

Grade 5 Correlation of Core Knowledge® and Minnesota Academic Standards

Strand	Minnesota Academic Standards	Core Knowledge Sequence
<p><i>The specific content outlined in the Core Knowledge Sequence constitutes a solid foundation of knowledge in each subject area. This knowledge greatly helps students with their reading, as shown by the fact that reading scores go up in Core Knowledge Schools, because wide knowledge enhances students' ability to read diverse kinds of texts with understanding. Teachers need to remember that reading requires two abilities – the ability to turn print into language (decoding) and the ability to understand what the language says. Achieving the first ability – decoding – requires a sequential program, structured to provide guided practice in various formats and frequent review throughout the year. Decoding programs that are premised on scientifically-based research are: Open Court, Reading Mastery, and the Houghton Mifflin basal. But in addition to teaching decoding skills, a good language arts program will include coherent and interesting readings in the subject areas that enhance comprehension ability. No Language Arts program currently offers such coherent, substantive material, so, in addition to teaching the Language Arts topics in the Core Knowledge Sequence, Core Knowledge teachers are encouraged to substitute solid, interesting non-fiction readings in history and science for many of the short, fragmented stories in the basals, which unfortunately do not effectively advance reading comprehension.</i></p>		
<p>Language Arts</p>	<p>II.A.1. Write in a variety of modes to express meaning, including:</p> <ul style="list-style-type: none"> a. descriptive b. narrative c. informative d. formal letter e. poetry f. persuasive g. thank you notes h. reports. <p>II.B.1. Write topic sentences.</p> <p>II.B.2. Create multiple paragraph compositions that include:</p> <ul style="list-style-type: none"> a. correct paragraph indentation style b. an introductory paragraph formulating a thesis or opinion c. supporting evidence in paragraph form that upholds the overall thesis or opinion d. a concluding paragraph as a summary. <p>II.B.3. Use composing processes, including:</p> <ul style="list-style-type: none"> a. prewriting - planning strategies such as brainstorming, journaling, sketching, listing, outlining and determining audience, purpose and focus b. drafting – organizing, supporting and putting ideas into sentences and paragraphs c. revising – improving the quality of content, organization, sentence structure and 	<p>I. Writing, Grammar, and Usage</p> <p>A. Writing and Research</p> <ul style="list-style-type: none"> • Produce a variety of types of writing—including reports, summaries, letters, descriptions, research essays, essays that explain a process, stories, poems—with a coherent structure or story line. • Know how to gather information from different sources (such as an encyclopedia, magazines, interviews, observations, atlas, on-line), and write short reports synthesizing information from at least three different sources, presenting the information in his or her own words, with attention to the following: <ul style="list-style-type: none"> understanding the purpose and audience of the writing defining a main idea and sticking to it providing an introduction and conclusion organizing material in coherent paragraphs illustrating points with relevant examples documenting sources in a rudimentary bibliography

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	<p>word choice d. editing – correcting errors in spelling and grammar e. publishing – producing a document and sharing the writing with the audience.</p> <p>II.B.4. Create informative reports, including gathering material, formulating ideas based on gathered material, organizing information, and editing for logical progression.</p> <p>II.B.5. Consider the intended audience when composing text.</p> <p>II.D.1. Locate and keep notes on the information in various reference materials including print and online dictionaries, glossaries, encyclopedias, CD reference materials and the Internet.</p> <p>II.D.2. Formulate research questions and collect relevant information or perform observations that address such questions.</p> <p>II.D.3. Define plagiarism and avoid its use.</p>	
	<p>II.C.1. Compose complete sentences when writing.</p> <p>II.C.2. Edit written documents for correct spelling.</p> <p>II.C.3. Spell roots, suffixes, prefixes, contractions, and syllable constructions correctly.</p> <p>II.C.4. Apply grammar conventions correctly in writing, including:</p> <ul style="list-style-type: none"> a. verb tense b. prepositional phrases c. adverbs d. subject and verb agreement with simple subjects e. possessive pronouns and plural possessives. <p>II.C.5. Apply punctuation conventions correctly in writing, including:</p> <ul style="list-style-type: none"> a. apostrophes b. capitalization of proper nouns c. abbreviations d. sentence beginnings e. commas f. quotation marks. 	<p>B. Grammar and Usage</p> <ul style="list-style-type: none"> • Understand what a complete sentence is, and identify subject and predicate, correct fragments and run-ons • Identify subject and verb in a sentence and understand that they must agree. • Know the following parts of speech and how they are used: nouns, verbs (action verbs and auxiliary verbs), adjectives (including articles), adverbs, conjunctions, interjections. • Understand that pronouns must agree with their antecedents in case (nominative, objective, possessive), number, and gender. • Correctly use punctuation studied in earlier grades, as well as the colon before a list commas with an appositive • Use underlining or italics for titles of books.

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	II.E.1. Write legibly in cursive. II.E.2. Apply keyboarding skills	
	I.A.1. Read unfamiliar, complex and multi-syllabic words using advanced phonetic and structural analysis. I.B.1. Acquire, understand and use new vocabulary through explicit instruction as well as independent reading. I.B.2. Use knowledge of root words, derivations, antonyms, synonyms, idioms, homonyms and multiple-meaning words to determine word meanings and to understand texts. I.B.3. Use word reference materials, such as dictionaries, thesauruses, to understand and express word meaning. I.B.4. Analyze word structure and use context clues in order to understand new words.	<p>C. Vocabulary</p> <ul style="list-style-type: none"> Know how the following prefixes and suffixes affect word meaning: <p>Prefixes:</p> <ul style="list-style-type: none"> <i>anti</i> (as in antisocial, antibacterial) <i>inter</i> (as in interstate) <i>co</i> (as in coeducation, co-captain) <i>mid</i> (as in midnight, Midwest) <i>fore</i> (as in forefather, foresee) <i>post</i> (as in postseason, postwar) <i>il, ir</i> (as in illegal, irregular) <i>semi</i> (as in semicircle, semiprecious) <p>Suffixes:</p> <ul style="list-style-type: none"> <i>ist</i> (as in artist, pianist) <i>ish</i> (as in stylish, foolish) <i>ness</i> (as in forgiveness, happiness) <i>tion, sion</i> (as in relation, extension)
	I.A.2. Read aloud narrative and expository text with fluency, accuracy and appropriate pacing, intonation and expression II.C.1. Read aloud grade-appropriate text (that has not been previewed) with accuracy and comprehension. II.C.2. Recall and use prior learning and preview text to prepare for reading. II.C.3. Summarize and paraphrase key ideas from text. II.C.4. Identify main idea and supporting details in fiction text. II.C.5. Infer main ideas and determine relevant details in non-fiction texts. II.C.6. Generate graphic organizers to enhance comprehension of texts and to describe text structure and organization. II.C.7. Generate and answer literal, inferential, interpretive and evaluative questions to demonstrate understanding about what is read. II.C.8. Distinguish fact from opinion and provide evidence to support conclusions.	<p>II. Poetry</p> <p>A. Poems</p> <ul style="list-style-type: none"> 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 Dickinson) 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) Incident (Countee Cullen) 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)

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	<p>II.C.9. Determine cause and effect and draw conclusions.</p> <p>II.C.10. Compare and contrast information on the same topic from multiple sources.</p> <p>II.C.11. Critically read and evaluate text to identify author’s point of view and purpose.</p> <p>II.C.12. Notice when comprehension breaks down, reread and use strategies to self-correct.</p> <p>II.C.13. Follow multiple-step written directions.</p> <p>II.D.1. Read a variety of high quality, traditional, classical and contemporary literary works specific to America, as well as significant works from other countries.</p> <p>II.D.2. Identify and analyze literary elements and devices in works of fiction including characterization, plot, tone and theme and the ways they convey meaning.</p> <p>II.D.3. Evaluate nonfiction texts by analyzing structure, concept development, design and style.</p> <p>II.D.4. Interpret literature by answering questions that ask for analysis and evaluation.</p> <p>II.D.5. Distinguish among various literary genres and subgenres.</p> <p>II.D.6. Distinguish between third person omniscient and first person point of view.</p> <p>II.D.7. Identify and determine the meanings of similes and metaphors.</p> <p>II.D.8. Respond to literature using ideas and details from the text to support reactions and make literary connections.</p> <p>II.D.9. Read from and respond to a variety of fiction, poetic and nonfiction texts of increasing complexity for personal enjoyment.</p> <p>III.A.6. Perform expressive oral readings of prose, poetry or drama.</p>	<p>Some Opposites (Richard Wilbur) The Tiger (William Blake) A Wise Old Owl (Edward Hersey Richards)</p> <p>B. Terms onomatopoeia alliteration</p> <p>III. Fiction and Drama</p> <p>A. Stories The Adventures of Tom Sawyer (Mark Twain) episodes from <i>Don Quixote</i> (Miguel de Cervantes) <i>Little Women</i> (Part First) (Louisa May Alcott) <i>Narrative of the Life of Frederick Douglass</i> (Frederick Douglass) <i>The Secret Garden</i> (Frances Hodgson Burnett) Tales of Sherlock Holmes, including “The Red-Headed League” (Arthur Conan Doyle)</p> <p>B. Drama A Midsummer Night’s Dream (William Shakespeare)</p> <p>• Terms: tragedy and comedy act, scene Globe Theater</p> <p>C. Myths and Legends A Tale of the Oki Islands (a legend from Japan, also known as “The Samurai’s Daughter”) Morning Star and Scarface: the Sun Dance (a Plains Indian legend, also known as “The Legend of Scarface”) American Indian trickster stories (for example, tales of Coyote, Raven, or Grandmother Spider)</p> <p>D. Literary Terms</p> <p>• Pen name (pseudonym) • Literal and figurative language imagery metaphor and simile symbol personification</p>

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		<p>IV. Speeches Abraham Lincoln: The Gettysburg Address Chief Joseph (High'moot Tooyalakekt): "I will fight no more forever"</p>
		<p>V. Sayings and Phrases 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 of the hill. 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.</p>
	<p>III.A.1. Participate in and follow agreed-upon rules for conversation and formal discussions in large and small groups.</p>	

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	<p>III.A.2. Demonstrate active listening and comprehension.</p> <p>III.A.3. Distinguish between speaker’s opinion and verifiable facts.</p> <p>III.A.4. Give oral presentations to various audiences for different purposes.</p> <p>III.A.5. Restate or summarize and organize ideas sequentially using evidence to support opinions and main ideas.</p> <p>II.B.1. Identify distinctions in how information is presented in print and non-print materials.</p> <p>II.B.2. Make informed judgments about messages promoted in the media, such as those in film, television, radio and newspapers.</p> <p>II.B.3. Evaluate the accuracy and credibility of information found on Internet sites.</p>	
<p>History and Geography</p>	<p>G.V.A.1. Students will locate and name all 50 states, territories, mountain ranges, major river valleys, state capitals and cities, as studied.</p> <p>G.V.A.2. Students will locate the areas that were the major source regions for immigrants to the United States from 1800 to 1877.</p> <p>G.V.A.A.A.1. Students will locate on a map or globe the major empires of the late 19th Century and their largest overseas territories.</p> <p>G.V.A.A.A.3. Students will describe how the landownership patterns laid out by the French, English, Spanish, and the United States Public Land Survey created different landscapes in different parts of the country.</p> <p>G.V.B.3. Students will distinguish differences among, uses of and limitations of different kinds of thematic maps used to describe the development of the United States.</p> <p>G.V.B.4. Students will distinguish differences among uses of, and limitations of, different kinds of thematic maps to describe the development of Minnesota.</p>	<p>I. World Geography</p> <p>A. Spatial Sense (Working with Maps, Globes, and Other Geographic Tools)</p> <ul style="list-style-type: none"> • Read maps and globes using longitude and latitude, coordinates, degrees. • Tropic of Cancer and Tropic of Capricorn: relation to seasons and temperature • Climate zones: Arctic, Tropic, Temperate • Time zones (review from Grade 4): Prime Meridian (0 degrees); Greenwich, England; 180° Line (International Date Line) • Arctic Circle (imaginary lines and boundaries) and Antarctic Circle • From a round globe to a flat map: Mercator projection, conic and plane projections <p>B. Great Lakes of the World</p> <ul style="list-style-type: none"> • Eurasia: Caspian Sea • Asia: Aral Sea • Africa: Victoria, Tanganyika, Chad • North America: Superior, Huron, Michigan • South America: Maracaibo, Titicaca <p>IV. U. S. Geography</p> <ul style="list-style-type: none"> • Locate: Western Hemisphere, North America, Caribbean Sea, Gulf of

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	<p>G.V.C.C.C.1. Students will identify and compare and contrast the landforms, natural vegetation, climate, and systems of rivers and lakes of Minnesota with those of other parts of the United States.</p> <p>G.V.C.C.C.C.1. Students will describe the major physical features of the United States and the regions of the world they study.</p> <p>G.V.E.1. Students will demonstrate the ability to obtain geographic information from a variety of print and electronic sources.</p> <p>G.V.E.2. Students will make inferences and draw conclusions about the character of places based on analyses and comparison of maps, aerial photos, and other images.</p> <p>G.V.E.3. Students will locate major political and physical features of the United States and the world.</p>	<p>Mexico</p> <ul style="list-style-type: none"> • The Gulf Stream, how it affects climate • Regions and their characteristics: New England, Mid-Atlantic, South, Midwest, Great Plains, Southwest, West, Pacific Northwest • Fifty states and capitals
	<p>WH.III.B.3. Students will analyze the relationship between agriculture and the development of complex societies in Mesoamerica.</p> <p>WH.III.E.2. Students will demonstrate knowledge of the age of exploration.</p> <p>WH.III.F.1. Students will explain the characteristics of the trading system that linked peoples of Africa, Asia, and Europe around 1450.</p> <p>WH.III.F.2. Students will describe early European explorations, settlements, and empires.</p> <p>WH.III.F.4. Students will understand patterns of change in Africa in the era of the slave trade and the slave plantation system in the Americas.</p> <p>WH.III.F.5. Students will identify the causes and consequences of global migrations of Europeans, Africans, and Asians.</p>	<p>II. Meso-American Civilizations</p> <p>A. Geography</p> <ul style="list-style-type: none"> • Identify and locate Central America and South America on maps and globes. <ul style="list-style-type: none"> • Largest countries in South America: Brazil and Argentina • Amazon River • Andes Mountains <p>B. Maya, Inca, and Aztec Civilizations</p> <ul style="list-style-type: none"> • The Mayas <ul style="list-style-type: none"> • Ancient Mayas lived in what is now southern Mexico and parts of Central America; their descendants still live there today. • Accomplishments as architects and artisans: pyramids and temples • Development of a system of hieroglyphic writing • Knowledge of astronomy and mathematics; development of a 365-day calendar; early use of concept of zero • The Aztecs <ul style="list-style-type: none"> • A warrior culture, at its height in the 1400s and early 1500s, the Aztec empire covered much of what is now central Mexico. • The island city of Tenochtitlan: aqueducts, massive temples, etc. • Moctezuma (also spelled Montezuma)

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		<p>Ruler-priests; practice of human sacrifice</p> <ul style="list-style-type: none"> • The Inca <ul style="list-style-type: none"> Ruled an empire stretching along the Pacific coast of South America Built great cities (Machu Picchu, Cuzco) high in the Andes, connected by a system of roads <p>C. Spanish Conquerors</p> <ul style="list-style-type: none"> • Conquistadors: Cortés and Pizarro <ul style="list-style-type: none"> Advantage of Spanish weapons (guns, cannons) Diseases devastate native peoples <p>III. European Exploration, Trade, and the Clash of Cultures</p> <p>A. Background</p> <ul style="list-style-type: none"> • Beginning in the 1400s Europeans set forth in a great wave of exploration and trade. • European motivations <ul style="list-style-type: none"> Muslims controlled many trade routes. Profit through trade in goods such as gold, silver, silks, sugar, and spices Spread of Christianity: missionaries, Bartolomé de las Casas speaks out against enslavement and mistreatment of native peoples • Geography of the spice trade <ul style="list-style-type: none"> The Moluccas, also called the “Spice Islands”: part of present-day Indonesia Locate: the region known as Indochina, the Malay Peninsula, the Philippines Definition of “archipelago” “Ring of Fire”: earthquakes and volcanic activity <p>B. European Exploration, Trade, and Colonization</p> <ul style="list-style-type: none"> • Portugal <ul style="list-style-type: none"> 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

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		<p>Two worlds meet: Christopher Columbus and the Tainos Treaty of Tordesillas between Portugal and Spain Magellan crosses the Pacific, one of his ships returns to Spain, making the first round-the-world voyage Balboa reaches the Pacific</p> <ul style="list-style-type: none"> • England and France <ul style="list-style-type: none"> Search for Northwest Passage (review from grade 3) Colonies in North America and West Indies Trading posts in India • Holland (The Netherlands) <ul style="list-style-type: none"> 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 (review from grade 3), later lost to England <p>C. Trade and Slavery</p> <ul style="list-style-type: none"> • The sugar trade <ul style="list-style-type: none"> African slaves on Portuguese sugar plantations on islands off West African coast, such as São Tomé Sugar plantations on Caribbean islands West Indies: Cuba, Puerto Rico, Bahamas, Dominican Republic, Haiti, Jamaica • Transatlantic slave trade: the “triangular trade” from Europe to Africa to colonies in the Caribbean and the Americas <ul style="list-style-type: none"> The “Slave Coast” in West Africa The Middle Passage
	<p>WH.III.E.1. Students will demonstrate knowledge of the Renaissance in Europe.</p> <p>WH.III.E.3. Students will demonstrate knowledge of the Reformation including important figures of the era.</p>	<p>IV. The Renaissance and the Reformation</p> <p>A. The Renaissance</p> <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> The Medici Family and Florence The Popes and Rome • Leonardo da Vinci, Michelangelo

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		<ul style="list-style-type: none"> • Renaissance ideals and values as embodied in <i>The Courtier</i> by Castiglione: the “Renaissance man” <i>The Prince</i> by Machiavelli: real-world politics B. The Reformation • Gutenberg’s printing press: the Bible made widely available • The Protestant Reformation Martin Luther and the 95 Theses John Calvin • The Counter-Reformation • Copernicus and Galileo: Conflicts between science and the church Ptolemaic (earth-centered) vs. sun-centered models of the universe
		<p>V. England from the Golden Age to the Glorious Revolution</p> <p>A. England in the Golden Age</p> <ul style="list-style-type: none"> • Henry VIII and the Church of England • Elizabeth I • British naval dominance Defeat of the Spanish Armada Sir Francis Drake British exploration and North American settlements <p>B. From the English Revolution to the Glorious Revolution</p> <ul style="list-style-type: none"> • 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” (also called the Bloodless Revolution) King James II replaced by William and Mary Bill of Rights: Parliament limits the power of the monarchy
		<p>VI. Russia: Early Growth and Expansion</p> <p>A. History and Culture</p> <ul style="list-style-type: none"> • Russia as successor to Byzantine Empire: Moscow as new center of Eastern Orthodox Church and of Byzantine culture (after the fall of

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		<p>Constantinople in 1453)</p> <ul style="list-style-type: none"> • Ivan III (the Great), czar (from the Latin “Caesar”) • Ivan IV (the Terrible) • Peter the Great: modernizing and “Westernizing” Russia • Catherine the Great <ul style="list-style-type: none"> Reforms of Peter and Catherine make life even harder for peasants <p>B. Geography</p> <ul style="list-style-type: none"> • Moscow and St. Petersburg • Ural Mountains, Siberia, steppes • Volga and Don Rivers • Black, Caspian, and Baltic Seas • Search for a warm-water port
		<p>VII. Feudal Japan</p> <p>A. History and Culture</p> <ul style="list-style-type: none"> • Emperor as nominal leader, but real power in the hands of shoguns • Samurai, code of Bushido • Rigid class system in feudal Japanese society • Japan closed to outsiders • Religion <ul style="list-style-type: none"> Buddhism: the four Noble Truths and the Eightfold Path, Nirvana Shintoism: reverence for ancestors, reverence for nature, <i>kami</i> <p>B. Geography</p> <ul style="list-style-type: none"> • Pacific Ocean, Sea of Japan • Four main islands: Hokkaido, Honshu (largest), Shikoku, Kyushu • Tokyo • Typhoons, earthquakes • The Pacific Rim
	<p>H.I.E.1. Students will examine the processes that led to the territorial expansion of the United States including wars and treaties with foreign nations and Indian nations, the Mexican-American War, annexation, Louisiana Purchase and other land purchases, and the removal of American Indians to reservations.</p> <p>H.I.E.2. Students will analyze the impact of inventions and</p>	<p>I. Westward Expansion</p> <p>A. Westward Expansion Before the Civil War</p> <ul style="list-style-type: none"> • Early exploration of the west <ul style="list-style-type: none"> Daniel Boone, Cumberland Gap, Wilderness Trail Lewis and Clark, Sacagawea “Mountain men,” fur trade

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	<p>technologies on life in America, including the cotton gin, the steamboat, and the telegraph.</p> <p>M.II.B.1. Students will describe how early explorers and fur traders affected the development of Minnesota.</p> <p>M.II.C.1. Students will explain why early settlers came to Minnesota and analyze their impact on political, cultural, and physical landscapes.</p> <p>M.II.C.2. Students will describe the process of Minnesota’s becoming a territory and then a state.</p> <p>G.V.C.C.C.2. Students will identify physical features that shaped settlement and life-ways of the Dakota and the Ojibwe and analyze their impact.</p> <p>G.V.C.C.C.3. Students will identify physical features that either hindered or promoted the development of the fur trade and the rapid settlement in the early 19th Century.</p>	<p>Zebulon Pike, Pike’s Peak</p> <ul style="list-style-type: none"> • 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, Great Salt Lake Gold Rush, ’49ers • Geography Erie Canal connecting the Hudson River and Lake Erie Rivers: James, Hudson, St. Lawrence, Mississippi, Missouri, Ohio, Columbia, Rio Grande Appalachian and Rocky Mountains Great Plains stretching from Canada to Mexico Continental Divide and the flow of rivers: east of Rockies to the Arctic or Atlantic Oceans, west of Rockies to the Pacific Ocean • Indian resistance More and more settlers move onto Indian 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 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)
	<p>H.I.F.1. Students will identify and analyze the main ideas of the</p>	<p>II. The Civil War: Causes, Conflicts, Consequences</p>

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	<p>debate over slavery, abolitionism, states’ rights, and explain how they resulted in major political compromises.</p> <p>H.I.F.2. Students will identify on a map the states that seceded from the Union, and those that remained in the Union.</p> <p>H.I.FF.1. Students will know and understand the roles of significant figures and battles of the Civil War Era and analyze their significance, including Frederick Douglass, Abraham Lincoln, Jefferson Davis, Harriet Tubman and Battle of Gettysburg.</p> <p>H.I.FF.2. Students will analyze the aftermath of the war and its effects on citizens from the North and South including free blacks, women and former slaveholders.</p> <p>M.II.D.1. Students will describe the attitudes of Minnesotans toward slavery in the period before the Civil War and analyze the factors shaping these attitudes.</p> <p>M.II.D.2. Students will describe Minnesota’s role in the Civil War, both on the home front and on the battle-front, including the role of the First Minnesota Regiment.</p> <p>E.VI.A.4. Students will explain that a market exists when consumers buy and producers sell goods and services.</p> <p>E.VI.A.5. Students will explain how the price of a good is determined by supply and demand (the interrelationship between production and consumption).</p>	<p>A. Toward the Civil War</p> <ul style="list-style-type: none"> • Abolitionists: William Lloyd Garrison and <i>The Liberator</i>, 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 <ul style="list-style-type: none"> Missouri Compromise of 1820 Dred Scott decision allows slavery in the territories • Importance of Harriet Beecher Stowe’s <i>Uncle Tom’s Cabin</i> • John Brown, Harper’s Ferry • Lincoln: “A house divided against itself cannot stand.” <ul style="list-style-type: none"> Lincoln-Douglas debates Lincoln elected president, Southern states secede <p>B. The Civil War</p> <ul style="list-style-type: none"> • Fort Sumter • Confederacy, Jefferson Davis • Yankees and Rebels, Blue and Gray • First Battle of Bull Run • Robert E. Lee and Ulysses S. Grant • General Stonewall Jackson • Ironclad ships, battle of the USS <i>Monitor</i> and the CSS <i>Virginia</i> (formerly the USS <i>Merrimack</i>) • Battle of Antietam Creek • The Emancipation Proclamation • Gettysburg and the Gettysburg Address • African-American troops, Massachusetts Regiment led by Colonel Shaw • Sherman’s march to the sea, burning of Atlanta • Lincoln re-elected, concluding words of the Second Inaugural Address (“With malice toward none, with charity for all. . .”) • Richmond (Confederate capital) falls to Union forces • Surrender at Appomattox • Assassination of Lincoln by John Wilkes Booth
	<p>H.I.G.2. Students will identify and explain racial segregation and racism, including the rise of “Jim Crow,” the Ku Klux Klan, discrimination against immigrants, and the relocation of American Indian tribes to reservations, and</p>	<p>B. Westward Expansion After the Civil War</p> <ul style="list-style-type: none"> • Homestead Act (1862), many thousands of Americans and immigrants start farms in the West • “Go west, young man” (Horace Greeley’s advice)

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	<p>analyze the impact of these actions.</p> <p>M.II.A.1. Students will describe the evidence of the indigenous cultures in Minnesota, and make reasoned inferences from that evidence.</p> <p>M.II.A.2. Students will explain the major historical aspects of Dakota and Ojibwe culture, social organization and history, and compare and contrast them.</p> <p>M.II.B.2. Students will describe the economic and cultural impact of the interaction between the Dakota and Ojibwe and the explorers and fur traders.</p> <p>M.II.C.3. Students will understand why and how the Minnesota Indian Nations negotiated treaties with the United States, and the impact of these treaties for the Ojibwe, the Dakota, and the settlers.</p> <p>M.II.D.3. Students will compare the different perspectives of settlers and Dakota people on the causes and the effects of the Dakota War of 1862.</p> <p>GC.VII.D.D.5. Students will explain the relationship between American Indian People and Nations and Minnesota and the U.S. Government.</p>	<ul style="list-style-type: none"> • 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 <p>III. Native Americans: Cultures and Conflicts</p> <p>A. Culture and Life</p> <ul style="list-style-type: none"> • Great Basin and Plateau (for example, Shoshone, Ute, Nez Perce) <ul style="list-style-type: none"> • Northern and Southern Plains (for example, Arapaho, Cheyenne, Lakota [Sioux], Shoshone, Blackfoot, Crow) • Extermination of buffalo (review from grade 2) • Pacific Northwest (for example, Chinook, Kwakiutl, Yakima) <p>B. American Government Policies</p> <ul style="list-style-type: none"> • Bureau of Indian Affairs • Forced removal to reservations • Attempts to break down tribal life, assimilation policies, Carlisle School <p>C. Conflicts</p> <ul style="list-style-type: none"> • Sand Creek Massacre • Little Big Horn: Crazy Horse, Sitting Bull, Custer’s Last Stand • Wounded Knee • Ghost Dance <p>C. Reconstruction</p> <ul style="list-style-type: none"> • The South in ruins • Struggle for control of the South, Radical Republicans vs. Andrew Johnson, impeachment • Carpetbaggers and scalawags • Freedmen’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

Strand	<i>Minnesota Academic Standards</i>	<i>Core Knowledge Sequence</i>
	<p>HS.IV.A.1. Students will develop a chronological sequence of persons, events and concepts in each historical era studied in these grades.</p> <p>HS.IV.B.1. Students will identify, describe, and extract information from various types of historical sources, both primary and secondary.</p> <p>HS.IV.B.2. Students will assess the credibility and determine appropriate use of different sorts of sources.</p> <p>HS.IV.B.3. Students will investigate the ways historians learn about the past if there are no written records.</p> <p>HS.IV.C.1. Students will define a research topic that can be studied using a variety of historical sources.</p> <p>HS.IV.C.2. Students will identify, locate, and use repositories of research materials including libraries, the Internet, historical societies, historic sites, and archives, as appropriate for their project.</p> <p>HS.IV.C.3. Students will develop strategies to find, collect, and organize historical research.</p> <p>HS.IV.CC. 1. Students will understand that primary sources document first-hand accounts of historical events and secondary sources may be influenced by the author’s interpretation of historical events.</p> <p>HS.IV.CC. 2. Students will compare perspectives in primary and secondary sources and determine how the different perspectives shaped the authors’ view of historical events.</p> <p>HS.IV.CC. 3. Students will understand the concepts of historical context and multiple causation.</p> <p>HS.IV.CC. 4. Students will create a timeline that illustrates the relationship of their topic to other historic events.</p>	<p><i>These are social studies skills that can be used with any Core Knowledge social studies topic.</i></p>
Visual Arts	<p>AE.VA.D.1. understand the following components of visual arts: a. elements, including color, line, shape, form, texture, and space; b. principles, such as repetition, contrast, or balance; and</p>	<p>I. Art of the Renaissance</p> <ul style="list-style-type: none"> • The 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

Strand	Minnesota Academic Standards	Core Knowledge Sequence
	<p>c. vocabulary; AE.VA.D.2. understand the cultural and historical forms or traditions of visual arts; AE.VA.D.3. understand how visual arts elements are similar to and different from the elements of other arts areas, such as dance, music, or theater;</p>	<p>subject matter, idealization of human form, balance and proportion)</p> <ul style="list-style-type: none"> • The development of linear perspective during the Italian Renaissance <ul style="list-style-type: none"> The vantage point or point-of-view of the viewer Convergence of parallel 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 <ul style="list-style-type: none"> Sandro Botticelli, <i>The Birth of Venus</i> Leonardo da Vinci: <i>The Proportions of Man, Mona Lisa, The Last Supper</i> Michelangelo, Ceiling of the Sistine Chapel, especially the detail known as <i>The Creation of Adam</i> Raphael: <i>The Marriage of the Virgin</i>, examples of his Madonnas (such as <i>Madonna and Child with the Infant St. John, The Alba Madonna, or The Small Cowper Madonna</i>) • Become familiar with Renaissance sculpture, including <ul style="list-style-type: none"> Donatello, <i>Saint George</i> Michelangelo, <i>David</i> • Become familiar with Renaissance architecture, including <ul style="list-style-type: none"> The Florence Cathedral, dome designed by Filippo Brunelleschi St. Peter’s in Rome • Observe and discuss paintings of the Northern Renaissance, including <ul style="list-style-type: none"> Pieter Bruegel, <i>Peasant Wedding</i> Albrecht Dürer, <i>Self-Portrait</i> (such as from 1498 or 1500) Jan van Eyck, <i>Giovanni Arnolfini and His Wife</i> (also known as <i>Arnolfini Wedding</i>) <p>II. American Art: Nineteenth-Century United States</p> <ul style="list-style-type: none"> • Become familiar with the Hudson River School of landscape painting, including <ul style="list-style-type: none"> Thomas Cole, <i>The Oxbow (The Connecticut River Near Northampton)</i> (also known as <i>View from Mount Holyoke, Northampton, Massachusetts, after a Thunderstorm</i>) Albert Bierstadt, <i>Rocky Mountains, Lander’s Peak</i> • Become familiar with genre paintings, including <ul style="list-style-type: none"> George Caleb Bingham, <i>Fur Traders Descending the Missouri</i> William Sidney Mount, <i>Eel Sparring at Setauket</i> • Become familiar with art related to the Civil War, including

Strand	Minnesota Academic Standards	Core Knowledge Sequence
		<p>Civil War photography of Matthew Brady and his colleagues <i>The Shaw Memorial</i> sculpture of Augustus Saint-Gaudens</p> <ul style="list-style-type: none"> • Become familiar with popular prints by Currier and Ives. <p>III. Art of Japan</p> <ul style="list-style-type: none"> • Become familiar with The Great Buddha (also known as the Kamakura Buddha) Landscape gardens
	<p>AE.VA.D.4. use elements, principles, skills, and techniques of at least three different mediums; and AE.VA.D.5. create original works of art to express specific artistic ideas.</p>	<p><i>These skills can be used with any of the visual arts content</i></p>
<p>Music</p>	<p>AE.MuI.B.1. understand the following components of music: a. elements, including melody, rhythm, harmony, dynamics, tone color, texture, and form; and b. vocabulary;</p> <p>AE.MuI.B.5. improvise and compose rhythms, melodies, and accompaniments using classroom instruments, voice, or both to express a specific musical idea;</p> <p>AE.MuI.B.6. perform rhythmic, melodic, and harmonic patterns on classroom instruments;</p> <p>AE.MuI.B.7. read and write music using a system of musical notation.</p>	<p>I. Elements of Music</p> <ul style="list-style-type: none"> • 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; <i>accelerando</i> and <i>ritardando</i>. Discriminate between differences in pitch: high and low. Discriminate between loud and quiet; gradually increasing and decreasing volume; <i>crescendo</i> and <i>decrescendo</i>. Understand <i>legato</i> (smoothly flowing progression of notes) and <i>staccato</i> (crisp, distinct notes). Sing unaccompanied, accompanied, and in unison. Recognize harmony; sing rounds and canons; two- and three-part singing. 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. • Understand 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

Strand	Minnesota Academic Standards	Core Knowledge Sequence
		rest, half rest, quarter rest, eighth rest, grouped sixteenth notes, tied and dotted notes, sharps, flats, <i>Da capo</i> [D] <i>al fine</i> , meter signature, common time, dynamics
	<p>AE.MuI.B.2. understand cultural and historical forms or traditions of music;</p> <p>AE.MuI.B.4. sing or play traditional instruments alone and sing rounds and part songs or play traditional instruments in a group;</p>	<p>II. Listening and Understanding</p> <p>A. Composers and Their Music</p> <ul style="list-style-type: none"> • Ludwig van Beethoven, <i>Symphony No. 5</i> • Modest Mussorgsky, <i>Pictures at an Exhibition</i> (as orchestrated by Ravel) <p>B. Musical Connections</p> <ul style="list-style-type: none"> • Music from the Renaissance (such as choral works of Josquin Desprez; lute songs by John Dowland) • Felix Mendelssohn, Overture, Scherzo, and Wedding March from <i>A Midsummer Night’s Dream</i> <p>III. American Musical Traditions</p> <ul style="list-style-type: none"> • Spirituals <ul style="list-style-type: none"> Originated by African-Americans, many spirituals go back to the days of slavery. Familiar spirituals, such as: <ul style="list-style-type: none"> Down by the Riverside Sometimes I Feel Like a Motherless Child Wayfaring Stranger We Shall Overcome <p>IV. Songs</p> <ul style="list-style-type: none"> 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

Strand	Minnesota Academic Standards	Core Knowledge Sequence
		Shenandoah Sweet Betsy from Pike
	AE.MuI.B.3. understand how musical elements are similar to and different from the elements of other arts areas, such as dance, theater, or visual arts;	<i>These skills can be used with any of the music content.</i>
<p>The specific content outlined in the Core Knowledge Sequence constitutes a solid foundation of knowledge in each subject area. It is also critically important to establish a similar sequential program in Mathematics, structured to provide guided practice in various formats and frequent review throughout the year. Mathematics programs that follow sound cognitive principles and therefore lead to greater student mastery are: Singapore Math, Saxon Math, and Direct Instruction Mathematics.</p>		
<p>Mathematics</p>	<p>II.A.2. Represent and compare positive and negative integers symbolically and on the number line and use them to solve real-world and mathematical problems.</p> <p>II.A.4. Use a variety of estimation strategies such as rounding, truncation, over- and underestimation and decide when an estimated solution is appropriate.</p>	<p>I. Numbers and Number Sense</p> <ul style="list-style-type: none"> • Read and write numbers (in digits and words) up to the billions. • Recognize place value up to billions. • Order and compare numbers to 999,999,999 using the signs <, >, and = . • Write numbers in expanded form. • Integers <ul style="list-style-type: none"> Locate positive and negative integers on a number line. Compare integers using the symbols <, >, = . Know that the sum of an integer and its opposite is 0. Add and subtract positive and negative integers. • Using a number line, locate positive and negative whole numbers. • Round to the nearest ten; to the nearest hundred; to the nearest thousand; to the nearest hundred-thousand. • Exponents <ul style="list-style-type: none"> Review perfect squares and square roots to 144; recognize the square root sign, $\sqrt{\quad}$. Using the terms <i>squared</i> and <i>cubed</i> and <i>to the nth power</i>, read and evaluate numerical expressions with exponents. Identify the powers of ten up to 10^6. • Identify a set and the members of a set, as indicated by { }. • Identify numbers under 100 as prime or composite. • Identify prime factors of numbers to 100 and write using exponential notation for multiple primes. • Determine the greatest common factor (GCF) of given numbers. • Determine the least common multiple (LCM) of given numbers.
		<p>II. Ratio and Percent</p>

Strand	Minnesota Academic Standards	Core Knowledge Sequence
		<p>A. Ratio</p> <ul style="list-style-type: none"> • Determine and express simple ratios. • Use ratio to create a simple scale drawing. • Ratio and rate: solve problems on speed as a ratio, using the formula $S = d/t$ (or $D = r \times t$).
	<p>II.A.1. Read and write numbers up to three decimal places in numerals and words.</p> <p>II.A.3. Recognize equivalent common fractions, decimals and percentages.</p> <p>II.B.6. Model simple problems, arising from concrete situations, involving the addition and subtraction of common fractions and mixed numbers as well as fractions where the common denominator equals one of the denominators.</p> <p>II.B.7. Interpret percents as a part of a hundred.</p>	<p>II. Ratio and Percent</p> <p>B. Percent</p> <ul style="list-style-type: none"> • Recognize the percent sign (%) and understand percent as “per hundred.” • Express equivalences between fractions, decimals, and percents, and know common equivalences: $\frac{1}{10} = 10\%$ $\frac{1}{4} = 25\%$ $\frac{1}{2} = 50\%$ $\frac{3}{4} = 75\%$ <p>Find the given percent of a number</p> <p>III. Fractions and Decimals</p> <p>A. Fractions</p> <ul style="list-style-type: none"> • Determine the least common denominator (LCD) of fractions with unlike denominators. • Recognize equivalent fractions (for example, $\frac{1}{2} = \frac{3}{6}$). • Put fractions in lowest terms. • Compare fractions with like and unlike denominators, using the signs $<$, $>$, and $=$. • Identify the reciprocal of a given fraction; know that the product of a given number and its reciprocal = 1. • Add and subtract mixed numbers and fractions with like and unlike denominators. • Multiply and divide fractions. • Add and subtract fractions with like and unlike denominators. • Add and subtract mixed numbers and fractions; multiply mixed numbers and fractions. • Round fractions to the nearest whole number. • Write fractions as decimals (e.g., $\frac{1}{4} = 0.25$; $\frac{17}{25} = 0.68$; $\frac{1}{3} = 0.3333 \dots$ or 0.33, rounded to the nearest hundredth).

Strand	Minnesota Academic Standards	Core Knowledge Sequence
		<p>B. Decimals</p> <ul style="list-style-type: none"> • Read, write, and order decimals to the nearest ten-thousandth. • Write decimals in expanded form. • Read and write decimals on a number line. • Round decimals (and decimal quotients) to the nearest tenth; to the nearest hundredth; to the nearest thousandth. • Estimate decimal sums, differences, and products by rounding. • Add and subtract decimals through ten-thousandths. • Multiply decimals: by 10, 100, and 1,000; by another decimal. • Divide decimals by whole numbers and decimals.
	<p>II.B.1. Use addition, subtraction, multiplication and division of multi-digit whole numbers to solve multi-step, real-world and mathematical problems.</p> <p>II.B.2. Add and subtract numbers with up to two decimal places in real-world or mathematical problems.</p> <p>II.B.3. Add and subtract, without a calculator, numbers containing up to five digits such as $546.23 - 84.1$.</p> <p>II.B.4. Multiple, without a calculator, a two-digit whole number or decimal by a two-digit whole number or decimal, such as 3.2×3.4.</p> <p>II.B.5. Multiple, without a calculator, a three-digit whole number or decimal by a one-digit whole number or decimal such as 3.51 divided by 3.</p>	<p>IV. Computation</p> <p>A. Addition</p> <ul style="list-style-type: none"> • Commutative and associative properties: know the names and understand the properties. <p>B. Multiplication</p> <ul style="list-style-type: none"> • Commutative, associative, and distributive properties: know the names and understand the properties. • Multiply two factors of up to four digits each. • Write numbers in expanded form using multiplication. • Estimate a product. • Use mental computation strategies for multiplication, such as breaking a problem into partial products, for example: $3 \times 27 = (3 \times 20) + (3 \times 7) = 60 + 21 = 81$. • Solve word problems involving multiplication. <p>C. Division</p> <ul style="list-style-type: none"> • Understand multiplication and division as inverse operations. • Know what it means for one number to be “divisible” by another number. • Know that you cannot divide by 0; that any number divided by 1 = that number. • Estimate the quotient. • Know how to move the decimal point when dividing by 10, 100, or 1,000. • Divide dividends up to four digits by one-digit, two-digit, and three-digit divisors. • Solve division problems with remainders; round a repeating decimal quotient. • Check division by multiplying (and adding remainder).

Strand	Minnesota Academic Standards	Core Knowledge Sequence
	<p>I.1. Communicate, reason and represent situations mathematically.</p> <p>I.2. Solve problems by distinguishing relevant from irrelevant information, sequencing and prioritizing information and breaking multi-step problems into simpler parts.</p> <p>I.3. Evaluate the reasonableness of the solution by considering appropriate estimates and the context of the original problem.</p> <p>I.4. Know when it is appropriate to estimate and when an exact answer with whole numbers, fractions or decimals is needed.</p> <p>I.5. Express a written problem in suitable mathematical language, solve the problem and interpret the result in the original context.</p> <p>I.6. Support mathematical results using pictures, numbers, and words to explain why the steps in a solution are valid and why a particular solution method is appropriate.</p> <p>I.7. Organize, record and communicate math ideas coherently and clearly.</p> <p>III.B.1. Evaluate numeric expressions in real-world and mathematical problems.</p>	<p>D. Solving Problems and Equations</p> <ul style="list-style-type: none"> • Solve word problems with multiple steps. • Solve problems with more than one operation. <p>VIII. Pre-Algebra</p> <ul style="list-style-type: none"> • Recognize variables and solve basic equations using variables. • Write and solve equations for word problems. • Find the value of an expression given the replacement values for the variables, for example: What is $7 - c$ if c is 3.5?
		<p>V. Measurement</p> <ul style="list-style-type: none"> • Convert to common units in problems involving addition and subtraction of different units. • Time: Solve problems on elapsed time; regroup when multiplying and dividing amounts of time.
	<p>V.A.1. Identify reflection and rotation symmetries in two-dimensional shapes and designs.</p> <p>V.B.1. Sort three-dimensional objects according to number and shape of faces, number of edges and vertices.</p> <p>V.B.2. Classify, compare and identify acute, right and obtuse angles.</p> <p>V.B.3. Classify polygons as regular or irregular.</p> <p>V.B.4. Know the sum of the angles in triangles and quadrilaterals.</p>	<p>VI. Geometry</p> <ul style="list-style-type: none"> • Identify and draw points, segments, rays, lines. • Identify and draw lines: horizontal; vertical; perpendicular; parallel; intersecting. • Measure the degrees in angles, and know that <ul style="list-style-type: none"> right angle = 90° acute angle: less than 90° obtuse angle: greater than 90° straight angle = 180°

Strand	Minnesota Academic Standards	Core Knowledge Sequence
	<p>V.C.1. Find the area and perimeter of a triangle by measuring or using a grid, and label the answer with appropriate units.</p> <p>V.C.2. Use a two-dimensional pattern of a cube or rectangular box to compute the surface area.</p> <p>V.C.3. Select and apply the appropriate units and tools to measure perimeter, area and capacity.</p>	<ul style="list-style-type: none"> • Identify and construct different kinds of triangles: equilateral, right, and isosceles. • Know what it means for triangles to be congruent. • Identify polygons: <ul style="list-style-type: none"> triangle, quadrilateral, pentagon, hexagon, and octagon parallelogram, trapezoid, rhombus, rectangle, square • Know that regular polygons have sides of equal length and angles of equal measure. • Identify and draw diagonals of polygons. • Circles <ul style="list-style-type: none"> Identify arc, chord, radius (plural: radii), and diameter (radius = 1/2 diameter). Using a compass, draw circles with a given diameter or radius. Find the circumference of a circle using the formulas $C = \pi d$, and $C = 2 \pi r$, using 3.14 as the value of π. • Area <ul style="list-style-type: none"> Review the formula for the area of a rectangle (Area = length x width) and solve problems involving finding area in a variety of square units (such as mi^2; yd^2; ft^2; in^2; km^2; m^2; cm^2; mm^2). Find the area of triangles, using the formula $A = \frac{1}{2}(b \times h)$. Find the area of a parallelogram using the formula $A = b \times h$. Find the area of an irregular figure (such as a trapezoid) by dividing into regular figures for which you know how to find the area. Compute volume of rectangular prisms in cubic units (cm^3, in^3), using the formula $V = l \times w \times h$. Find the surface area of a rectangular prism.
	<p>III.A.1. Identify patterns in numbers, shapes, tables, and graphs and explain how to extend those patterns.</p> <p>IV.A.1. Determine whether or not a given graph matches a given data set.</p> <p>IV.A.2. Use fractions and percentages to compare data sets.</p> <p>IV.A.3. Collect data using measurements, surveys or experiments and represent the data with tables and graphs with labeling.</p> <p>IV.A.4. Find mean, mode, median, and range of a data set.</p>	<p>VII. Probability and Statistics</p> <ul style="list-style-type: none"> • Understand probability as a measure of the likelihood that an event will happen; using simple models, express probability of a given event as a fraction, as a percent, and as a decimal between 0 and 1. • Collect and organize data in graphic form (bar, line, and circle graphs). • Solve problems requiring interpretation and application of graphically displayed data. • Find the average (mean) of a given set of numbers. • Plot points on a coordinate plane, using ordered pairs of positive and negative whole numbers. • Graph simple functions.

Strand	Minnesota Academic Standards	Core Knowledge Sequence
	<p>IV.B.1. Represent all possible outcomes for a simple probability problem with tables and grids, and draw conclusions from the results.</p>	
<p>Science</p>	<p>IV.E.2. The student will recognize that extinction of a species occurs when the environment changes and the adaptive characteristics of a species are insufficient to allow its survival.</p> <p>IV.E.3. The student will compare the structure of fossils to one another and to living organisms.</p>	<p>I. Classifying Living Things</p> <ul style="list-style-type: none"> • Scientists have divided living things into five large groups called kingdoms, as follows: <ul style="list-style-type: none"> Plant Animal Fungus (mushrooms, yeast, mold, mildew) Protist (algae, protozoans, amoeba, euglena) Moneran (bacteria, blue-green algae) • Each kingdom is divided into smaller groupings as follows: <ul style="list-style-type: none"> Kingdom Phylum Class Order Family Genus Species (Variety) • When classifying living things, scientists use special names made up of Latin words (or words made to sound like Latin words), which help scientists around the world understand each other and ensure that they are using the same names for the same living things. <ul style="list-style-type: none"> <i>Homo sapiens</i>: the scientific name for the species to which human beings belong (genus <i>Homo</i>, species <i>sapiens</i>) Taxonomists: biologists who specialize in classification • Different classes of vertebrates and major characteristics: fish, amphibians, reptiles, birds, mammals (review from grade 3) <p>VII. Science Biographies</p> <p>Carl Linnaeus</p>
	<p>IV.F.1. The student will recognize that organisms need energy to stay alive and grow, and that this energy originates from the sun.</p>	<p>II. Cells: Structures and Processes</p> <ul style="list-style-type: none"> • All living things are made up of cells. • Structure of cells (both plant and animal) <ul style="list-style-type: none"> Cell membrane: selectively allows substances in and out Nucleus: surrounded by nuclear membrane, contains genetic material, divides for reproduction

Strand	Minnesota Academic Standards	Core Knowledge Sequence
		<p>Cytoplasm contains organelles, small structures that carry out the chemical activities of the cell, including mitochondria (which produce the cell’s energy) and vacuoles (which store food, water, or wastes).</p> <ul style="list-style-type: none"> • Plant cells, unlike animal cells, have cell walls and chloroplasts. • Cells without nuclei: monerans (bacteria) • Some organisms consist of only a single cell: for example, amoeba, protozoans, some algae. • Cells are shaped differently in order to perform different functions. • Organization of cells into tissues, organs, and systems: <ul style="list-style-type: none"> In complex organisms, groups of cells form tissues (for example, in animals, skin tissue or muscle tissue; in plants, the skin of an onion or the bark of a tree). Tissues with similar functions form organs (for example, in some animals, the heart, stomach, or brain; in some plants, the root or flower). In complex organisms, organs work together in a system (recall, for example, from earlier studies of the human body, the digestive, circulatory, and respiratory systems). <p>III. Plant Structures and Processes</p> <p>A. Structure: Non-vascular and Vascular Plants</p> <ul style="list-style-type: none"> • Non-vascular plants (for example, algae) • Vascular plants <ul style="list-style-type: none"> 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 <p>B. Photosynthesis</p> <ul style="list-style-type: none"> • Photosynthesis is an important life process that occurs in plant cells, but not animal cells (photo = light; synthesis = putting together). Unlike animals, plants make their own food, through the process of photosynthesis. • Role in photosynthesis of: energy from sunlight, chlorophyll, carbon dioxide and water, xylem and phloem, stomata, oxygen, sugar (glucose) <p>C. Reproduction</p> <ul style="list-style-type: none"> • Asexual reproduction <ul style="list-style-type: none"> Example of algae Vegetative reproduction: runners (for example, strawberries) and

Strand	Minnesota Academic Standards	Core Knowledge Sequence
		<p>bulbs (for example, onions), growing plants from eyes, buds, leaves, roots, and stems</p> <ul style="list-style-type: none"> • Sexual reproduction by spore-bearing plants (for example, mosses and ferns) • Sexual reproduction of non-flowering seed plants: conifers (for example, pines), male and female cones, wind pollination • Sexual reproduction of flowering plants (for example, peas) <ul style="list-style-type: none"> Functions of sepals and petals, stamen (male), anther, pistil (female), ovary (or ovule) 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 (sprouting of new plant), monocots (for example, corn) and dicots (for example, beans)
	<p>IV.E.1. The student will recognize that individuals of the same species differ in their characteristics and that sometimes the differences give individuals an advantage in surviving and reproducing.</p> <p>IV.F.2. The student will use food webs to describe the relationships among producers, consumers, and decomposers in an ecosystem in Minnesota.</p> <p>IV.F.3. The student will recognize that organisms are growing, dying and decaying, and that their matter is recycled.</p>	<p>IV. Life Cycles and Reproduction</p> <p>A. The Life Cycle and Reproduction</p> <ul style="list-style-type: none"> • Life cycle: development of an organism from birth to growth, reproduction, death <ul style="list-style-type: none"> Example: Growth stages of a human: embryo, fetus, newborn, infancy, childhood, adolescence, adulthood, old age • All living things reproduce themselves. Reproduction may be asexual or sexual. <ul style="list-style-type: none"> 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. <p>B. Sexual Reproduction in Animals</p> <ul style="list-style-type: none"> • 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 <p>VII. Science Biographies</p> <p>Ernest Just</p>

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		<p>V. The Human Body</p> <p>A. Changes in Human Adolescence</p> <ul style="list-style-type: none"> • Puberty <ul style="list-style-type: none"> Glands and hormones (see below, Endocrine System), growth spurt, hair growth, breasts, voice change <p>B. The Endocrine System</p> <ul style="list-style-type: none"> • The human body has two types of glands: duct glands (such as the salivary glands), and ductless glands, also known as endocrine glands. • Endocrine glands secrete (give off) 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 (which can be controlled) • Adrenal glands: secrete a hormone called adrenaline, especially when a person is frightened or angry, causing rapid heartbeat and breathing <p>C. The Reproductive System</p> <ul style="list-style-type: none"> • 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
		<p>VI. Chemistry: Matter and Change</p> <p>A. Atoms, Molecules, and Compounds</p> <ul style="list-style-type: none"> • Basics of atomic structure: nucleus, protons (positive charge), neutrons (neutral), electrons (negative charge) • 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: <ul style="list-style-type: none"> water H₂O salt NaCl

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		<p>carbon dioxide CO₂</p> <p>B. Elements</p> <ul style="list-style-type: none"> • 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 Atomic symbol and atomic number • Some well-known elements and their symbols: <ul style="list-style-type: none"> 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 <p>C. Chemical and Physical Change</p> <ul style="list-style-type: none"> • Chemical change changes what a molecule is made up of 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 changes 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 <p>VII. Science Biographies Percy Lavon Julian</p>
		<p>VII. Science Biographies Galileo</p>
	<p>I.A.1. The student will know that current scientific knowledge</p>	<p><i>These are science process skills that can be used with any Core Knowledge</i></p>

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	<p>and understanding guide scientific investigation.</p> <p>I.A.2. The student will recognize that clear communication of methods, findings and critical review is an essential part of doing science.</p> <p>I.B.1. The student will perform a controlled experiment using a specific step-by-step procedure and present conclusions supported by the evidence.</p> <p>I.B.2. The student will observe that when a science investigation or experiment is repeated, a similar result is expected.</p> <p>I.C.1. The student will describe different kinds of work done in science and technology.</p> <p>I.C.2. The student will identify men and women of various backgrounds and ages who have been involved in science and technology, both past and present.</p>	<p><i>topic.</i></p>
	<p>III.A.1. The student will recognize the natural processes that cause rocks to break down into smaller pieces and eventually into soil.</p> <p>III.A.2. The student will investigate the formation, composition and properties of soil.</p> <p>III.A.3. The student will describe how waves, wind, water and ice shape and reshape the Earth’s surface.</p> <p>III.A .4. The student will describe the impact of floods, tornadoes, earthquakes and volcanoes on the Earth.</p> <p>III.A .5. The student will explore the interaction of the lithosphere, atmosphere, biosphere, hydrosphere and space.</p>	<p>MOVED FROM GRADE 4 CORE KNOWLEDGE</p> <p>IV. Geology: The Earth and Its Changes</p> <p>A. The Earth’s Layers</p> <ul style="list-style-type: none"> • Crust, mantle, core (outer core and inner core) • Movement of crustal plates • Earthquakes <ul style="list-style-type: none"> Faults, San Andreas fault Measuring intensity: seismograph and Richter Scale Tsunamis (also called tidal waves) • Volcanos <ul style="list-style-type: none"> Magma Lava and lava flow Active, dormant, or extinct Famous volcanoes: Vesuvius, Krakatoa, Mount St. Helens • Hot springs and geysers: Old Faithful (in Yellowstone National Park) • Theories of how the continents and oceans were formed: Pangaea and continental drift <p>B. How Mountains Are Formed</p> <ul style="list-style-type: none"> • Volcanic mountains, folded mountains, fault-block mountains, dome-shaped mountains • Undersea mountain peaks and trenches (Mariana Trench) <p>D. Weathering and Erosion</p>

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		<ul style="list-style-type: none"> • Physical and chemical weathering • Weathering and erosion by water, wind, and glaciers • The formation of soil: topsoil, subsoil, bedrock <p style="text-align: center;">C. Rocks</p> <ul style="list-style-type: none"> • Formation and characteristics of metamorphic, igneous, and sedimentary rock
	<p>II.D.1. The student will investigate the use of a lever, inclined plane and wheel and axle to move objects.</p> <p>II.D.2. The student will demonstrate that the greater the force applied, the greater the change in motion.</p>	