes and Solutions* for 7A & 7B, a Singapore Math Program

Fall Semester –

a. Factors and Multiples
    - ♦ Prime factorization and exponential notation
    - ♦ Greatest common factor
    - ♦ Least common multiple
    - ♦ Square roots and cube roots

b. Real Numbers
    - ♦ Negative numbers and the number line
    - ♦ Addition and addition inverse
    - ♦ Subtraction and absolute value of the difference
    - ♦ Multiplication, division, and combined operations of integers
    - ♦ Rational numbers
    - ♦ Real numbers and use of calculators
    - ♦ Rounding numbers to decimal places

c. Introduction to Algebra
    - ♦ The use of letters in algebra
    - ♦ Evaluation of algebraic expressions and formulas
    - ♦ Writing algebraic expressions to represent real-world situations

d. Algebraic Manipulation
    - ♦ Like terms and unlike terms
    - ♦ Distributive law, addition, and subtraction of linear algebraic expressions
    - ♦ Simplification of linear algebraic expressions
    - ♦ Factorization by extracting common factors
    - ♦ Factorization by grouping terms

e. Simple Equations in One Variable
    - Simple linear equations in one variable
    - Equations involving parentheses
    - Simple fractional equations
    - Forming linear equations to solve problems

f. Ratio, Rate, and Speed
    - Ratios involving rational numbers
    - Average rate
    - Speed

g. Percentage
    - Meaning of percentage
    - Reverse percentages
    - Percentage increase and decrease
    - Discount and sales tax

h. Angles, Triangles, and Quadrilaterals
    - Points, lines, and planes
    - Angles
    - Perpendicular bisectors and angle bisectors
    - Triangles and Quadrilaterals

Spring Semester –

i. Number Patterns
    - Number patterns and sequences
    - General term of a sequence

j. Coordinates and linear graphs
    - Cartesian coordinate system
    - Linear graphs
    - Slopes of linear graphs

k. Inequalities
    - Solving simple inequalities
    - More properties of inequalities
    - Simple linear inequalities
    - Applications of simple inequalities

l. Perimeters and areas of plane figures
    - Perimeters and areas of a square, a rectangle, and a triangle
    - Circumference and area of a circle
    - Area of a parallelogram and trapezoid
    - Perimeters and areas of composite plane figures

m. Volumes and Surface Areas of Solids
    - Volumes and total surface areas of a cube, cuboid, and prism
    - Volumes and surface areas of composite solids

n. Proportions
    - Scale drawings
    - Map scale and calculation area
    - Direct proportion
    - Inverse proportion

o. Data Handling
    - Collection of data
    - Dot plots
    - Measure of center: mean and median
    - Mode

p. Probability of Simple Events
    - Set notation
    - Meaning of Probability
    - Sample Space

q. Probability of Combined Events
    - Probabilities of simple combined events
    - Mutually exclusive events
    - Independent events
    - Further probabilities

V. Science

Teacher resources:
- *Antoine Lavoisier*, Lisa Yount
- *Charles Darwin,* David C. King
- *Charles Darwin and the Beagle Adventure,* A. J. Wood
- *Dmitri Mendeleyev and the Periodic Table,* Susan Zannos
- *Gregor Mendel: And the Roots of Genetics,* Edward Edelson
- *Lise Meitner,* Janet Hamilton
- *Niels Bohr: Atomic Theorist,* Ray Spangenburg
- Science Explorer series (Teacher's Editions) *Earth's Changing Surface, Human Biology and Health*

Student Resources:
- Science Explorer series (Student and Teacher's Editions): *Cells and Heredity, Chemical Building Blocks, Chemical Interactions*

a. Atomic Structure

- Review (from grade 5): Structure of atoms: protons, neutrons, electrons

  Molecules

  Compounds are formed by combining two or more elements and have properties different from the constituent elements.

- Early theories of matter

  The early Greek theory of four elements: earth, air, fire, and water

  Later theories of Democritus: everything is made of atoms and nothing else ("atom" in Greek means that which can't be cut or divided); atoms of the same kind form a pure "element"

  Alchemy in the middle ages

- Start of modern chemistry

  Lavoisier and oxygen: the idea that matter is not gained or lost in chemical reactions

  John Dalton revives the theory of the atom

  Mendeleev develops the Periodic Table, showing that the properties of atoms of elements come in repeating (periodic) groups.

  Niels Bohr develops a model of the atom in shells that hold a certain number of electrons. Bohr's model, plus the discovery of neutrons, helped explain the Periodic Table: atomic number, atomic weight, isotopes.

- Biography: Antoine Lavoisier (chemist who discovered the process of oxidation)
- Biography: Dmitri Mendeleev (scientist who devised the periodic table)
- Biography: Niels Bohr (Bohr model of the atom)

b. Chemical Bonds and Reactions

- To get a stable outer shell of electrons, atoms either give away, take on, or share electrons.
- Chemical reactions rearrange the atoms and the electrons in elements and compounds to form chemical bonds.
- When single atoms combine with themselves or with other atoms, the result is a molecule.

  O_2 is a molecule of oxygen. NaCl is a molecule of salt, and because it has more than one element is called a compound.
- Ionic bond: Atoms like sodium that have just one or two extra electrons are very energetic in giving them away. Elements with the same number of extra or few electrons can join with each other to make an ionic bond (e.g., NaCl, table salt)
- Metallic bond: In the metallic bond, electrons are not given away between elements, but are arranged so that they are shared between atoms. Pure metals show this sharing, and the atoms can rearrange themselves in different ways, which explains why you can pound metals into different shapes.
- Biography: Lise Meitner (physicist who helped discover nuclear fission)

c. Chemistry of Food and Respiration

- Energy for most life on earth comes from the sun, typically from sun, to plants, to animals, back to plants.
- Living cells get most of their energy through chemical reactions.

  All living cells make and use carbohydrates (carbon and water), the simplest of these being sugars.

  All living cells make and use proteins, often very complex compounds containing carbon, hydrogen, oxygen, and many other elements.

  Making these compounds involves chemical reactions which need water, and take place in and between cells, across cell walls. The reactions also need catalysts called “enzymes.”

Many cells also make fats, which store energy and food.

- Energy in plants: photosynthesis

  Plants do not need to eat other living things for energy.

  Main nutrients of plants: the chemical elements nitrogen, phosphorus, potassium, calcium, carbon, oxygen, hydrogen (some from soil or the sea, others from the air)

  Photosynthesis, using chlorophyll, converts these elements into more plant cells and stored food using energy from sunlight.

  Leafy plants mainly get their oxygen dissolved in water from their roots, and their carbon mainly from the gas CO_2.

  Plant photosynthesis uses up CO_2 and releases oxygen.

- Energy in animals: respiration

  Animal chemical reactions do the opposite of plants – they use up oxygen and release CO_2.

  In animals the chief process is not photosynthesis but respiration, that is, the creation of new compounds through oxidation.

  Animals cannot make carbohydrates, proteins, and fats from elements. They must eat these organic compounds from plants or other animals, and create them through respiration.

  Respiration uses oxygen and releases CO_2, creating an interdependence and balance between plant and animal life.

- Human nutrition and respiration

  Humans are omnivores and can eat both plant and animal food.

  Human respiration, through breathing, gets oxygen to the cells through the lungs and the blood.

  The importance of hemoglobin in the blood.

- Human health

  While many other animals can make their own vitamins, humans must get them from outside.

  A balanced diet: the food pyramid or "MyPlate" for humans (review); identification of the food groups in terms of fats, carbohydrates, proteins, vitamins, and trace elements

- Biography: Dorothy Hodgkin (chemist who determined the structure of vitamin B12)

d. Cell Division and Genetics

- Cell division, the basic process for growth and reproduction

  Two types of cell division: mitosis (growth and asexual reproduction), meiosis (sexual reproduction)

  Asexual reproduction: mitosis; diploid cells (as in amoeba)

  Sexual reproduction: meiosis: haploid cells; combination of traits

  How change occurs from one generation to another: either mutation or mixing of traits through sexual reproduction

  Why acquired characteristics are not transmitted

- Gregor Mendel's experiments with purebred and hybrid peas

  Dominant and recessive genes

  Mendel's statistical analysis led to understanding that inherited traits are controlled by genes (now known to be DNA).

- Modern understanding of chromosomes and genes

  Double helix (twisted ladder) of DNA coding; how DNA makes new DNA

  How DNA sequence makes proteins

  Genetic engineering

  Modern researchers in genetics: Francis Crick, James Watson, Severo Ochoa, Barbara McClintock

- Biography: Gregor Mendel (Father of Genetics)

e. History of the Earth and Life Forms

- Paleontology

  Fossils as a record of the Earth's history and past life forms

  How fossils are formed, and types of fossils (mold, cast, trace, true-form)

- Geologic Time: age of the earth

  The age of the earth is about 4.6 billion years, based on geologic evidence and radioactive dating. Life has existed on earth for more than 3 billion years.

  How movements of the earth's plates have affected the distribution of organisms

- Geologic Time: organizing geologic time in four major eras

  Precambrian Era – earliest forms of life, such as bacteria and blue-green algae; later in the period, invertebrates such as jellyfish

Paleozoic Era – Pangaea; invertebrate life, such as trilobites, early in this era, followed by development of vertebrates later in the era, including fish; development of insects, amphibians, and the beginnings of reptiles; development of simple plants, such as mosses and ferns

Mesozoic Era – Pangaea separates into continents; "Age of Reptiles"; dinosaurs, flowering plants, small mammals and birds

Cenozoic (Present) Era – Ice Age; mammoths, gradual development of mammals, birds, and other animals recognizable today; humans; flowering plants, forests, grasslands

f. Evolution

- Evolution

  Evolution is the change in a population of organisms over time caused by both genetic change and environmental factors.

  Adaptation and mutation

  Charles Darwin: voyages of the *Beagle*; *Origin of Species* (1859)

- Natural Selection

  Natural selection as the mechanism of evolution: Darwin's theory that life forms better adapted to their current environment have a better chance of surviving and will pass on their traits to their offspring

  Trait variation and change from generation to generation

  Evidence for the theory of evolution includes comparative anatomy, geology, fossils, and DNA research.

- Extinction and Speciation

  Extinction occurs when an environment changes and a species is no longer adapted to it.

  New species can develop when part of the population becomes separated and evolves in isolation.

  Life forms have evolved from simple organisms in oceans through amphibians to higher forms such as primates.

- Biography: Charles Darwin (scientist known for theory of natural selection)

VI. Art

Resources:

- *Eyewitness Companions: Art*, Robert Cumming (DK Eyewitness)
- *Impressionism*, Jude Welton (Eyewitness Art)
- *Post-Impressionism*, Colin Wiggins (Eyewitness Art)
- *Pablo Picasso: A Retrospective*, The Museum of Modern Art, New York, compiled by Jane Fluegel, edited by William Rubin
- Various trade books with large prints of the art listed in the CK Sequence below.

a. Impressionism

- ♦ Examine characteristics of Impressionism in
  Claude Monet: Impressionism: *Sunrise*, *Bridge Over a Pool of Lilies*
  Pierre Auguste Renoir, *Luncheon of the Boating Party*
  Edgar Degas, a ballet painting such as *Dancing Class*
  Mary Cassatt, *The Boating Party*

b. Post-Impressionism

- ♦ Examine characteristics of Post-Impressionism in
  Paul Cezanne: a still life such as *Apples and Oranges*, a version of *Mont Sainte-Victoire*, *The Card Players*
  Georges Seurat and pointillism: *Sunday Afternoon on the Island of the Grande Jatte*
  Vincent van Gogh: *The Starry Night*, one of his *Sunflowers*, a self-portrait such as *Self-Portrait* [1889]
  Paul Gauguin: *Vision After the Sermon*, *Hail Mary (Ia Orana Maria)*
  Henri Toulouse-Lautrec, *At the Moulin Rouge*
  Art Nouveau as a pervasive style of decoration

c. Expressionism and Abstraction

- ♦ Examine representative artists and works, including
  Henri Matisse: *Madame Matisse*, *The Red Room*, cutouts such as *Beasts of the Sea*
  Edvard Munch, *The Scream*
  Marc Chagall, *I and the Village*
  Pablo Picasso's early works, including *Family of Saltimbanques*
- ♦ Cubism
  Pablo Picasso, *Les Demoiselles d'Avignon*

Marcel Duchamp, *Nude Descending a Staircase*

- ♦ Picasso after Cubism: *Girl Before a Mirror*, *Guernica*
- ♦ Other developers of abstraction:
  Vassily Kandinsky, *Improvisation 31 (Sea Battle)*
  Paul Klee, *Senecio* (also known as *Head of a Man*)
  Piet Mondrian, *Broadway Boogie Woogie*
  Salvador Dali and surrealism: *The Persistence of Memory*

d. Modern American Painting

- ♦ Examine representative artists and works, including
  Edward Hopper, *Nighthawks*
  Andrew Wyeth, *Christina's World*
  Georgia O'Keeffe, *Red Poppies*
- ♦ Regionalists, social realists, and genre painters
  Grant Wood, *American Gothic*
  Diego Rivera [Mexican], *Detroit Industry*
  Norman Rockwell, *Triple Self-Portrait*

VII. Music

Resources:

- Core Knowledge Music Collection, Grade 7, Core Knowledge Foundation

a. Elements of Music:

- ♦ Review as necessary from earlier grades:
  The orchestra and families of instruments (strings, wind, brass, percussion); keyboard instruments
  Vocal ranges: soprano, mezzo-soprano, alto; tenor, baritone, bass
- ♦ Recognize frequently used Italian terms:
  grave (very, very slow)
  largo (very slow)
  adagio (slow)
  andante (moderate)
  moderato (medium)
  allegro (fast)

presto (very fast)
prestissimo (as fast as you can go)
ritardando and *accelerando* (gradually slowing down and getting faster)
crescendo and *decrescendo* (gradually increasing and decreasing volume)
legato (smoothly flowing progression of notes), *staccato* (crisp, distinct notes)

- Recognize introduction, interlude, and coda in musical selections.
- Recognize theme and variations.
- Identify chords [such as I (tonic), IV (subdominant), V (dominant); V7]; major and minor chords; chord changes; intervals (third, fourth, fifth).
- Understand what an octave is.
- Understanding the following notation and terms:
  names of lines and spaces in the treble clef; middle C
  treble clef, bass clef, staff, bar line, double bar line, measure, repeat signs
  whole note, half note, quarter note, eighth note
  whole rest, half rest, quarter rest, eighth rest
  grouped sixteenth notes
  tied notes and dotted notes
  sharps, flats, naturals
  Da capo [D.C.] *al fine*
  meter signature 4/4 or common time 2/4, 3/4, 6/8
  soft ***pp p mp*** loud ***mf f ff***

b. Classical Music: Romantic Composers and Works
   - Johannes Brahms, *Symphony No. 1* (fourth movement)
   - Hector Berlioz, *Symphonie Fantastique*
   - Franz Liszt, *Hungarian Rhapsody No. 2* for piano
   - Richard Wagner, Overture to *Die Meistersinger von Nürnberg*

c. Classical Music: Music and National Identity
   - Antonín Dvořák, *Symphony No. 9* ("From the New World")
   - Edvard Grieg, *Peer Gynt Suites Nos. 1 and 2*
   - Peter Ilich Tchaikovsky, *1812 Overture*

d. American Musical Traditions
   - Blues
     Evolved from African-American work songs and spirituals

Twelve bar blues form

- Jazz

  African-American origins

  Terms: improvisation, syncopation, solo and soloist

  Ragtime: works of Scott Joplin (such as "The Entertainer" and "Maple Leaf Rag")

  Louis Armstrong: early recordings such as "Potato Head Blues," "West End Blues," or "St. Louis Blues"

  Duke Ellington: "Caravan," "Take the 'A' Train" [by Billy Strayhorn]

  Miles Davis: "So What"

  Influence of jazz on other music: George Gershwin's *Rhapsody in Blue*

VIII. Latin 1B

Resources:

- *Wheelock's Latin*, 7th ed., Frederic M. Wheelock and Richard A. LaFleur

Supplementary Resources:

- Workbook for Wheelock's Latin, Paul Comeau and Richard A. LaFleur
- Thirty-Eight Latin Stories Designed to Accompany Wheelock's Latin, 5th ed., Anne Groton and James May
- *Classical Mythology & More: A Reader Workbook*, Marianthe Colakis and Mary Joan Masello
- *To Be a Roman: Topics in Roman Culture*, Margaret Brucia and Gregory Daugherty
- *Lingua Latina per se Illustrata, Pars I: Familia Romana*, Hans H. Ørberg
- *Lingua Latina per se Illustrata. Pars I: Latine Disco Student Manual*, Hans Ørberg

a. Review: *Wheelock's Latin*, Chapters 1-10 (review should last for about the first quarter of the school year)
b. Chapter 11
   - Personal pronouns *ego*, *tū*, and *is*
   - Demonstratives *is* and *idem*
c. Chapter 12
   - The perfect active system
d. Chapter 13
   - Reflexive pronouns and possessives
   - Intensive pronoun

e. Chapter 14
    - I-Stem nouns of the third declension
    - Ablatives of means, accompaniment, and manner

f. Chapter 15
    - Numerals
    - Genitive of the whole
    - Ablative with numerals and ablative of time

g. Chapter 16
    - Third declension adjectives

h. Chapter 17
    - The relative pronoun

i. Chapter 18
    - First and second conjugations: present system passive
    - Ablative of agent

j. Chapter 19
    - Perfect passive system
    - Interrogative pronouns and adjectives

k. Chapter 20
    - Fourth declension
    - Ablatives of place from which and separation

l. Chapter 21
    - Third and fourth conjugations: present system passive

m. Chapter 22
    - Fifth declension
    - Ablative of place where and summary of ablative uses

Eighth Grade

I. Grammar & Composition

Resources:

First year Schools

- *Get Smart: Grammar through Sentence Diagramming*, Elizabeth O'Brien
- *Sentence Diagramming Reference Manual: How to Diagram Anything*, Elizabeth O'Brien
- *Sentence Diagramming Exercises: An Introduction to Sentence Diagramming*, Elizabeth O'Brien
- *Elements of Style,* Strunk & White

Second Year Schools

- *Stay Smart Workbook: 188 Advanced Sentence Diagramming Exercises*, Elizabeth O'Brien
- *Get Smart: Grammar through Sentence Diagramming*, Elizabeth O'Brien (for first-year schools)
- *Sentence Diagramming Reference Manual: How to Diagram Anything*, Elizabeth O'Brien
- *Sentence Diagramming Exercises: An Introduction to Sentence Diagramming*, Elizabeth O'Brien
- *Elements of Style,* Strunk & White

a. Sentence Diagramming
b. 8 parts of speech
c. Clause: independent vs. dependent clauses, adverb clauses, noun clauses, adjective clauses
d. Verbals: participle, participle phrase, gerund, gerund phrase, infinitive, infinitive phrase
e. Writing and editing process
    - ♦ Outlines
    - ♦ Drafts
    - ♦ Rhetorical Polishing
    - ♦ Citations, use of quotations

II. Literature

Teacher Resources:

- *Much Ado About Nothing* (DVD), Globe Theatre Production

Student Resources:

- *Much Ado About Nothing*, William Shakespeare
- *Lord of the Flies*, William Golding
- *The Red Badge of Courage*, Stephen Crane
- *To Kill a Mockingbird*, Harper Lee
- *Realms of Gold, Vol. III*, Core Knowledge Foundation

a. Poetry

- Poems:

  Apparently with no surprise, Emily Dickinson

  Buffalo Bill's, e.e. cummings

  Chicago, Carl Sandburg

  Do Not Go Gentle into That Good Night, Dylan Thomas

  The Gift Outright, Robert Frost

  How do I love thee? Elizabeth Barrett Browning

  How They Brought the Good News From Ghent to Aix, Robert Browning

  I dwell in possibility, Emily Dickinson

  The Lake Isle of Innisfree, William B. Yeats

  Lucy Gray (or Solitude), William Wordsworth

  Mending Wall, Robert Frost

  Mr. Flood's Party, Edward Arlington Robinson

  My Heart Leaps Up, William Wordsworth

  Polonius's speech from *Hamlet*, "Neither a borrower nor a lender be…," William Shakespeare

  Ozymandias, Percy Bysshe Shelley

  Sonnet 18, "Shall I compare thee…," William Shakespeare

  Spring and Fall, Gerard Manley Hopkins

  A Supermarket in California, Allen Ginsberg

  Theme for English B, Langston Hughes

  We Real Cool, Gwendolyn Brooks

- Elements of Poetry: Review

  Meter, iamb, couplet, rhyme scheme, free verse, onomatopoeia, alliteration, assonance

Forms: ballad, sonnet, lyric, narrative, limerick, haiku

Stanzas and refrains

Types of rhyme: end, internal, slant, eye

Metaphor and simile: including extended and mixed metaphors

Imagery, symbol, personification

Allusion

b. Fiction

- Novels/Novellas

  Lord of the Flies, William Golding

  To Kill a Mockingbird, Harper Lee

  The Red Badge of Courage, Stephen Crane

- Short Stories

  Realms of Gold, Vol. III

  The Bet, Anton Chekov

  Dr. Heidegger's Experiment, Nathaniel Hawthorne

  God Sees the Truth But Waits, Leo Tolstoy

  An Honest Thief, Fyodor Dostoyevsky

  The Open Boat, Stephen Crane

- Elements of Fiction

  Review: plot and setting, theme, point of view in narration, conflict, suspense and climax

  Characterization: As delineated through a character's thoughts, words, and deeds; through the narrator's description; and through what other characters say

  Flat and round; static and dynamic

  Motivation

  Protagonist and Antagonist

  Tone and diction

- Essays and Speeches

  (can also be read in history)

  Realms of Gold, Vol. III

  Inaugural Address, John F. Kennedy

  Death of a Pig, E.B. White

  The Marginal World, Rachel Carson

- Autobiography
  Realms of Gold, Vol. III
  Selections (such as chapters 2 and 16) from *I Know Why the Caged Bird Sings*, Maya Angelou
- Drama
  Much Ado About Nothing, William Shakespeare
  Elements of Drama: tragedy and comedy; aspects of conflict, suspense, and characterization; soliloquies and asides; farce and satire; aspects of performance and staging, including actors, directors, sets, costumes, props, lighting, music, presence of an audience
- Literary Terms
  Irony: verbal, situational, dramatic
  Flashbacks and foreshadowing
  Hyperbole; oxymoron; parody

c. Foreign Phrases Commonly Used in English
au revoir – goodbye, until we see each other again
avant-garde – a group developing new or experimental concepts, a vanguard
bête noire – a person or thing especially dreaded and avoided [literally, "black beast"]
c'est la vie – that's life, that's how things happen
carte blanche – full discretionary power [literally, "blank page"]
cause célèbre - a very controversial issue that generates fervent public debate [literally, "a celebrated case"]
coup de grâce – a decisive finishing blow
coup d'état – overthrow of a government by a group
déjà vu – something overly familiar (literally, "already seen")
enfant terrible – one whose remarks or actions cause embarrassment, or someone strikingly unconventional [literally, "terrible child"]
fait accompli – an accomplished fact, presumably irreversible
faux pas – a social blunder [literally, "false step"]
Madame, Mademoiselle, Monsieur – Mrs., Miss, Mr.
merci – thank you
pièce de résistance – the principal part of the meal, a showpiece item

raison d'être – a reason for being

savoir-faire – the ability to say or do the right thing in any situation, polished sureness in society [literally, "to know (how) to do"]

tête-à-tête – private conversation between two people [literally, "head-to-head"]

III. History and Geography

Teacher Resources:

- *A History of the American People*, Paul Johnson
- *Modern Times: The World from the Twenties to the Nineties*, Rev. Ed., Paul Johnson
- *America: The Last Best Hope*, Vol. II and III, William J. Bennett

Resources:

- Packet of primary texts, Barney Charter School Initiative
- Selections from teacher resources (above)
- *One Day in the Life of Ivan Denisovich*, Aleksandr Solzhenitsyn

Fall Semester –

a. Civics: The Constitution – Principles and Structure of American Democracy

- Overview of the US Constitution
  James Madison and Alexander Hamilton
  Preamble
  Human nature, natural law, natural rights
  Equality, consent
  Representative government
  Rule of law
  Separation of powers, checks and balances
  Enumeration of powers, federalism
- Legislative branch: role and powers of Congress
  Bicameralism
  Legislative and representative duties
  Structure of the Congress, committee system, how a bill is passed
  Budget authority, "power of the purse"
  Power to impeach the president or federal judge
- Executive branch: role and powers of the presidency

Chief executive, cabinet departments, executive orders
Chief diplomat, commander-in-chief of the armed forces
Chief legislator, sign laws into effect, recommend laws, veto power
Appointment power, cabinet officers, federal judges

- Judiciary: role and powers of the courts
  Roll of courts in interpreting the Constitution; coequality of branches
  Legal process, criminal vs. civil cases, appellate courts
  Concepts of due process of law, equal protection
  Judicial review, Marbury v. Madison, Chief Justice John Marshall, Federalist 78.
- Bill of Rights
  Arguments for/against a Bill of Rights at the American founding
  Religious liberty
  Procedural rights
  State vs. Federal powers

b. Breakup of the British Empire

- Creation of British Commonwealth, independence for colonial territories
- Troubled Ireland: Easter Rebellion, Irish Free State
- Indian nationalism and independence
  Sepoy Rebellion
  Mahatma Gandhi, Salt March
  Partition of India into Hindu and Muslim states
- Geography of South Asia
  Himalayas, Mt. Everest, K-2
  Very high population densities and growth rates, food shortages
  Monsoons
  Rivers: Ganges, Indus, Brahmaputra
  Arabian Sea, Bay of Bengal
  Pakistan, Karachi
  Bangladesh, Sri Lanka
- Overview of India
  Legacy of British colonial rule: English language, rail system
  Second most populous country after China
  Subsistence agriculture

Caste system, "untouchables"

Delhi, Bombay, Calcutta, Madras

Longstanding tension between Hindus and Moslems

c. Creation of People's Republic of China

- China under European domination

  Opium Wars, Boxer Rebellion

  Sun Yat Sen

- Communists take power

  Mao Zedong: The Long March

  Defeat of nationalists led by Chiang Kai-Shek

  Soviet-Communist Chinese 30-year Friendship Treaty

- Geography of China

  Overview

  One-fifth of world population

  4,000-year-old culture

  Third largest national territory, regional climates

  Physical features

  Huang He (Yellow) River, Chang Jiange (Yangtze) River

  Tibetan Plateau, Gobi Desert

  Yellow Sea, East China Sea, South China Sea

  Great Wall, Grand Canal

  Social and economic characteristics

  Major cities: Beijing, Shanghai, Guangzhou (formerly Canton), Shenyang

  World's largest producer of coal and agricultural products, major mineral producer

  Off-shore oil reserves

  Multi-dialectical, including Mandarin, Cantonese

  Hong Kong, special coastal economic zones

  Taiwan, Taipei

d. The Cold War: Origins and Korean War

- USSR under Joseph Stalin: purges, gulags; read selections from *One Day in the Life of Ivan Denisovich* by Aleksandr Solzhenitsyn.

- Post-WWII devastation of Europe, Marshall Plan, Bretton Woods Conference
- Western fear of communist expansion, Soviet fear of capitalist influences
- Truman Doctrine, policy of containment of communism
  Formation of NATO, Warsaw Pact
  The "Iron Curtain" (Churchill)
  Berlin Airlift
  Eastern European resistance, Hungarian Revolution, Berlin Wall, Prague Spring
- The Korean War
  Inchon, Chinese entry, removal of MacArthur
  Partition of Korea, truce line near the 38th Parallel

e. America in the Cold War

- McCarthyism, House Un-American Activities Committee, "witch hunts"
  Hollywood Blacklist
  Spy cases: Alger Hiss, Julius and Ethel Rosenberg
- The Eisenhower Years
  Secret operations, CIA, FBI counterespionage, J. Edgar Hoover, U-2 incident
  Soviet Sputnik satellite, "Missile Gap," Yuri Gagarin
  Eisenhower's farewell speech, the "military-industrial complex"
- The Kennedy Years, "Ask not what your country can do for you…"
  Attack on organized crime, Robert F. Kennedy
  Cuban Missile Crisis, Fidel Castro, Bay of Pigs invasion
  Nuclear deterrence, "mutual assured destruction," Nuclear Test Ban Treaty
  Kennedy assassination in 1963, Lee Harvey Oswald, Warren Commission
- Space exploration, moon landing, Neil Armstrong
- American culture in the 1950s and 60s
  Levittown and the rise of the suburban lifestyle, automobile-centered city planning
  Influence of television
  Baby Boom generation, rock and roll, Woodstock festival, 26th Amendment

f. The Civil Rights Movement

- Segregation: *Plessy v. Ferguson*, doctrine of "separate but equal," "Jim Crow" laws
- Post-war steps toward desegregation
  Jackie Robinson breaks color barrier in baseball
  Truman desegregates Armed Forces
  Adam Clayton Powell, Harlem congressman
  Integration of public schools: *Brown v. Board of Education* (1954), Thurgood Marshall
- Montgomery Bus Boycott, Rosa Parks
- Southern "massive resistance"
  Federal troops open schools in Little Rock, Arkansas
  Murder of Medgar Evers
  Alabama Governor George Wallace "stands in schoolhouse door"
- Nonviolent challenges to segregation: "We shall overcome"
  Woolworth lunch counter sit-ins
  Freedom riders, CORE
  Black voter registration drives
  Martin Luther King, Jr.
  Southern Christian Leadership Conference
  March on Washington, "I have a dream" speech
  Letter from Birmingham Jail
  Selma to Montgomery March
- President Johnson and the civil rights movement
  The Great Society, War on Poverty, Medicare
  Civil Rights Act of 1964, Voting Rights Act of 1965, affirmative action
- African American militance
  Malcolm X
  Black Power, Black Panthers
  Watts and Newark riots
- Assassinations of Martin Luther King, Jr., and Robert F. Kennedy

Spring Semester –

g. The Vietnam War

- French Indochina War: Dien Bien Phu, Ho Chi Minh, Viet Cong
- Domino Theory
- US takes charge of the war, Special Forces, Tonkin Gulf Resolution
- Tet Offensive, My Lai Massacre
- Antiwar protests, Kent State, The Pentagon Papers, "hawks" and "doves"
- American disengagement, Nixon's "Vietnamization" policy, Kissinger, War Powers Act
- Watergate scandal, resignation of Nixon
- Vietnam, Hanoi, Ho Chi Minh City (formerly Saigon)

h. The Rise of Social and Environmental Activism

- Feminist movement, "women's liberation"
  Betty Friedan, National Organization for Women
  Roe v. Wade
  Failure of the Equal Rights Amendment
- Cesar Chavez, United Farm Workers
- American Indian Movement: second Wounded Knee, federal recognition of Indian right to self-determination
- Emergence of environmentalism
  Rachel Carson, *Silent Spring*
  Environmental Protection Agency, Endangered Species Act, Clean Air and Water Acts
  Disasters such as Love Canal, Three Mile Island, Chernobyl, Exxon Valdez

i. Geography of the Middle East

- Overview
  Heartland of great early civilizations, Nile River, Mesopotamia, "Fertile Crescent"
  Generally hot, arid conditions with thin, poor soils
  Generally speak Arabic, except in Turkey (Turkish), Israel (Hebrew), Iran (Persian)
  Predominant religion is Islam
  Sunni and Shiite sects
  Principal holy places: Makkah (also spelled Mecca) and Medina in Saudi Arabia
- Oil: world's most valuable commodity

Greatest known oil reserves concentrated around the Persian Gulf
Strait of Hormuz, shipping routes and national imports
Extraction of Arab oil required Western technology, which introduced competing cultural influences to Islam

- Egypt
  Most populous Arab country
  Nile River and delta, surrounded by inhospitable deserts
  Aswan Dam, Lake Nasser
  Cairo (largest city in Africa), Alexandria
  Suez Canal, Sinai Peninsula, Red Sea
- Israel
  Formed by the United Nations in 1948 as homeland for Jewish people
  Jerusalem: Holy city for Judaism (Wailing Wall, Temple Mount), Christianity (Church of the Holy Sepulcher), and Islam (Dome of the Rock)
  Tel Aviv, West Bank, Gaza Strip, Golan Heights
  Jordan River, Sea of Galilee, Dead Sea (lowest point on earth), Gulf of Aqaba
- Middle East states and cities
  Beirut, Lebanon; Amman, Jordan; Damascus, Syria; Baghdad, Iraq; Tehran, Iran; Kuwait; Riyadh and Makkah, Saudi Arabia
  Kurdish minority population in Iraq, Turkey, and Iran
- Turkey
  Istanbul (formerly Constantinople)
  Bosporus, Dardanelles
  Ataturk Dam controls upper Euphrates River

j. The Middle East and Oil Politics

- League of Nations' territorial mandates in Middle East
- Creation of Israel in 1948, David Ben-Gurion
- Suez Crisis, Gamal Abal Nasser
- Palestine Liberation Organization, Yasser Arafat
- Arab-Israeli Wars
  Six-Day War, Israel occupies West Bank, Gaza Strip, Golan Heights
  Yom Kippur War, OPEC oil embargo

- Camp David Peace Treaty
- Islamic fundamentalism, Iranian hostage crisis, Iran-Iraq War
- Persian Gulf War
- September 11, 2001 attacks
- Iraq War

k. The End of the Cold War

- The American Policy of Détente
  Diplomatic opening to China
  Strategic Arms Limitation Talks
  Jimmy Carter's human rights basis for diplomacy
- The end of détente
  Afghanistan War, US boycott of 1980 Olympic games
  Ronald Reagan, opposition to détente, ballistic missile defense
- Breakup of the USSR: History
  Arms race exhausts USSR economy
  Helsinki Accord on human rights, Andrei Sakharov
  Mikhail Gorbachev
  Solidarity labor movement, Lech Walesa
  Reunification of Germany, demolition of the Berlin Wall
- Geographical consequences of the breakup of the Soviet Union
  New European states from form Soviet Union: Belarus, Latvia, Lithuania, Moldova, Ukraine
  Newly independent Muslim states in Asia (with Russian minorities): Kazakstan, Kyrgyzstan, Turkmenistan, Uzbekistan
  Caucasus, mountainous region where Western and Islamic cultures meet: Armenia, Azerbaijan, Georgia
- Legacies of Soviet policies
  Numerous internal republics, many language distinctions
  Forced relocation of large numbers of ethnic minorities
  Environmental poisoning from industrial and farm practices
- China under Communism
  The Cultural Revolution
  Tiananmen Square

l. Contemporary Europe

- Toward European unity
  European Economic Community, "Common Market"
  European Parliament, Brussels, Maastricht Treaty on European Union
  France linked to Britain by the Channel Tunnel ("Chunnel")
  European Union; the Euro
- Conflict and change in Central Europe
  Geography of the Balkan region
    Ethnically fragmented, mixture of languages and religions
    Mountainous region, Danube River
    Seas: Adriatic, Ionian, Black, Aegean, Mediterranean
  Romania, Bulgaria, Greece, Albania
  Countries that emerged from the breakup of Yugoslavia: Slovenia, Croatia, Bosnia and Herzegovina, Macedonia
  Bosnian conflict
  "Balkanization"

m. The End of Apartheid in South Africa

- Background
  British and Dutch colonialism in South Africa, Cecil Rhodes, Afrikaners
  African resistance, Zulu wars, Shaka
  Boer Wars
  Union of South Africa, majority nonwhite population but white minority rule
  Apartheid laws
- African National Congress
  Nelson Mandela
- Internal unrest and external pressures (such as economic sanctions) force South Africa to end apartheid, Mandela released

n. Geography of Canada

- Ten provinces and three territories
- St. Lawrence River, Gulf of St. Lawrence, Grand Banks, Hudson Bay, McKenzie River, Mt. Logan
- Two official languages: English and French, separatist movement in Quebec

- Montreal, Toronto, Vancouver, Ottawa, most Canadians live within 100 miles of US
- Rich mineral deposits in Canadian Shield, grain exporter
- US and Canada share longest open international boundary, affinities between neighboring US and Canadian regions
- North American Free Trade Agreement (NAFTA)

o. Geography of Mexico

- Mexico City: home of nearly one-quarter of population, vulnerable to earthquakes
- Guadalajara, Monterrey
- Sierra Madre mountains, Gulf of California, Yucatan Peninsula
- Oil and gas fields
- Rapid population growth rate
- North American Free Trade Agreement (NAFTA), Maquiladoras

III. Mathematics

Resources:

- *A First Course in Algebra*, Arthur W. Weeks and Jackson B. Adkins (Chapters 1-14)

Fall Semester

a. Letters for Numbers (W&A Ch. 1) (3 Weeks)

- Sets of numbers: natural numbers, prime numbers, and integers
- Sentences and variables
- Axioms about numbers
- Order of operations
- Finding the value of an expression
- Fundamental operations: addition, subtraction, multiplication, and division
- The number line
- Combining like terms

- Reciprocals
- Fractions involving algebraic expressions

b. Equations (W&A Ch. 2) (3 Weeks)
   - What is an equation?
   - The distributive axiom
   - Laws of algebra and conditional equations
   - Practice on the fundamental operations
   - Properties of an equality
   - Solving an equation
   - Principle of substitution

c. Equalities Described by Words (W&A Ch. 3) (2 Weeks)
   - Translating relationships
   - Solution of word problems
   - Expressions and equations involving parentheses
   - Problems involving ratio and percentage

d. Formulas (W&A Ch. 4) (2 Weeks)
   - Formulas as equations
   - Implied relationships
   - Powers and exponents
   - Further work on substitution
   - Graph of a set of ordered pairs

e. Positive and Negative Numbers (W&A Ch. 5) (3 Weeks)
   - Basic properties of positive and negative numbers
   - Absolute value
   - Operations with signed numbers
   - The distributive axiom with positive and negative numbers
   - Solution of equations involving signed numbers
   - Equalities described by words

f. Simple Fractions and Equations Containing Fractions (W&A Ch. 6) (3 Weeks)
   - Fractional identities
   - Reducing fractions to lowest terms
   - Addition and subtraction of fractions
   - Solution of equations containing fractions

- Fractional inequalities

g. Pairs of Linear Equations (W&A Ch. 7) (2 Weeks)
   - Sets of ordered pairs of numbers and their graphs
   - Intersection of two sets of ordered pairs
   - Non-graphic methods of solving a pair of linear equations
   - Word problems involving pairs of equations
   - Pairs of equations involving fractions

Spring Semester

a. Related Changes (W&A Ch. 8) (2.5 Weeks)
   - Domain, range, function
   - Direct variation
   - Inverse variation
   - Related changes involving three or more variables

b. The Fundamental Operations with Polynomials (W&A Ch. 9) (2.5 Weeks)
   - Addition, subtraction, multiplication, and division of monomials
   - Addition, subtraction, multiplication and division of polynomials
   - Products of polynomials
   - Division by expression of more than one term

c. Factoring (W&A Ch. 10) (3 Weeks)
   - Reversing the order of the distributive axiom
   - Factors as divisors
   - Difference of two squares
   - Trinomials
   - Combinations of the various types of factors
   - Grouping terms

d. Quadratic Equations (W&A Ch. 11) (2 Weeks)
   - Polynomials of the second degree
   - Solution of a quadratic equation
   - Some factorable third- and fourth-degree equations
   - Problems leading to quadratic equations
   - The function defined by an equation of the form $y = ax^2 + bx + c$
   - Quadratic inequalities

e. Harder Fractions and Fractional Equations (W&A Ch. 12) (2 Weeks)
   - ♦ Complex fractions
   - ♦ Operations with fractions
   - ♦ Fractional equations

f. Irrational Numbers (W&A Ch. 13) (3 Weeks)
   - ♦ The set of real numbers
   - ♦ Operations with radicals
   - ♦ Computing a square root
   - ♦ Changing the form of a radical
   - ♦ Equations involving radicals
   - ♦ The Pythagorean Theorem and its applications

g. The General Quadratic Equation (W&A Ch. 14) (3 Weeks)
   - ♦ The form $ax^2 + c = 0$
   - ♦ The form $(x - k)^2 = m$
   - ♦ Solution by completing the square
   - ♦ Solution by formula

III. Science

Teacher Resources:

- *Albert Einstein*, Joyce Goldenstern
- *Benjamin Franklin*, Stephen Krensky
- *Nikola Tesla and the Taming of Electricity*, Lisa J. Aldrich
- *Poor Richard*, James Daugherty

Student Resources:

- *Conceptual Physics* by Paul Hewitt (Teacher's and Student Edition; Student Lab Manual)

Supplemental resources:

- Science Explorer series (Teacher's and Student Editions): *Motion, Forces, and Energy, Sound and Light, Electricity and Magnetism*

a. Motion
   - ♦ Velocity and Speed

     The velocity of an object is the rate of change of its position in a particular direction.

Speed is the magnitude of velocity expressed in distance covered per unit of time.

Changes in velocity can involve changes in speed or direction or both.

- Average Speed = total distance traveled divided by the total time elapsed

  Formula: Speed = Distance/Time (S = D/T)

  Familiar units for measuring speed: miles or kilometers per hour

b. Forces

- The concept of force: force as a push or pull on an object

  Examples of familiar forces (such as gravity, magnetic force)

  A force has both direction and magnitude.

  Measuring force: expressed in units of mass, pounds in English system, newtons in metric system

- Unbalanced forces cause changes in velocity.

  If an object is subject to two or more forces at once, the effect is the net effect of all forces.

  The motion of an object does not change if all the forces on it are in balance, having net effect of zero.

  The motion of an object changes in speed or direction if the forces on it are unbalanced, having net effect other than zero.

  To achieve a given change in the motion of an object, the greater the mass of the object, the greater the force required.

c. Density and Buoyancy

- When immersed in a fluid (i.e. liquid or gas), all objects experience a buoyant force.

  The buoyant force on an object is an upward (counter-gravity) force equal to the weight of the fluid displaced by the object.

  Density = mass per unit volume

  Relation between mass and weight (equal masses at same location have equal weights)

- How to calculate density of regular and irregular solids from measurements of mass and volume

  The experiment of Archimedes

- How to predict whether an object will float or sink

d. Work

- In physics, work is a relation between force and distance: work is done when force is exerted over a distance
  Equation: Work equals Force x Distance (W = F x D)
  Common units for measuring work: foot-pounds (in English system), joules (in metric system; 1 joule = 1 newton of force x one meter of distance)

e. Energy

- In physics, energy is defined as the ability to do work.
- Energy as distinguished from work
  To have energy, a thing does not have to move.
  Work is the transfer of energy.
- Two main types of energy: kinetic and potential
  Some types of potential energy: gravitational, chemical, elastic, electromagnetic
  Some types of kinetic energy: moving objects, heat, sound and other waves
- Energy is conserved in a system.
- Biography: Albert Einstein (physicist whose theories of relativity allowed great advancements in the study of space, matter, energy, time, and gravity)

f. Power

- In physics, power is a relation between work and time: a measure of work done (or energy expended) and the time it takes to do it.
  Equation: Power equals Work divided by Time (P = W/T), or Power = Energy/Time
  Common units of measuring power: foot-pounds per second, horsepower (in English system); watts, kilowatts (in metric system)

g. Electricity

- Basic terms and concepts (review from grade 4):
  Electricity is the charge of electrons in a conductor.
  Opposite charges attract, like charges repel.
  Conductors and insulators
  Open and closed circuits

Short circuit: sudden surge of amperage due to the reduction of resistance in a circuit; protection from short circuits is achieved by fuses and circuit breakers

Electrical safety

- Electricity as the charge of electrons

  Electrons carry negative charge; protons carry positive charge

  Conductors: materials like metals that easily give up electrons

  Insulators: materials like glass that do not easily give up electrons

- Static electricity

  A static charge (excess or deficiency) creates an electric field.

  Electric energy can be stored in capacitors (typically two metal plates, one charged positive and one charged negative, separated by an insulating barrier). Capacitor discharges can release fatal levels of energy.

  Grounding drains an excess or makes up a deficiency of electrons, because the earth is a huge reservoir of electrons. Your body is a ground when you get a shock of static electricity.

  Lightning is a grounding of static electricity from clouds.

- Flowing electricity

  Electric potential is measured in volts.

  Electric flow or current is measured in amperes: 1 ampere = flow of 1 coulomb of charge per second (1 coulomb = the charge of 6.25 billion billion electrons).

  The total power of an electric flow over time is measured in watts. Watts = amps x volts; amps = watts/volts; volts = watts/amps.

  The unit of electrical resistance is the ohm.

- Biography: Nikola Tesla (inventor and electrical engineer)
- Biography: Benjamin Franklin (inventor; experimented with electricity)

h. Magnetism and Electricity

- Earth's magnetism

  Earth's magnetism is believed to be caused by movements of charged atoms in the molten interior of the planet.

  Navigation by magnetic compass is made possible because the earth is a magnet with north and south magnetic poles.

- Connection between electricity and magnetism

  Example: move a magnet back and forth in front of a wire connected to a meter, and electricity flows in the wire. The reverse: electric current flowing through a wire exerts magnetic attraction.

  Spinning electrons in an atom create a magnetic field around the atom.

  Unlike magnetic poles attract, like magnetic poles repel.

  Practical applications of the connection between electricity and magnetism, for example:

  An electric generator creates alternating current by turning a magnet and a coil of wire in relation to each other; an electric motor works on the reverse principle.

  A step-up transformer sends alternating current through a smaller coil of wire with just a few turns next to a larger coil with many turns. This induces a higher voltage in the larger coil. A step-down transformer does the reverse, sending current through the larger coil and creating a lower voltage in the smaller one.

i. Electromagnetic Radiation and Light

- Waves and electromagnetic radiation

  Most waves, such as sound and water waves, transfer energy through matter, but light belongs to a special kind of radiation that can transfer energy through empty space.

- The electromagnetic spectrum

  From long waves, to radio waves, to light waves, to x-rays, to gamma rays

  Called “electromagnetic” because the radiation is created by an oscillating electric field which creates an oscillating magnetic field at right angles to it, which in turn creates an oscillating electric field at right angles, and so on, with both fields perpendicular to each other and the direction the wave is moving.

  The light spectrum: from infrared (longest) to red, orange, yellow, green, blue, violet (shortest)

  Speed in a vacuum of all electromagnetic waves including light: 300,000 km per second, or 186,000 miles per second; a universal constant, called *c*

- Refraction and reflection

  Refraction: the slowing down of light in glass causes it to bend, which enables lenses to work for television, photography, and astronomy

  How Isaac Newton used the refraction of a prism to discover that white light was made up of rays of different energies (or colors)

  Reflection: concave and convex reflectors; focal point

- Biography: Charles Steinmetz (scientist who made key advances in electric power)
- Biography: James Maxwell (scientist who created mathematical equations that expressed the basic laws of light, electricity, and magnetism)

j. Sound Waves

- General properties of waves

  Waves transfer energy by oscillation without transferring matter; matter disturbed by a wave returns to its original place.

  Wave properties: wavelength, frequency, speed, crest, trough, amplitude

  Two kinds of waves: transverse (for example, light) and longitudinal (for example, sound)

  Common features of both kinds of waves:

  Speed and frequency of wave determine wavelength.

  Wave interference occurs in both light and sound.

  Doppler effect occurs in both light and sound.

- Sound waves: longitudinal, compression waves, made by vibrating matter, for example, strings, wood, air

  While light and radio waves can travel through a vacuum, sound waves cannot. Sound waves need a medium through which to travel.

  Speed

  Sound goes faster through denser mediums, that is, faster through solids and liquids than through air (gases).

  At room temperature, sound travels through air at about 340 meters per second (1,130 feet per second).

  Speed of sound = Mach number

  Supersonic booms; breaking the sound barrier

  Frequency

Frequency of sound waves measured in "cycles per second" or Hertz (Hz)

Audible frequencies roughly between 20 and 20,000 Hz

The higher the frequency, the higher the subjective "pitch"

Amplitude

Amplitude or loudness is measured in decibels (dB).

Very loud sounds can impair hearing or cause deafness.

Resonance, for example, the sound board of a piano, or plates of a violin

IV. Art

Resources:

- *Eyewitness Companions: Art*, Robert Cumming (DK Eyewitness)
- *Eyewitness Companions: Architecture*, Jonathan Glancey (DK Eyewitness)
- Various trade books with large prints of the art listed in the CK Sequence below.

a. Painting since World War II

- Examine representative artists and works, including

  Jackson Pollock and Abstract Expressionism: *Painting, 1948*

  Willem de Kooning, *Woman and Bicycle*

  Mark Rothko, *Orange and Yellow*

  Helen Frankenthaler, *Wales*

  Andy Warhol and Pop Art: *Campbell's Soup Can*, *Marilyn*

  Roy Lichtenstein, *Whaam*

  Romare Bearden, *She-Ba*

  Jacob Lawrence, a work from his *Builder* series or *Migration of Negroes* series

b. Photography

- Examine representative artists and works, including

  Edward Steichen, *Rodin with His Sculptures "Victor Hugo" and "The Thinker"*

  Alfred Steiglitz, *The Steerage*

  Dorothea Lange, *Migrant Mother, California*

  Margaret Bourke-White, *Fort Peck Dam*

Ansel Adams, *Moonrise, Hernandez, New Mexico*
Henri Cartier-Bresson, *The Berlin Wall*

c. 20th-Century Sculpture

- Examine representative artists and works, including
  Auguste Rodin: *The Thinker*, *Monument to Balzac*
  Constantin Brancusi, *Bird in Space*
  Pablo Picasso, *Bull's Head*
  Henry Moore, *Two Forms*
  Alexander Calder, *Lobster Trap and Fish Tail*
  Louise Nevelson, *Black Wall*
  Claes Oldenburg, *Clothespin*
  Maya Lin, *Vietnam Veterans Memorial*

d. Architecture Since the Industrial Revolution

- Demonstrations of metal structure: Crystal Palace, Eiffel Tower
- First skyscrapers: "Form follows function"
  Louis Sullivan: Wainwright Building
  Famous skyscrapers: Chrysler Building, Empire State Building
- Frank Lloyd Wright: Fallingwater, Guggenheim Museum
- The International Style
  Walter Gropius, Bauhaus Shop Block
  Le Corbusier: Villa Savoye, Unite d'Habitation, Notre Dame du Haut
  Ludwig Mies van der Rohe and Philip Johnson: Seagram Building

V. Music

Resources:

- Core Knowledge Music Collection, Grade 8, Core Knowledge Foundation

a. Elements of Music:

- Review as necessary from earlier grades:
  The orchestra and families of instruments (strings, wind, brass, percussion); keyboard instruments
  Vocal ranges: soprano, mezzo-soprano, alto; tenor, baritone, bass
- Recognize frequently used Italian terms:
  grave (very, very slow)

largo (very slow)
adagio (slow)
andante (moderate)
moderato (medium)
allegro (fast)
presto (very fast)
prestissimo (as fast as you can go)
ritardando and *accelerando* (gradually slowing down and getting faster)
crescendo and *decrescendo* (gradually increasing and decreasing volume)
legato (smoothly flowing progression of notes), *staccato* (crisp, distinct notes)

- Recognize introduction, interlude, and coda in musical selections.
- Recognize theme and variations.
- Identify chords [such as I (tonic), IV (subdominant), V (dominant); V7]; major and minor chords; chord changes; intervals (third, fourth, fifth).
- Understand what an octave is.
- Understanding the following notation and terms:
  names of lines and spaces in the treble clef; middle C
  treble clef, bass clef, staff, bar line, double bar line, measure, repeat signs
  whole note, half note, quarter note, eighth note
  whole rest, half rest, quarter rest, eighth rest
  grouped sixteenth notes
  tied notes and dotted notes
  sharps, flats, naturals
  Da capo [D.C.] *al fine*
  meter signature 4/4 or common time 2/4, 3/4, 6/8
  soft ***pp p mp*** loud ***mf f ff***

b. Non-Western Music

- Become familiar with scales, instruments, and works from various lands, for example: 12-tone scale, sitar from India, Caribbean steel drums, Japanese koto

c. Classical Music: Nationalists and Moderns

- Music and National Identity: Composers and works
  Jean Sibelius, *Finlandia*

Béla Bartók, folk-influenced piano music such as *Allegro barbaro*, selections from *Mikrokosmos* or *For Children*
Joaquin Rodrigo, *Concierto de Aranjuez*
Aaron Copland, *Appalachian Spring (Suite)*

- Modern Music: Composers and works
  Claude Debussy, *La Mer*, first movement, "De l'aube à midi sur la mer"
  Igor Stravinsky, *The Rite of Spring*, first performed in Paris, 1913

d. Vocal Music: Opera
   - Terms: overture, solo, duet, trio, quartet, chorus, aria, recitative
   - Composers and works:
     Gioacchino Rossini, from *The Barber of Seville*: Overture and "Largo al factotum"
     Guiseppe Verdi, from *Rigoletto*: aria, "Questa o quella"; duet, "Figlia! …Mio padre!"; aria, "La donna è mobile"; quartet, "Bella figlia dell'amore"

e. Vocal Music: American Musical Theater
   - Composers and popular songs:
     Irving Berlin, "There's No Business Like Show Business," "Blue Skies"
     George M. Cohan, "Give My Regards to Broadway," "Yankee Doodle Dandy"
     Cole Porter, "Don't Fence Me In," "You're the Top"
   - Broadway musicals: selections including
     Jerome Kern, *Showboat*: "Ole Man River"
     Rodgers and Hammerstein, *Oklahoma!*: "Oh What a Beautiful Mornin'," "Oklahoma"
     Leonard Bernstein and Stephen Sondheim, *West Side Story*: "Maria," "I Feel Pretty"

VI. Latin 2

Resources:

- *Wheelock's Latin*, 7th ed., Frederic M. Wheelock and Richard A. LaFleur

Supplementary Resources:

- Workbook for Wheelock's Latin, Paul Comeau and Richard A. LaFleur
- Wheelock's Latin Reader: Selections from Latin Literature, 2nd ed., Frederick M. Wheelock and Richard A. LaFleur
- Thirty-Eight Latin Stories Designed to Accompany Wheelock's Latin, 5th ed., Anne Groton and James May
- *New Latin Grammar*, J.H. Allen and J.B. Greenough
- *Lingua Latina per se Illustrata, Pars I: Familia Romana*, Hans H. Ørberg
- *Lingua Latina per se Illustrata. Pars I: Latine Disco Student Manual*, Hans Ørberg
- *Literature in the Roman World*, Oliver Taplin
- *A Handbook of Latin Literature*, H.J. Rose and E. Courtney

a. Review: Wheelock's Latin, Chapters 1-22 (review for about the first quarter of the school year)
b. Chapter 23
    - ♦ Participles
c. Chapter 24
    - ♦ Ablative absolute
    - ♦ Passive periphrastic
    - ♦ Dative of agent
d. Chapter 25
    - ♦ Infinitives
    - ♦ Indirect statement
e. Chapter 26
    - ♦ Comparison of adjectives
    - ♦ Ablative of comparison
f. Chapter 27
    - ♦ Irregular comparison of adjectives
g. Chapter 28
    - ♦ Subjunctive mood
    - ♦ Present subjunctive
    - ♦ Jussive and purpose clauses
h. Chapter 29

- Imperfect subjunctive
- Present and imperfect subjunctive of *Sum* and *Possum*
- Result clauses

i. Chapter 30
- Perfect and pluperfect subjunctive
- Indirect questions
- Sequence of tenses

j. Chapter 31
- *Cum* clauses
- *Ferō*

k. Chapter 32
- Formation and comparison of adverbs
- *Volō*, *mālō*, *nōlō*
- Proviso clauses

Ninth Grade

I. Composition

Teacher Resource:

- *Grammar by Diagram,* Cindy Vito

Student Resource:

- *Elements of Style,* Strunk & White

a. Review
   - ♦ Sentence Diagramming
   - ♦ 8 parts of speech

b. Writing and editing process
   - ♦ Outlines
   - ♦ Drafts
   - ♦ Rhetorical Polishing
   - ♦ Citations, use of quotations

II. Literature

Teacher Resources:

- *Metamorphoses: Selected Stories in Verse*, Ovid (Mendelbaum Translation)
- *The Iliad of Homer,* lecture series by Dr. Elizabeth Vandiver
- *Greek Tragedy,* lecture series by Dr. Elizabeth Vandiver
- *The Aeneid of Virgil,* lecture series by Dr. Elizabeth Vandiver
- Julius Caesar DVD, Royal Shakespeare Production

Student Resources:

- *The Odyssey* and *The Iliad*, Homer
- *Oedipus Rex and Antigone*, Sophocles
- *The Aeneid*, Virgil
- *Julius Caesar*, William Shakespeare

a. Summer Reading—*The Odyssey*

b. Fall Semester:

- *The Iliad*
- *Oedipus Rex* and *Antigone*

c. Spring Semester:

- *Metamorphoses* (Book 1 through the Flood Myth)
- *The Aeneid*
- *Julius Caesar*

III. History

Resources:

- *Ancient Greece: From Prehistoric to Hellenistic Times*, Thomas R. Martin
- *Ancient Rome: An Introductory History*, Paul A. Zoch
- *Western Heritage Reader* from Hillsdale College
- *The History of the Ancient World: From the Earliest Accounts to the Fall of Rome*, Susan Wise Bauer
- *Greek Lives* and *Roman Lives,* Plutarch
- *The Landmark Herodotus* and *The Landmark Thucydides*, ed. by Robert Strassler
- Additional primary texts: selections from *The Republic* (Plato), *Nicomachean Ethics* (Aristotle), "The Apology of Socrates," the Bible (likely the King James Version), and other sources chosen at teacher discretion.

Fall Semester –

a. Early History
   - Ancient Civilizations: Egypt, Babylon, Assyria, Persia
   - Flood Myths: Epic of Gilgamesh, Genesis
   - Code of Hammurabi

b. The Hebrews
   - Events: Creation, Exodus, Fall of Israel, Fall of Judah
   - People: Abraham, Moses, Saul, Samuel, David, Solomon
   - Covenant, Law, Ten Commandments

c. Ancient Greece
   - Cities: Athens, Sparta
   - Myths: Odyssey, Iliad, Pantheon
   - Ideas: oikos, logos, telos
   - People: Lycurgus, Lysander, Pericles, Solon, Sophocles, Aristophanes, Socrates, Plato, Aristotle, Xenophon, Herodotus, Alexander the Great, Philip of Macedon, Thucydides

- Philosophy: Analogy of the Cave (*The Republic*), The Apology of Socrates, Book I of the *Nicomachean Ethics*.
- Wars/Battles: Thermopylae, Marathon, Persian War, Peloponnesian War

Spring Semester –

d. Roman Republic
   - Founding of Rome: in myth (Romulus and Remus, Aeneas) and in history (reforming of tribes)
   - Republican institutions: senate, consul, tribunes, patricians, plebeians
   - People: Cicero, Cato the Elder, Hannibal, Scipio, Sulla, Pompey, the Gracchi
   - Schools of Philosophy: Stoicism, Epicureanism
   - Punic Wars, Gallic Wars
   - Histories: Livy, Polybius

e. Roman Empire
   - People: Julius Caesar, Brutus, Cleopatra, Mark Antony, Augustus, Marcus Aurelius, Diocletian, Nero, Plutarch, Virgil, Ovid, Horace
   - Histories: Tacitus, Seutonius

f. Christianity and the Early Christian Church
   - People: Mary, John the Baptist, Jesus, Disciples, Apostles, Apostle Paul
   - Events: Life of Jesus, Crucifixion, Ascension, Paul's Conversion, spread of the early church
   - Texts: Sermon on the Mount, various parables (Prodigal Son, etc.), Feeding of the 5000

IV. Mathematics

Resources:

- *A Course in Geometry* (including the Solutions Manual and the Teachers Edition), Arthur W. Weeks and Jackson B. Adkins; chapters 1-16, 18 and 20; chapters 17, 19, 21 if time allows

Fall Semester

a. Basic Ideas of Geometry (W&A Ch. 1) (2 Weeks)
   - Methods of reasoning

- Importance of definitions
- Undefined terms: point, line, plane, space
- Properties and definitions: line segment, ray, angle
- EUCLID: Book 1 Definitions, Postulates, Common Notions
- Geometric solids
- Congruence

b. Line Segments and Angles as Numerical Quantities (W&A Ch. 2) (2 Weeks)
   - Length of a line segment
   - Sum and difference of line segments
   - Postulates; postulates about length
   - Midpoint properties
   - Measure of an angle: Degrees, minutes, seconds
   - Congruent angles and equal angles
   - Classification of angles: straight, right, obtuse, acute, supplementary, complementary; perpendicular lines
   - Postulates about angle measures
   - Angle bisector properties

c. Proof (W&A Ch. 3) (3 Weeks)
   - The "If-then" pattern
   - The relation "is equal to"
   - Transitive property of inequality
   - Substitution
   - Algebraic properties of equality and inequality
   - Postulates for points, lines, and planes
   - Angles formed by intersecting lines

d. Triangles (W&A Ch. 4) (2 Weeks)
   - Definition of a triangle
   - Length sides of a triangle
   - Congruent triangles
   - Minimum conditions for congruence
   - EUCLID: Book 1 Propositions 4, 8, 26
   - Corresponding parts
   - Isosceles triangles

- EUCLID: Book 1 Propositions 5, 6

e. Constructions (W&A Ch. 5) (1.5 Weeks)
   - Definition of a circle
   - Postulates for circles
   - Construction: bisecting a given angle, perpendicular lines, bisecting line segments, copying a given angle
   - EUCLID: Book 1 Propositions 2, 9, 10, 23
   - Important lines in a triangle; constructing triangles

f. Perpendicular Lines and Planes (W&A Ch. 6) (2 Weeks)
   - Theorems and corollaries regarding perpendicular lines
   - EUCLID: Book 1 Propositions 11, 12
   - Three-dimensional situations
   - Line perpendicular to a plane
   - Perpendicular planes
   - Projection of a line segment

g. Parallel Lines (W&A Ch. 7) (2 Weeks)
   - Indirect proof
   - Parallel lines
   - Parallel lines and angle relationships
   - Indirect proof and contrapositive statements
   - EUCLID: Book 1 Propositions 27, 28, 29, 30, 31

h. Polygons and Angle Relationships (W&A Ch. 8) (2 Weeks)
   - Polygons
   - EUCLID: Book 1 Proposition 32
   - Classification of polygons
   - The law of reflection of light
   - The sum of the angles of a polygon
   - Congruence

i. Quadrilaterals (W&A Ch. 9) (1.5 Weeks)
   - Quadrilateral
   - Parallelogram
   - Trapezoids
   - Sufficient conditions for a parallelogram

- EUCLID: Book 1 Propositions 33, 34, 35
- Construction of quadrilaterals

Spring Semester

j. Parallel Lines and Planes (W&A Ch. 10) (1.5 Weeks)
   - Parallel planes
   - Distance between parallel planes
   - Parallel lines
   - Solids

k. Further Study of the Triangle (W&A Ch. 11) (2 Weeks)
   - Applications of the midpoint theorems
   - Physical property of the centroid
   - Concurrence of other sets of lines in a triangle
   - Circumcircle of a triangle
   - EUCLID: Book 3 Propositions 4, 5
   - Orthocenter

l. Inequalities (W&A Ch. 12) (1.5 Weeks)
   - Order of points on a line
   - Order of size of numbers
   - Inequalities; number properties
   - Inequalities in geometry

m. Ratio and Proportion (W&A Ch. 13) (2 Weeks)
   - Definitions of ratio and proportion
   - Properties of proportions
   - Ratio of line segments
   - Proportional division
   - Incommensurable line segments
   - Internal and external division of a line segment

n. Similar Figures (W&A Ch. 14) (2 Weeks)
   - Similar polygons, similar triangles
   - Using two or more proportions
   - Proportions in a right triangle
   - The Pythagorean Theorem

- EUCLID: Book 1 Proposition 47
- Problems in three dimensions

o. Areas and Volumes (W&A Ch. 15) (2 Weeks)
- Definition of area
- Area of a rectangle, triangles, and other polygons
- Area of similar figures
- Addition and subtraction of areas
- Prisms, pyramids, and other solids
- EUCLID: Book 11 Definitions

p. Using Coordinates in Geometry (W&A Ch. 16) (2 Weeks)
- Geometry and algebra
- Coordinates
- Distance and midpoint
- Slope of a line
- Parallel and perpendicular lines
- Proofs by the use of coordinates
- Graphs
- The first-degree equation in two variables
- Point of intersection of two lines

q. Geometry of the Circle (W&A Ch. 18) (2 Weeks)
- Arcs and central angles
- Arcs and chords
- Tangents to circles
- Inscribed and circumscribed figures
- Tangent circles
- Measurements of angles and arcs: the arc degree, circle properties involving similarity, concyclic points
- EUCLID: Book 3 Definitions and Propositions 16, 17, 18, 20

r. Measurements in a Circle (W&A Ch. 20) (2 Weeks)
- Length of an arc
- Circle and regular polygons
- Perimeters and areas of regular polygons
- Circles; circumference and area formulas

- ♦ Circumference and area of a circle
- ♦ The value of pi
- ♦ Measurement of arcs and sectors of circles
- ♦ Area of a segment of a circle

s. Geometry on the Surface of a Sphere (W&A Ch. 23) (1 Week)

- ♦ Distance on a sphere
- ♦ Angles on a sphere
- ♦ Spherical figures
- ♦ Areas on spheres

V. Science

Resources (teacher preference among the following):

- *BSCS Biology: A Molecular Approach*
- *Biology*, Robert Miller and Joseph Levine
- *Biology*, Peter H. Raven and George B. Johnson

a. Scientific Method; basic chemistry and biochemistry

- ♦ Steps of the scientific method
  Experimental design
  Characteristics of living things
- ♦ Atoms, elements, compounds, bonds
  Molecular structure of water and its properties
  Structure and function of macromolecules/carbon compounds: lipids, carbohydrates, nucleic acids, proteins

b. Cell structure and function

- ♦ Discovery of the cell
  Microscopes
  Prokaryotes and eukaryotes
  Cellular organization: organelle structure and function
  Cell membrane structure and function: passive and active transport
- ♦ ATP, biochemical energy, heterotrophs and autotrophs
  Plant cell structure and function: chlorophyll, chloroplasts
  Photosynthesis: light dependent reactions, Calvin Cycle
- ♦ Comparing photosynthesis to cellular respiration

Glycolysis, Krebs Cycle, electron transport chain
Fermentation

- Cell growth, division, reproduction
  Cell Cycle: interphase, mitosis, cytokinesis
  Regulation of the cell cycle

c. Genetics

- Mendelian genetics
  Punnett Squares
  Non-Mendelian patterns of inheritance
  Meiosis
- Discovery of DNA
  DNA structure and function
  DNA Replication
- RNA structure and function
  Transcription, translation
  Mutations, gene regulation
- Human chromosomes, genetic disorders, biotechnology

d. Evolution and Classification

- Darwin's voyage, observations
  Other scientists' influences on Darwin (Hutton, Lyell, Lamarck, Malthus)
  Theory of evolution by natural selection
  Evidence for evolution
- Population genetics and evolution
  Natural selection's effects on populations
  Speciation
  Molecular evolution
- Binomial nomenclature, dichotomous keys, Linnean classification system
  Cladograms
  Three-domain system
- Fossil record, relative and radiometric dating, geologic time scale
  Patterns of macroevolution, rates of evolution
  Hypotheses about life's origin on Earth, endosymbiotic theory and multicellularity

e. Microorganisms, Fungi, Plants

- Viruses: discovery, structure, function, types; viral infection
  Prokaryotes: classification, structure and function
  Bacterial and viral diseases
- Protists: classification, structure and function, reproduction, importance in ecology
  Fungi: classification, structure and function, reproduction, importance in ecology
- Plants: classification, basic needs
  Bryophytes: life cycle
  Seedless vascular plants: importance of vascular tissue, life cycle
  Gymnosperms: importance of seeds, life cycle
  Angiosperms: flowers and fruits, angiosperm life cycle and classification
  Root, stem, leaf, fruit, seed structure and function

f. Animals

- Basic characteristics, requirements, classification
  Invertebrates vs. chordates
  Body plan organization, development, evolution
- Evolution and diversity: invertebrates, chordates, primates
- Animal systems: structure and function, adaptations and evolution
  Feeding and digestion, respiration, circulation, excretion, response, movement and support, reproduction, maintaining homeostasis
- Animal behavior: types, examples, significance within evolution

g. Human Body

- Digestive and excretory systems
  Human body organization
  Nutrition
  Digestive system structure and function, processes of digestion, absorption, elimination
  Excretory system structure, function, importance of kidneys and homeostasis
- Nervous system
  Nervous system organization, structure of the neuron, process of a nerve impulse
  Central nervous system structures and function

Peripheral nervous system structures and function
Senses

- Skeletal, muscular, and integumentary systems
  Skeletal system structure and function: bones and joints
  Muscular system structure and function: muscle tissue, contraction, and movement
  Integumentary system structure and function: skin
- Circulatory and respiratory systems
  Heart structure and function, circulation through blood vessels
  Blood components and functions, role of the lymphatic system, circulatory diseases
  Respiratory system structure, process of gas exchange
- Endocrine and reproductive systems
  Hormone action
  Endocrine glands
  Male and female reproductive systems
  Fertilization and embryonic development
- Immune system and disease
  Infection and spread of disease
  Immune system defenses against disease
  Immune system disorders

h. Ecology

- The biosphere
  Levels of organization, biotic and abiotic factors
  Producers, consumers, and energy flow through ecosystems
  Water and nutrient cycles
- Ecosystems and communities
  Niches, competition, predation, symbioses,
  Succession and climax communities
  Biomes and aquatic ecosystems
- Populations
  Ecological factors within populations: density, growth rate, age structure, types of growth
  Limiting factors

VI. Latin 3

Resources:

- *Wheelock's Latin*, 7th ed., Frederic M. Wheelock and Richard A. LaFleur

Supplementary Resources:

- Workbook for Wheelock's Latin, Paul Comeau and Richard A. LaFleur
- Wheelock's Latin Reader: Selections from Latin Literature, 2nd ed., Frederick M. Wheelock and Richard A. LaFleur
- Thirty-Eight Latin Stories Designed to Accompany Wheelock's Latin, 5th ed., Anne Groton and James May
- *New Latin Grammar*, J.H. Allen and J.B. Greenough
- *Lingua Latina per se Illustrata, Pars I: Familia Romana*, Hans H. Ørberg
- *Lingua Latina per se Illustrata. Pars I: Latine Disco Student Manual*, Hans Ørberg
- *Literature in the Roman World*, Oliver Taplin
- *A Handbook of Latin Literature*, H.J. Rose and E. Courtney

a. Review: Wheelock's Latin, Chapters 1-32 (review for about the first quarter of the school year)
b. Chapter 33
    - Conditions
c. Chapter 34
    - Deponent verbs
    - Ablative with special deponents
d. Chapter 35
    - Dative with adjectives, special verbs, and compounds
e. Chapter 36
    - Jussive noun clauses
    - *Fīō*
f. Chapter 37
    - Conjugation of *eō*
    - Place and time constructions
g. Chapter 38
    - Relative clauses of characteristic
    - Dative of reference
    - Supines
h. Chapter 39
    - Gerund and gerundive

i. Chapter 40
    - *-Ne*, *num*, and *nōnne* in direct questions
    - Fear clauses
    - Genitive and ablative of description
j. Locī Antīquī (selected readings)
k. Locī Immūtātī (selected readings)

Tenth Grade

I. Literature

Teacher Resources:

- *Romantic Poetry, An Annotated Anthology,* Michael O'Neill and Charles Mahoney
- *The Visionary Company,* Harold Bloom
- Henry V (DVD), Hollow Crown Production
- Hamlet (DVD),

Student Resources:

- *Beowulf*
- *Canterbury Tales,* Geoffrey Chaucer
- Shakespeare Sonnets Packet, Barney Charter School Initiative
- English Romantic Poetry Packet, Barney Charter School Initiative
- *Hamlet*, William Shakespeare
- *Henry V,* William Shakespeare
- *Tale of Two Cities*, Charles Dickens
- *Paradise Lost*, John Milton
- *Pride and Prejudice*, Jane Austen
- *Elements of Style,* Strunk & White

Fall Semester-

a. *Beowulf*
b. *The Canterbury Tales* (selections)
    - ♦ General Prologue
    - ♦ Knight's Tale
    - ♦ Pardoner's Tale
c. *Paradise Lost* (selections)
    - ♦ Books 1-5
    - ♦ Books 9-10
    - ♦ Books 11-12 (selections)
d. Shakespeare's Sonnets

Spring Semester-

a. *Hamlet & Henry V*
b. *Pride and Prejudice*
c. English Romantic Poetry
d. *Tale of Two Cities*

II. History

Resources:

- *City of God* and *The Confessions*, Saint Augustine
- *The Prince and Other Writings*, Niccolo Machiavelli
- *Two Lives of Charlemagne*, Einhard
- *Western Heritage Reader* from Hillsdale College
- *A History of the Modern World*, R.R. Palmer, Joel Colton, and Lloyd Kramer
- *Medieval Europe: A Short History*, C. Warren Hollister
- *A History of the Medieval World* and *A History of the Renaissance World*, Susan Wise Bauer
- *A Concise History of the Crusades*, Thomas Madden
- *Sources of the Western Tradition, Vol. II: From the Renaissance to the Present*, ed. Marvin Perry
- *A Short History of Byzantium*, John Julius Norwich

Fall Semester –

a. Crisis and Division in Rome
   - ♦ *Germania*, Tacitus
   - ♦ Crisis of the Roman Empire
   - ♦ German Tribes

     Huns, Visigoths, Ostrogoths, Vandals, Franks

b. Constantine and Christian Rome
   - ♦ Tertullian
   - ♦ Constantine
   - ♦ Council of Nicaea, Nicene Creed
   - ♦ Constantinople, Byzantium
   - ♦ Sacking of Rome and Augustine's *City of God*
   - ♦ St. Augustine: *Confessions* and *On Christian Doctrine*
   - ♦ St. Benedict: *Account of Benedict's Life* by Gregory I, Rules of St. Benedict
   - ♦ Justinian

c. Birth of Islam
   - ♦ Muhammad
   - ♦ 5 pillars of Islam, Koran, jihad
   - ♦ Spread of Islam
   - ♦ Early division: Sunni vs. Shii

d. Early Middle Ages
   - ♦ Collapse of the Empire in the West

- "Dark Ages": barbarians, plague, demographic collapse, loss of unifying political authority, etc.
- Missionary Efforts to Barbarians
- Charlemagne and the Christian Roman Empire north of the Alps (Carolingian Renaissance), Charlemagne (selections from Einhard's *Life of Charlemagne*)
- Islam: Mutazilites vs. Asharites; spread of the Moors to Europe, Cordoba
- Vikings
- Magyars
- East-West Schism

e. Later Middle Ages

- Norman Conquest
- Medieval society
- Investiture Controversy, Concordat of Worms
- Crusades
- Magna Charta
- Medieval Scholasticism
- St. Francis: *Life of St. Francis* by Thomas of Celano
- St. Thomas Aquinas: Summa Theologiae

Spring Semester—

f. Disruptions in Medieval Society

- Ottoman Empire
- Marco Polo
- Black Death
- Avignon Papacy and the Western Schism
- Hundred Years' War
- Fall of Constantinople
- Spanish/Portuguese/Roman Inquisition

g. Renaissance Humanism

- Rise of Italian Republics
- "The Ascent of Mount Ventoux" and "On His Own Ignorance," Petrarch
- "On Liberal Learning," Vergerius
- *On the Family*, Leon Battista Alberti

- *The Courtier*, Castiglione
- Michelangelo
- Leonardo
- Lives of the Artists, Giorgio Vasari

h. Early Exploration
- Christopher Columbus
- Conquistadores; Bartolomé de Las Casas
- British, Dutch, and French Exploration of North America

i. Disruptions in Medieval Religion
- Martin Luther: 95 Theses (excerpts) and On Christian Liberty, or The Babylonian Captivity, or Address to the Christian Nobility; also, Luther and Erasmus on the will
- John Calvin
- Counter Reformation: Ignatius of Loyola, Council of Trent
- Anglican Church: Henry VIII, 39 Articles
- Anabaptists

j. Early-Modern Political and Scientific Thought; Enlightenment
- *The Prince*, Niccolo Machiavelli
- Johannes Kepler
- Galileo Galilei
- The Trew Law of Free Monarchies, James I
- *Novum Organum*, Francis Bacon
- Meditations on First Philosophy, Renee Descartes
- Leviathan, Thomas Hobbes
- *Principia*, Isaac Newton
- The Second Treatise of Civil Government, John Locke
- Discourse on Inequality, Jean-Jacques Rousseau
- The Wealth of Nations, Adam Smith

k. Revolutions in Europe
- Thirty Years' War and the Peace of Westphalia
- English Civil War
- The Glorious Revolution

III. Mathematics

Resources:

- *A Second Course in Algebra* (including the Solutions Manual and the Teachers Edition), Arthur W. Weeks and Jackson B. Adkins; chapters 1-10, 12, 13, 17, 14 (section concerning circles) 18;
- *A Long Way from Euclid*, Constance Reid

Fall Semester

a. Rational Numbers (W&A Ch. 1) (2 Weeks)
   - ♦ Sets of objects, closure
   - ♦ Natural numbers, integers, rational numbers
   - ♦ Axioms for rational numbers
   - ♦ Subtraction and division
   - ♦ Nature of equality
   - ♦ Theorems of algebra
   - ♦ Division by zero

b. Equations and Inequalities (W&A Ch. 2) (2 Weeks)
   - ♦ Variables
   - ♦ Equations
   - ♦ Statement and converse
   - ♦ Inequalities
   - ♦ Absolute value

c. Systems of Linear Equations (W&A Ch. 3) (3 Weeks)
   - ♦ Equations in two variables
   - ♦ Method of substitution
   - ♦ Method of addition or subtraction
   - ♦ Equations requiring simplification
   - ♦ Equations in three variables
   - ♦ Word problems

d. Factored Forms (W&A Ch. 4) (3 Weeks)
   - ♦ Factors and the change of form
   - ♦ The common or distributed factor
   - ♦ Special product forms

- The general quadratic trinomial: $ax^2 + bx + c$
- Using the difference of two squares
- Cubes of binomials

e. Fractions (W&A Ch. 5) (3 Weeks)
- Fractions and their forms
- Order of size of fractions
- Multiplication and division of fractions
- Reciprocal numbers
- Addition and subtraction of fractions
- Complex fractions

f. Quadratic Equations with Rational Roots (W&A Ch. 6) (1.5 Weeks)
- Degree of a polynomial
- Solution of quadratic equations by factoring
- Solution of cubic equations by factoring
- Fractional equations
- Problems leading to quadratic equations

g. Formulas (W&A Ch. 7) (1.5 Weeks)
- Formulas
- Solving formulas
- Ratio and proportion
- Deductions from formulas

h. Irrational Numbers (W&A Ch. 8) (3 Weeks)
- Squares and square roots
- Rational and irrational numbers
- Real numbers
- Radicals and operations with radicals
- Numbers of the form $\sqrt{a} + \sqrt{b}$
- Irrational roots of quadratic equations
- Completing the square
- The roots of the equation $ax^2 + bx + c = 0$
- Irrational expressions and equations

Spring Semester

i. Functions, Graphs, and Variation (W&A Ch. 9) (3 Weeks)
    - ♦ Coordinates of points in a plane
    - ♦ Definitions: projection, abscissa, ordinate, coordinate axes, coordinate plane, quadrants
    - ♦ Graphs and their patterns
    - ♦ Relations and functions
    - ♦ Definitions: domain, range, the value of a function, independent variable, dependent variable
    - ♦ Linear functions
    - ♦ Direct variation
    - ♦ Inverse variation
    - ♦ More complicated variations

j. Exponents and Logarithms (W&A Ch. 10) (3 Weeks)
    - ♦ Exponents: Integers and Rational Numbers
    - ♦ Laws of exponents
    - ♦ Logarithms
    - ♦ Logarithms to bases other than 10
    - ♦ Graph of $y = \log_b x$
    - ♦ The laws of logarithms
    - ♦ Exponential equations

k. C coordinate Geometry (W&A Ch. 12) (2 Weeks)
    - ♦ Algebra and geometry
    - ♦ Distance and midpoint
    - ♦ Slope
    - ♦ Parallel and perpendicular lines
    - ♦ Proofs of geometric theorems
    - ♦ The point-slope equation of a line
    - ♦ Point of intersection of two lines
    - ♦ Related changes
    - ♦ The linear function and functional notation

l. Quadratic Functions (W&A Ch. 13) (3 Weeks)
    - ♦ Domain and range

- ♦ Zeros of a function
- ♦ Graph of a quadratic function, parabolas
- ♦ Complex numbers and their operations
- ♦ Roots of quadratics
- ♦ Formation of quadratic functions and equations

m. Polynomials (W&A Ch. 17) (2.5 Weeks)

- ♦ Factorable polynomials
- ♦ The cubic function
- ♦ Symmetry about a point
- ♦ Characteristics of the cubic function
- ♦ The division identity and the remainder theorem
- ♦ Rational roots of a polynomial equation
- ♦ Synthetic division

n. Equations of the Second Degree; Circles (W&A Ch. 14 (selections)) (1 Week)

- ♦ Equation of circle with center at the origin
- ♦ Systems of equations: first-degree, second-degree
- ♦ Equation of circle: center-radius form
- ♦ Equation of circle: general form

o. Sequences and series (W&A Ch. 18) (2.5 Weeks)

- ♦ Sequences and rules for sequences
- ♦ Arithmetic sequences
- ♦ Arithmetic series and their sums
- ♦ Geometric series and their sums
- ♦ Arithmetic and geometric means
- ♦ Mathematical induction
- ♦ The ∑ notation
- ♦ The binomial series

IV. Science

Resources:

- *Modern Chemistry*, Mickey Sarquis and Jerry L. Sarquis (Holt McDougal)

a. Review of basic chemistry terms
    - States of matter
      Physical and chemical changes
      Atoms, elements, compounds, pure substances, mixtures

b. Review of measurements and calculations
    - Scientific method
    - Units of measurement
      SI units, converting between units, calculating density,
    - Significant figures
      Scientific notation

c. Atoms
    - Atomic structure
    - Counting atoms
      Atomic mass, isotopes
      The mole, Avogadro's number
      Mass to mole conversions

d. Atomic models and electron configuration
    - History of atomic structure and atomic models
    - Properties of light and the electromagnetic spectrum
    - Orbital shapes
    - Electron configurations

e. The Periodic Law
    - History of the Periodic Table
    - Electron configuration and periodic properties

f. Chemical Bonding
    - Role of electrons; types of bonding; Lewis Structures
    - Covalent bonding; molecular compounds
    - Ionic bonding; ionic compounds
    - Metallic bonding
    - VSEPR Theory

g. Chemical compounds and formulas
    - Naming and writing formulas for ionic and molecular compounds, polyatomic ions

- Assigning oxidation numbers
- Calculating formula mass and molar mass
- Empirical and molecular formulas

h. Chemical equations and reactions
- Describing chemical reactions
- Balancing chemical equations
- Types of chemical reactions
- Activity series

i. Stoichiometry
- Ratios and stoichiometric calculations
- Excess, limiting reactants, percentage yield

j. States of Matter
- Kinetic-molecular theory of matter
- Solids, liquids, gases
- Changes of state, phase diagrams
- Water in all three states of matter

k. Gases
- Gas laws: Boyle's, Charles', Gay-Lussac's, Combined
- Gas volume and the Ideal Gas Law
- Stoichiometry of gases and molar volume
- Diffusion and effusion

l. Solutions
- Types of mixture; types of solutions
- Solubility, molarity, molality
- Dissociation
- Colligative properties

m. Acids and Bases
- Properties and theories of acids and bases
- Conjugate acids and bases
- pH, pOH, pH scale, equilibrium constant
- Titrations
- Acid-base stoichiometry

n. Reaction Energy

- Enthalpy of reaction and formation
- Bond energies
- Entropy
- Gibbs free energy
- Spontaneity

o. Reaction Kinetics
- Collision Theory
- Energy diagrams
- Rate-influencing factors and rate laws

p. Chemical Equilibrium
- Acid/base ionization constants
- Titration curives
- Le Chatelier's Principle
- Buffers
- Hydrolysis of salts

q. Oxidation-Reduction Reactions
- Identifying and balancing redox reactions
- Oxidation numbers
- Strength of oxidizing and reducing agents

r. Electrochemistry
- Voltaic cells
- Electrode potentials
- Electrolytic cells

Eleventh Grade

I. Literature

Teacher Resources:

- *Adventures of Huckleberry Finn*, Mark Twain, Norton Critical Edition
- *A Good Man is Hard to Find,* Flannery O'Connor

Student Resources:

- *Adventures of Huckleberry Finn*, Mark Twain
- *Moby Dick*, Herman Melville
- *The Scarlet Letter*, Nathaniel Hawthorne
- American Poetry Packet, Barney Charter School Initiative
- *Elements of Style,* Strunk & White

a. Fall Semester

- ♦ Nathaniel Hawthorne, *The Scarlet Letter*
- ♦ Anne Bradstreet, poetry
- ♦ Ralph Waldo Emerson, essays, esp. "Self-Reliance"
- ♦ Herman Melville, *Moby Dick* (begin)

b. Spring Semester

- ♦ Herman Melville, *Moby Dick* (finish)
- ♦ Walt Whitman, poetry selections
- ♦ Edgar Allan Poe, poetry selections
- ♦ Henry Wadsworth Longfellow, poetry selections
- ♦ Mark Twain, *Huckleberry Finn*
- ♦ Poetry of Emily Dickinson and Robert Frost
- ♦ Flannery O'Connor, "A Good Man Is Hard to Find"
- ♦ T. S. Eliot, poetry selections

II. History

Resources:

- *America: The Last Best Hope, Vol. 1*, William J. Bennett
- *A History of the American People*, Paul Johnson
- *American Heritage: A Reader* from Hillsdale College
- *Letters of a Nation: A Collection of Extraordinary American Letters*, edited, Andrew Carroll
- *The Autobiography of Benjamin Franklin*

Fall Semester –

a. Early Civilizations and Exploration
    - Native Americans prior to European colonization
    - European Explorers: French, Dutch, and English explorers in North America
b. From Settlement to Colony
    - Mid-Atlantic Colonies
    - New England Colonies
    - Southern Colonies
    - First Great Awakening
c. French and Indian War to the Revolutionary War
    - French and Indian War
    - Intolerable Acts, etc.
    - Revolutionary War
d. History of the Constitution
    - Aftermath of the Revolution
    - Articles of Confederation
    - Shays' Rebellion
    - Writing a Constitution: Summer of 1787
    - Passing a Constitution: Federalism vs. Anti-Federalism; Federalist papers
    - Federalists: Presidencies of Washington and Adams
e. Jeffersonian America
    - Election of 1800
    - Jeffersonian Democrats
    - War of 1812
    - Indians and the Frontier
    - Second Great Awakening

Spring Semester –

f. Jacksonian America
    - Andrew Jackson's presidency
    - Emergence of the Whig Party

g. Antebellum Era
    - Slavery and Abolition
    - Mexican-American War
    - Whig Presidents
    - Lincoln-Douglas Debates

h. Civil War
    - Efficient causes of war: Election of 1860, Secession of the South, Confederate States, Confederate Constitution
    - Major battles, generals, and strategy: Firing on Ft. Sumter, First and Second Battles of Bull Run, Antietam, Gettysburg, Sherman's March to the Sea, Robert E. Lee, Stonewall Jackson, Ulysses S. Grant, William Tecumseh Sherman, Winfield Scott, George B. McClellan
    - Emancipation Proclamation: politics of emancipation, also include the Gettysburg Address
    - Lincoln's Second Inaugural, plans for Reconstruction, and assassination

i. Reconstruction
    - Presidential Reconstruction
    - Congressional Reconstruction
    - Civil War Amendments
    - Election of 1876

j. Reconstruction through 1900
    - The South after Reconstruction
    - The closing frontier
    - Reformers: Prohibitionists, Suffragettes, Populists, Social Gospelers
    - Industrialization: Technology and Big Business
    - Urbanization and Major Cities
    - Parties, Congress, and the Presidency

III. Government

Resources:

- American Government Readings packet, Barney Charter School Initiative
- *Government Class Book*, Andrew Young (1865 student text)

Teacher Resources:

- *We Still Hold These Truths*, Matthew Spalding
- *The US Constitution: A Reader*, Hillsdale College Press
- *Vindicating the Founders*, Thomas West
- *American Progressivism: A Reader*, ed. Ronald J. Pestritto

a. Principles of Government: Declaration of Independence
   - ♦ Equality, unalienable rights, human nature, natural law, natural rights
   - ♦ Social Contract Theory
   - ♦ Limited government
   - ♦ Consent
   - ♦ Despotism, right of revolution

b. American Constitutionalism
   - ♦ Rule of law and a written constitution
   - ♦ Brief history of the American Revolution, formation of the Union
   - ♦ Requirements of republican government: representation, federalism, separation of powers, checks and balances, independent judiciary

c. Three Branches of Government
   - ♦ Legislative: enumerated powers, legislative power, House of Representatives, Senate, bicameralism, deliberation
   - ♦ Executive: executive power, presidency, war powers
   - ♦ Judicial: judicial power, judicial review, state and district courts, Supreme Court

d. Bill of Rights
   - ♦ Amendments 1-10
   - ♦ Religious liberty, free speech, procedural rights

e. Early Supreme Court Cases
   - ♦ Judicial review: *Marbury v. Madison*
   - ♦ The debate over a national bank: *McCulloch v. Maryland*

f. Crisis of Constitutional Government
   - ♦ The founders on slavery

- *Dred Scott v. Sanford*
- Lincoln on *Dred Scott*, Lincoln on slavery
- Secession and the Civil War
- Lincoln's wartime Constitutionalism
- Post-war amendments

g. Progressivism
- Historical progress, historical contingency
- Administration vs. politics
- Rejection of separation of powers, federalism, representation

h. Institutionalizing Progressivism
- New Deal, Great Society
- Expansive presidential leadership
- Administrative state, rule by bureaucracy, regulation of economy, delegation of lawmaking

i. Modern American Government
- Political parties
- Elections, campaigns, media
- Administrative state

IV. Moral Philosophy

Nota Bene:

> More than any other class, the Moral Philosophy course will depend upon the expertise of the teacher. A teacher who tries to learn the subject while teaching it for the first time will find himself or herself ill-equipped to answer questions, direct student discussion, or even ask the right questions of the texts. Because subject-mastery is demanded of the teacher, the teacher should make his or her own decisions about what texts and subjects to include. Content will also depend upon the capabilities and interests of students, so a teacher may find it necessary to revise the syllabus from year to year.

a. Content That Should Be Covered
- Cardinal Virtues: Courage, Justice, Moderation, Wisdom, Prudence
- Other Practical/Moral Virtues: Friendship, Magnanimity
- Nature as a normative standard: Natural Right, Natural Law, Natural Rights
- History as a normative standard

- Consequentialism, Utilitarianism
- Relativism, nihilism, modern conceptions of the will

b. Authors and Works That Might Be Covered (not a comprehensive list)

- Aristotle, *Nicomachean Ethics*
- Plato, *Republic*
- Cicero, *De Officiis* and *De Amicitia*
- St. Augustine, *Confessions* and *City of God*
- St. Aquinas, *Summa Theologiae*
- John Locke, *Some Thoughts Concerning Education*
- Jean Jacques Rousseau, *Emile*
- Immanuel Kant, *Grounding for the Metaphysics of Morals*
- John Stuart Mill, *On Liberty*
- Georg Wilhelm Friedrich Hegel, *Introduction to the Philosophy of History*
- Karl Marx, *The Communist Manifesto*
- Nietzsche, *Beyond Good and Evil*
- Aldous Huxley, *Brave New World*
- C.S. Lewis, *Abolition of Man* and *The Four Loves*
- Alasdair MacIntyre, *After Virtue*
- Allan Bloom, *The Closing of the American Mind*

V. Mathematics

Resources:

- *Precalculus,* Michael Sullivan
- *Trigonometry,* I.M. Gelfand and Mark Saul

Supplementary Resources:

- *Schaum's Outline of Trigonometry*, Robert Moyer
- *A Second Course in Algebra* (including the Solutions Manual and the Teachers Edition), Arthur W. Weeks and Jackson B. Adkins
- *Mathematical Mysteries* by Calvin C. Clawson

Fall Semester

c. Functions and Graphs Review (Sullivan Ch. 1-2) (3 Weeks)

- The Coordinate Plane
- The distance and midpoint formulas
- Graphs of equations in two variables; intercepts; symmetry
- Lines/Circles
- Functions and their graphs
- Properties of functions
- Library of functions;
- Piecewise-defined functions
- Graphing techniques: transformations
- Mathematical models: building functions

d. Linear and Quadratic Functions (Sullivan Ch. 3) (2 Weeks)
   - Linear functions/properties
   - Writing linear functions
   - Quadratic functions/properties
   - Writing quadratic functions

e. Polynomial and Rational Functions (Sullivan Ch. 4) (2 Weeks)
   - Polynomial functions and models
   - Rational functions/properties
   - Graphing polynomials and rational functions
   - Finding zeroes of a function

f. Exponential and logarithmic functions (Sullivan Ch. 5) (2 Weeks)
   - Composite functions
   - Exponential/logarithmic functions and graphs
   - Properties of exponents/logarithms
   - Logarithmic and exponential equations

g. Trigonometry Introduction/Ratios of a Triangle (Saul&Gelf Ch. 0-1) (3 Weeks)
   - Right angles
   - Pythagorean Theorem
   - Sine, cosine, tangent, cotangent, secant, cosecant

h. Relations Among Trigonometric Ratios (Saul&Gelf Ch. 2-3) (3 Weeks)
   - Finding numerical values of angles using trigonometric ratios
   - Trigonometric identities and inequalities
   - Solving right triangles

- The sine ratio and circle chords
- Geometry of a triangle
- Law of sines
- Area of a triangle
- Law of cosines

i. Angles, Rotations, and Radians (Saul&Gelf Ch. 4-5) (3 Weeks)
   - Measuring rotations/angles
   - Trigonometric functions for all angles
   - Odd and even functions
   - Radian measure for angles and rotations and distance
   - Sine function graphing
   - Area under the sine curve; the tangent to the sine curve

Spring Semester

j. Trig Identities (Saul&Gelf Ch. 6-7) (3 Weeks)
   - Sine and cosine identities
   - Addition formulas
   - Principle of analytic continuation
   - Tangent formulas
   - Doubling and tripling the angle
   - Derivation of sine and cosine formulas
   - Converting products of sines and cosines to sums and vice versa

k. Graphs of Trig Functions (Saul&Gelf Ch. 8) (3 Weeks)
   - Graphing the basic sine curve
   - The period of the function y=sin x
   - Periods and amplitudes of other sinusoidal curves
   - Shifting and stretching the sine
   - Half-period shifts
   - Graphing the tangent and cotangent functions
   - Sums of sinusoidal functions
   - Linear combinations of sines and cosines

l. Inverse Functions and Trigonometric Equations (Saul&Gelf Ch. 9) (3 Weeks)
   - Functions and inverse functions

- Arcsine: The inverse function to sine
- Graphing inverse functions
- Trigonometric equations

m. Systems of Equations and Inequalities (Sullivan Ch. 11) (3 Weeks)
- Systems of linear equations: substitution and elimination,
- Matrices and determinants
- Matrix algebra
- Partial fraction decomposition
- Systems of nonlinear equations
- Systems of inequalities

n. Sequences and Series (Sullivan Ch. 12) (3 Weeks)
- Arithmetic sequences
- Geometric sequences
- Geometric series
- Mathematical induction
- The Binomial Theorem

o. Counting and Probability (Sullivan Ch. 13) (2 Weeks)
- Counting
- Permutations and combinations
- Probability

p. Preview of Calculus (Sullivan Ch. 14) (1 Week)
- Finding limits using tables and graphs
- Algebra techniques for finding limits
- One-sided limits; continuous functions
- The tangent problem; the derivative
- The area problem; the integral

VI. Science

Resources:

- *Physics*, Raymond A. Serway and Jerry S. Faughn (Holt McDougal)

a. Introduction; motion in one dimension
    - ♦ Measurement, units and conversion
    - ♦ Displacement, velocity, acceleration
    - ♦ Interpreting motion graphs
    - ♦ Free fall
b. Two-dimensional motion and vectors
    - ♦ Vector operators
    - ♦ Projectile motion
    - ♦ Relative motion
c. Forces and the Laws of Motion
    - ♦ Free body diagrams
    - ♦ Newton's Laws
    - ♦ Friction; static and dynamic equilibrium
    - ♦ Applications of Newton's Laws
d. Work and Energy
    - ♦ Work
    - ♦ Energy
    - ♦ Conservation of energy
    - ♦ Power
e. Momentum and collisions
    - ♦ Momentum and impulse
    - ♦ Conservation of momentum
    - ♦ Collisions
f. Circular motion and gravitation
    - ♦ Rotational motion
    - ♦ Tangential and centripetal acceleration
    - ♦ Gravitation

- Kepler's laws
- Torque
- Simple machines

g. Vibrations and waves
   - Simple harmonic motion
   - Hooke's Law
   - Pendulums
   - Wave motion and wave interactions

h. Sound
   - Sound waves
   - Doppler Effect
   - Sound intensity
   - Resonance
   - Harmonics
   - Physics of music

i. Light and geometric options
   - Characteristics of light
   - Flat and curved mirrors
   - Refraction
   - Total internal reflection
   - Thin lenses
   - Interference and diffraction of light

j. Electrostatics
   - Electrostatics introduction
   - Coulomb's Law
   - Superposition principle
   - Electric fields
   - Electric potential energy
   - Electric potential
   - Capacitance

k. Electric Circuits
   - Circuits
   - Resistance

- Ohm's Law
- Series and parallel circuits
- Complex resister combinations

l. Magnetism

- Magnets and magnetic fields
- Electromagnetism
- Magnetic force
- Induced current
- Generators and motors

Twelfth Grade

I. Modern Literature

Resources:

- *1984,* George Orwell
- *Crime and Punishment,* Fyodor Dostoevsky
- *Heart of Darkness,* Joseph Conrad
- *The Metamorphosis,* Franz Kafka
- *Elements of Style,* Strunk & White
- 19th & 20th Century Short Stories & Poetry Packet (BCSI Dropbox)

a. Fall Semester
   - ♦ *The Metamorphosis*
   - ♦ *Heart of Darkness*
   - ♦ *Crime and Punishment*

b. Spring Semester
   - ♦ *Crime and Punishment* (finish)
   - ♦ 19th- and 20th-century short stories and poetry (various)
   - ♦ *1984*
   - ♦ Senior Thesis (students should have a reduced load in literature in order to focus on writing their senior theses)

II. Modern European History

Potential Student Resources:

- *A History of the Modern World*, R.R. Palmer, Joel Colton, and Lloyd Kramer
- *A History of Western Society, Volume II*, John P. McKay and Bennett D. Hill
- *My Early Life*, Winston Churchill

Teacher Resources

- *A History of Modern Europe from Renaissance to the Present*, John Merriman
- *Europe 1815-1914*, Gordon Craig
- *The Proud Tower*, Barbara Tuchman
- *The Great Illusion*, Oron J. Hale
- *The End of the European Era: 1890 to the Present*, Felix Gilbert and David Clay Large
- *Europe in the 20th Century*, Roland N. Stromberg

Fall Semester –

a. French Revolution, Era of Napoleon (1790-1815)

- Declaration of the Rights of Man
- Opposing views of the French Revolution
  Edmund Burke, *Reflections on the Revolution in France*
  Thomas Paine, *Rights of Man*
- Napoleon Bonaparte
- Napoleonic Wars: War Between Britain and France, War of the Third Coalition, War of the Fourth Coalition, War of the Fifth Coalition, Invasion of Russia, War of the Sixth Coalition, War of the Seventh Coalition
- Important Battles: Austerlitz, Trafalgar, Waterloo
- Dissolution of the Holy Roman Empire
- Confederation of the Rhine, German Confederation
- Bourbon Monarchy
- Congress of Vienna

b. Waves of Revolution (1815-1849)
- Ideas of the French Revolution: Nationalism, Democracy, Liberalism
- Greek War for Independence
- Belgian Revolution
- July Revolution
  End of Bourbon Monarchy, Charles X
- Revolutions of 1848: France, Austria, Prussia
- Pax Britannica
  Reform Movements in Britain: The Great Reform Bill
  Queen Victoria

c. Industrial Revolution
- First Industrial Revolution (steam)
  Railroads, steamboats
- Second Industrial Revolution (electricity)
- Capitalism: growth of business, trusts, cartels, labor unions, labor movements
- Socialism:
  Karl Marx, *The Communist Manifesto*
  French utopian socialism

- Secularization: positivism, rationalism
  John Stuart Mill, *On Liberty*
  August Comte, selections on Positivism
  G.W.F. Hegel, I*ntroduction to the Philosophy of History*
- First Vatican Council: Response to Secularization
- Consumerism and Globalization
- Rise of Science
  Charles Darwin, *On the Origin of Species*

d. The Rise of Nationalism (1848-1870)
   - Weakening of the Concert of Europe
     Crimean War
     The Peace of Paris
     Congress of Berlin
   - The Second Empire in France: Napoleon III
   - Italian Unification
     People: Count of Cavour, Giuseppe Mazzini, Giuseppe Garibaldi, Victor Emmanuel II
     Events: Plombières Agreement, Italian War of 1859, Armistice of Villafranca
   - German Unification
     People: Wilhelm I, Otto von Bismarck
     Events: Second Schleswig War, Austro-Prussian War, Franco-Prussian War

e. Imperial Expansion/Colonization
   - Motives, direction, conflicts
   - Suez Canal
   - The Great Game: British-Russian rivalry in Asia
   - Partition of Africa
   - Sino-Japanese War and Boxer Rebellion
   - Boer War
   - Russo-Japanese War
   - Rudyard Kipling, "White Man's Burden"

f. Drift Towards WWI (1870-1914)
   - Decline of the Ottoman Empire

Creation of Balkan States
Various Balkan nationalisms
First Balkan War, 1912-13

- Bismarckian Germany
- Wilhelmine Germany
- Rise of Anarchism
- Imperial Russia:
  Economy, Agrarian problem
  Political developments: Revolution of 1905, Russian Constitution of 1906
  Nationalism in Russia, Poland, Finland
- Formation of alliances

Spring Semester –

g. Drift Towards WWI (continued)
   - Rise of Anarchism
   - Formation of Alliances

h. The Great War
   - Causes: nationalism, militarism, colonization, alliances
   - Assassination of Archduke Ferdinand, violence in the Balkans
   - Triple Alliance, Triple Entente
   - War technologies, realities of trench warfare, war of attrition
   - Important Battles/Campaigns: Marne, Verdun, Somme, Jutland, Gallipoli, Dardanelles
   - Russian withdrawal, Treaty of Brest Litovsk
   - Dissolution of German, Russian, Austro-Hungarian, and Ottoman Empires

i. Treaty of Versailles, consequences of WWI
   - Disarmament
   - Reparations
   - Economic Conditions in Europe
   - Conflicts between Left- and Right-leaning Parties throughout Europe
   - League of Nations, Wilson's Fourteen Points
   - Kellogg-Briand Pact

j. Russian Revolution

- Background: WWI, economy, inflation, political unrest, Tsar Nicholas II
- February Revolution, October Revolution
- Bolsheviks, Communist Party, Revolutionary Marxism
- Creation of USSR
- Vladimir Lenin, Leon Trotsky
- Centralization of industry, collectivization of agriculture, 5 year plans
- Josef Stalin
- Purges, The Great Purge

k. The Rise of Totalitarianism

- Japan
  Invasion of Manchuria, expulsion from League of Nations
  Second Sino-Japanese War
  Clashes with Soviet Russia
- Italy
  Benito Mussolini
  Emergence of Fascism
  Abyssinia Crisis, attack on Ethiopia
- Germany
  Weimar Republic: hyperinflation, border disputes, Great Depression, internal political disputes, President Paul von Hindenburg
  Adolf Hitler and rise of the Nazi Party
  Lebensraum, anti-Semitism, cult of the Fuhrer, Nazi ideology
  Mein Kampf by Adolf Hitler
  The Third Reich: Gestapo, propaganda, Brownshirts, Night of the Long Knives, Kristallnacht
- Spanish Civil War
  Fascism vs. Socialism: international interest and intervention (including artists and literati, e.g., Hemingway, Orwell, and Picasso)
  Francisco Franco
  Guernica

l. World War II—European Theatre

- Events Leading to War: Reoccupation of Rhineland, Anschluss, Munich Agreement, Molotov-Ribbentrop Pact
- Invasion of Poland, Fall of France, Battle of Dunkirk, Vichy France

- Winston Churchill and the Battle of Britain
- Holocaust: Dachau, Auschwitz, Bergen-Belsen
- Mediterranean Theater: North African Campaign, Italian attack on Egypt, German Afrika Korps under Erwin Rommel, Operation Torch, Operation Husky, Operation Avalanche
- Eastern Front: Operation Barbarossa; Battle of Leningrad, Stalingrad, Moscow; Battle of Berlin
- Western Front: D-Day Invasion, Operation Overlord, Operation Dragoon, Operation Market Garden, Battle of the Bulge
- Air war: Luftwaffe, bombing of London, Allied bombings of Dresden and Hamburg, V-1 flying bomb, V-2 missile
- Allied Conferences: Yalta, Casablanca, Potsdam

m. World War II—Pacific Theatre

- Attack on Pearl Harbor, Battle of Wake Island
- Major Naval Battles: Coral Sea, Midway
- Allied Campaigns: Solomon Islands, Guadalcanal, Gilbert and Marshall Islands, Mariana and Palau, Aleutian Islands
- Battle of Iwo Jima
- Battle of Okinawa
- Doolittle Raid, Bombing of Tokyo, Curtis LeMay
- Admiral Nimitz, General MacArthur
- Manhattan Project, Hiroshima, Nagasaki

n. Aftermath of WWII

- Creation of United Nations
- Division of Germany/Europe into Western and Soviet spheres of influence
- Nuremburg Trials
- Marshall Plan

o. Chinese Civil War

- Communist Party vs. Nationalist Party
- Generalissimo Chiang Kai-Shek, Chairman Mao Zedong
- Separation of Taiwan (Republic of China) from newly-formed People's Republic of China
- Great Leap Forward

- Great Proletarian Cultural Revolution

p. Start of the Cold War
   - Churchill's "Iron Curtain" speech
   - Spread of the Soviet Bloc
   - Truman Doctrine
   - Berlin Blockade

q. Cold War "Proxy Wars"
   - Greek Civil War
   - Korean War
   - Vietnam/French Indo-China
   - Cuban Revolution
   - Bay of Pigs Invasion, Cuban Missile Crisis
   - Afghan-Soviet War, Afghan Civil War
   - Falklands War

r. Eastern Block during the Cold War
   - Communist Leaders: Nikita Khrushchev, Leonid Brezhnev, Mikhail Gorbachev, Marshal Tito
   - Dissidents: Alexander Solzhenitsyn, Vaclav Havel,
   - Gulags, Kremlin, KGB

s. Conflicts in the Middle East
   - Background: territorial agreements coming out of WWI
   - Creation of Israel
   - Suez Crisis
   - Arab-Israeli Wars: Six-Day War; Israeli occupation of West Bank, Gaza Strip, Golan Heights; Yom Kippur War; OPEC oil embargo
   - Camp David Accords
   - Israeli-Palestinian Conflicts
   - Iran-Iraq War

t. Crisis and Collapse in the Soviet Union
   - Collapse of Communism in Warsaw Pact countries
     Fall of the Berlin Wall
     National political movements in Eastern Europe
     Revolutions of 1989

- ♦ Mikhail Gorbachev: end of Brezhnev doctrine, glasnost, perestroika, dissolution of the USSR
- ♦ Internal causes of collapse: economy, military spending, political unrest
- ♦ Ronald Reagan: rollback policy, arms race

u. Europe after the Cold War

- ♦ Breakup of Yugoslavia/Third Balkan War
- ♦ Formation of the European Union: Maastricht Treaty, Euro currency, basic institutions
- ♦ Russian Federation

III. 20th Century American History (Spring Semester)

Resources:

- *America: The Last Best Hope, Vol. 2-3*, William J. Bennett
- *A History of the American People*, Paul Johnson
- *American Heritage: A Reader* from Hillsdale College
- *The U.S. Constitution: A Reader* from Hillsdale College

a. 1900-WWI

i. Spanish-American War and Governance of the Philippines
ii. TR: Square Deal, Stewardship, Trust Busting
iii. Progressivism; Election of 1912

b. WWI

i. Election of 1916; American neutrality
ii. America in the war
iii. Versailles, the 14 Points, Woodrow Wilson

c. 1920s

i. 18th, 19th, 21st Amendments
ii. Harding and Coolidge Administrations
iii. American culture
iv. Stock market crash: Causes and 1928-32; Herbert Hoover

d. 1930s

i. The Great Depression
ii. The New Deal; FDR: Commonwealth Club Address, government employment programs, court-packing scheme

e. The Coming of War

i. Isolationism

   ii. Lend-Lease Act, Destroyers for Bases Agreement
   iii. Pearl Harbor

f. America in WWII
   i. European Theater
   ii. Pacific Theater

g. The Cold War
   i. Marshall Plan & spread of Soviet bloc
   ii. Korean War
   iii. America in 1950s and 60s: Truman, Eisenhower, Kennedy, McCarthy, Red Scare
   iv. Vietnam War

h. Civil Rights Movement
   i. Martin Luther King, Jr.: March on Selma, Letter from Birmingham Jail
   ii. Malcolm X
   iii. Civil Rights Act of 1964; Voting Rights Act of 1965
   iv. Barry Goldwater, election of 1964

i. Great Society
   i. Lyndon B. Johnson
   ii. Growth of government from New Deal to 1968
   iii. War on Poverty

j. 1970s and 1980s
   i. Social and political activism (1960s-70s)
   ii. Nixon, Ford, Watergate
   iii. Jimmy Carter
   iv. Cold War in the 70s and 80s
   v. America in the Middle East
   vi. Ronald Reagan

k. 1990s and 2000s
   i. George Bush, Bill Clinton, George W. Bush
   ii. War on Terror

IV. **Economics** (Fall Semester)

Resources:

- Economics Readings packet, Barney Charter School Initiative
- *Capitalist Manifesto*, Gary Wolfram
- *Economics in One Lesson*, Henry Hazlitt
- *How an Economy Grows and Why It Crashes*, Peter and Andrew Schiff

Teacher Resources:

- *The Economic Way of Thinking*, Paul Heyne, Peter J. Boettke, David L. Prychitko
- *Lessons for the Young Economist*, Robert Murphy
- *Economics for Real People*, Gene Callahan
- *Liberalism*, Ludwig von Mises

a. Principles of Economics
    i. Introduction to the Free Market: "I, Pencil"
    ii. Broken Window Fallacy, Blessings of Destruction, Efficiency, Exchange, Comparative Advantage
b. Supply and Demand
    i. How markets work
    ii. Demand: substitutes, elasticity of demand
    iii. Supply: elasticity, cost and choice
    iv. Equilibrium
c. Profit and the Price System
    i. The function of profit
    ii. Profit and loss
    iii. How the price system works
    iv. Income, saving, and investment
d. Supply, Demand, and Government Intervention
    i. Unintended Consequences
    ii. Price Fixing
    iii. Rent Control
    iv. Taxation
e. Macroeconomic Theory and the Role of Government
    i. Macroeconomic Theory
    ii. Measuring the performance of economic systems: GDP, GNP, Employment, Inflation
f. Money and the Role of Government
    i. Money

ii. Federal Reserve

g. Business Cycles
   i. Austrian view
   ii. Keynesian view

V. Mathematics

Resources:

- *Calculus: An Intuitive and Physical Approach,* Morris Kline
- *Calculus*, James Stewart

Note: Probability and Statistics may also be an option for some 12th grade math sections.

Fall Semester

a. Introduction to Calculus (Kline Ch. 1) (1 Week)
   i. The historical motivations for calculus
   ii. The creators of calculus
   iii. The nature of calculus
b. The Derivative (Kline Ch. 2) (3 Weeks)
   i. Functions and their graphs
      1. Supplemented by Stewart Ch. 1 on Mathematical Models/Graphs
   ii. Average and instantaneous speed
   iii. The method of increments
      1. Supplemented by Stewart Ch. 2 on Limits
   iv. The derived function
   v. The differentiation of simple monomials and polynomials
   vi. The second derivative
c. The Integral (Kline Ch. 3) (2 Weeks)
   i. The integral
   ii. Motion in various directions
   iii. Coordinate geometry of straight lines
d. The Geometrical Significance of the Derivative (Kline Ch. 4) (3 Weeks)
   i. The derivative as slope
   ii. The concept of tangent to a curve
   iii. Applications of the derivative as the slope
e. The Differentiation and Integration of Powers of x (Kline Ch. 5) (2 Weeks)

i. The functions x^n
ii. Calculus method of finding roots
iii. Differentiation and integration of x^n for fractional values of n

f. Differentiation and Integration Theorems (Kline Ch. 6) (2 Weeks)
   i. Differentiation of sums, differences, products, and quotients of functions
   ii. Integration of combinations of functions
   iii. The power rule for negative exponents
   iv. Work
g. The Chain Rule (Kline Ch. 7) (2.5 Weeks)
   i. Definition of the chain rule
   ii. Application of the chain rule to differentiation
   iii. The differentiation of implicit functions
   iv. Differentiation of the equations of ellipse and hyperbola
   v. Integration employing the chain rule
   vi. The problem of escape velocity
   vii. Related rates
   viii. Transformation of coordinates
h. Maxima and Minima (Kline Ch. 8) (2.5 Weeks)
   i. Geometrical approach to maxima and minima
   ii. Analytical treatment of maxima and minima
   iii. Applications of the method of maxima and minima
      1. Supplemented by Stewart Ch. 4 on Curve Sketching/Graph Shape
   iv. Economics
   v. Curve tracing

Spring Semester

i. The Definite Integral (Kline Ch. 9) (3 Weeks)
   i. Area as the limit of a sum
   ii. Evaluation of definite integrals
      1. Supplemented by Stewart Ch. 5 on Fundamental Theorem of Calc
   iii. Areas below the x-axis
   iv. Areas between curves
   v. Numerical methods for evaluating definite integrals
   vi. Sums of squares
j. Trigonometric Functions (Kline Ch. 10) (2 Weeks)

i. Sinusoidal functions
ii. Preliminaries on limits
iii. Differentiation and integration of trigonometric functions
iv. Applications of trigonometric functions to periodic phenomena

k. Inverse Trigonometric Functions (Kline Ch. 11) (2 Weeks)
i. Inverse functions
ii. Differentiation and integration of inverse trigonometric functions
iii. Change of variable in integration
iv. Time of motion under gravitational attraction

l. Logarithmic and Exponential Functions (Kline Ch. 12) (2 Weeks)
i. A review of logarithms and exponents
ii. The derived functions of logarithmic functions
iii. Exponential functions and their derived functions
iv. Problems of growth and decay
v. Logarithmic differentiation

m. Differentials and the Mean Value Theorem (Kline Ch. 13) (1 Week)
i. Differentials
ii. The mean value theorem of differential calculus
iii. Indeterminate forms

n. Further Integration Techniques (Kline Ch. 14) (2 Weeks)
i. Integration by parts
ii. Reduction formulas
iii. Integration by partial fractions
iv. Integration by substitution and change of variable
1. Supplemented by Stewart Ch. 7 all sections
v. The use of tables

o. Geometric Integral Applications (Kline Ch. 15) (2 Weeks)
i. Volumes of solids: cylinders, shells
ii. Lengths of arcs of curves
iii. Curvature
iv. Areas of surfaces of revolution
v. Approximating figures

p. Physical Applications of Integrals (Kline Ch. 16) (2 Weeks)
i. Calculation of work

ii. Applications to economics
iii. Hanging chain
iv. Gravitational attraction of rods, disks, and spheres

q. Taylor's theorem and infinite series (Kline Ch. 20) (2 Weeks)
    i. The approximation of functions by polynomials
    ii. Taylor's formula and applications; Taylor series
    iii. Tests for convergence and divergence
    iv. Absolute and conditional convergence
    v. The ratio test
    vi. Power series
        1. Supplemented by Stewart Ch. 11

VI. Science:

Resources for Biology II (teacher preference):

- *Biology*, Sylvia M. Mader
- *Campbell Biology*, Jane B. Reece

Resources for Chemistry II:

- *Chemistry,* Steven S. Zumdahl, Susan A. Zumdahl

Resources for Physics II (teacher preference):

- *College Physics*, Raymond A. Serway and Chris Vuille
- *Physics: Principles with Applications,* Douglas C. Giancoli

Resources for Earth Science:

- *Earth Science*, Edward J. Tarbuck and Frederick K. Lutgens

Note: BCSI recommends four years of high school science, and the course selected for the 12th grade can be driven by the school's faculty talent, or the particular cohort's preference. The courses and resources listed above would be good selections.