Grade 4 Correlation of Core Knowledge® and Minnesota Academic Standards

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
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.		
Language Arts	II.A.1. Write in a variety of styles to express meaning, including: a. descriptive b. narrative c. informative d. friendly letter e. poetic f. persuasive g. thank you note. II.B.1. Write topic sentences. II.B.2. Create multiple paragraph compositions that include: b. correct paragraph indentation style c. an introductory paragraph formulating a thesis d. supporting evidence that upholds an overall thesis e. a concluding paragraph as a summary. II.B.3. Use composing processes, including: 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 word choice d. editing – correcting errors in spelling and grammar e. publishing – producing a document and sharing the	**I. Writing, Grammar, and Usage** **A. Writing and Research** • Produce a variety of types of writing—including stories, reports, summaries, descriptions, poems, letters—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 presenting the information in his or her own words, with attention to the following: 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 documenting sources in a rudimentary bibliography • Organize material in paragraphs and understand how to use a topic sentence how to develop a paragraph with examples and details that each new paragraph is indented

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
	writing with the audience**.** II.B.4. Create informative reports, including gathering material, formulating ideas based on gathered material, organizing information, and editing for logical progression. II.B.5. Use verbalization (discussions, interviews, brainstorming) to prepare for writing. II.B.6. Consider audience in composing texts. II.D.1. Locate information in various reference materials including dictionaries, online dictionaries, glossaries, encyclopedias, and the Internet	
	II.C.1. Compose complete sentences when writing. II.C.2. Identify and correct spelling of frequently used words and common homophones. II.C.3. Spell roots, suffixes, prefixes, and syllable constructions correctly. II.C.4. Apply grammar conventions correctly in writing, including: a. verb tense b. adverbs c. prepositions d. subject and verb agreement e. possessive pronouns. II.C.5. Apply punctuation conventions correctly in writing, including: a. apostrophes b. capitalization of proper nouns c. abbreviations d. sentence beginnings. e. commas in a series f. quotation marks II.E.1. Write legibly in both print and cursive. II.E.2. Apply basic keyboarding skills.	**B. Grammar and Usage** • Understand what a complete sentence is, and identify subject and predicate in single-clause sentences distinguish complete sentences from fragments identify and correct run-on sentences • Identify subject and verb in a sentence and understand that they must agree. • Identify and use different sentence types: declarative, interrogative, imperative, exclamatory. • Know the following parts of speech and how they are used: nouns, pronouns, verbs (action verbs and auxiliary verbs), adjectives (including articles), adverbs, conjunctions (*and, but, or*), interjections. • Know how to use the following punctuation: end punctuation: period, question mark, or exclamation point comma: between day and year when writing a date, between city and state in an address, in a series, after *yes* and *no*, before conjunctions that combine sentences, inside quotation marks in dialogue apostrophe: in contractions, in singular and plural possessive nouns quotation marks: in dialogue, for titles of poems, songs, short stories, magazine articles • Understand what synonyms and antonyms are, and provide synonyms or antonyms for given words. • Use underlining or italics for titles of books.

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
		• Know how the following prefixes and suffixes affect word meaning: Prefixes: *im, in* (as in impossible, incorrect) *non* (as in nonfiction, nonviolent) *mis* (as in misbehave, misspell) *en* (as in enable, endanger) *pre* (as in prehistoric, pregame) Suffixes: *ily, y* (as in easily, speedily, tricky) *ful* (as in thoughtful, wonderful) *able, ible* (as in washable, flexible) *ment* (as in agreement, amazement) • Review correct usage of problematic homophones: their, there, they're your, you're its, it's here, hear to, too, two
	I.A.1. Read unfamiliar complex and multi-syllabic words using advanced phonetic and structural analysis in grade-appropriate text. I.A.2. Read aloud narrative and expository text with fluency, accuracy, and appropriate pacing, intonation and expression. I.B.1. Acquire, understand and use new vocabulary through explicit instruction and independent reading. I.B.2. Identify and understand root words, derivations, antonyms, synonyms, idioms, homonyms and multiple-meaning words to determine word meanings and to comprehend texts. I.B.3. Use dictionaries or glossaries to find the meaning of new words. I.B.4. Use context and word structure to determine word meanings. I.B.5. Use knowledge of prefixes and suffixes to determine the meaning of unknown words.	**II. Poetry** **A. 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) The 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) **B. Terms**

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
	I.C.1. Read aloud grade-appropriate text (that has not been previewed) with accuracy and comprehension. I.C.2. Recall and use prior learning and preview text to prepare for reading. I.C.3. Generate and answer literal, inferential, interpretive and evaluative questions about what is read to demonstrate understanding. I.C.4. Summarize and paraphrase what is read. I.C.5. Infer and identify main idea and determine relevant details in non-fiction text. I.C.6. Distinguish fact from opinion, determine cause and effect, and draw conclusions. I.C.7. Demonstrate relationships between ideas or events in the texts using graphic organizers. I.C.8. Monitor comprehension, notice when reading breaks down and use strategies to self-correct. I.C.9. Follow multiple-step written instructions. I.C.10. Compare and contrast information on the same topic from two sources. I.D.1. Read and respond to a variety of high quality, traditional, classical and contemporary literary works specific to America, as well as significant works from other countries. I.D.2. Identify, respond to, and compare and contrast the literary elements of characterization, plot, setting and theme. I.D.3. Identify patterns of sounds such as rhyme and rhythm in poetry. I.D.4. Compare and evaluate similar works by different authors in the same genre or theme. I.D.5. Compare and evaluate two works by the same author**.** I.D.6. Identify first person and third person point of view. I.D.7. Identify and determine the meanings of similes and metaphors. I.D.8. Critically read and evaluate text to determine author's purpose and point of view. I.D.9. Respond to literature using ideas and details from the text to support reactions and make literary connections. I.D.10. Read from and respond to a variety of fiction, poetic and	stanza and line **III. Fiction** **A. Stories** The Fire on the Mountain (an Ethiopian folktale) from *Gulliver's Travels*: Gulliver in Lilliput and Brobdingnag (Jonathan Swift) The Legend of Sleepy Hollow and Rip Van Winkle (Washington Irving) The Magic Brocade (a Chinese folktale) *Pollyanna* (Eleanor Porter) *Robinson Crusoe* (Daniel Defoe) Robin Hood St. George and the Dragon *Treasure Island* (Robert Louis Stevenson) **B. Myths and Mythical Characters** 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 **C. Literary Terms** novel plot setting **IV. Speeches** Patrick Henry: "Give me liberty or give me death" Sojourner Truth: "Ain't I a Woman"

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
	nonfiction texts of increasing complexity for personal enjoyment. III.A.5. Perform expressive oral readings of prose, poetry or drama.	
		V. Sayings and Phrases 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 An ounce of prevention is worth a pound of cure. 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.

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
		When it rains, it pours. You can lead a horse to water, but you can't make it drink.
	III.A.1. Participate in and follow agreed-upon rules for conversation and formal discussions in large and small groups. III.A.2. Demonstrate active listening and comprehension. III.A.3. Give oral presentations to different audiences for different purposes. III.A.4. Organize and summarize ideas, using evidence to support opinions or main ideas. III.B.1. Read print, view pictures and video images and listen to audio files and identify distinctions in how information is presented in print and non-print materials. III.B.2. Begin to make informed judgments about messages promoted in the media, such as those in film, television, radio and newspapers. III.B.3. Use print, pictures, audio and video to express ideas and knowledge gleaned from these sources.	
History and Geography	G.V.A.A.1. Students will locate major Minnesota ecosystems, topographic features, continental divides, river valleys, and cities. G.V.B.1. Students will use political and thematic maps to locate major physical and cultural regions of the world and ancient civilizations studied. G.V.B.B.1. Students will create a variety of maps to scale. G.V.B.B.2. Students will compare and contrast the differences among a variety of maps and explain the appropriate use of projections, symbols, coloring and shading, and select maps appropriate for answering questions they have. G.V.C.1. Students will locate and describe major physical features and analyze how they influenced cultures/civilizations studied.	**I. World Geography** **A. Spatial Sense (Working with Maps, Globes, and Other Geographic Tools)** • Measure distances using map scales. • Read maps and globes using longitude and latitude, coordinates, degrees. • Prime Meridian (0 degrees); Greenwich, England; 180° Line (International Date Line) • Relief maps: elevations and depressions **B. Mountains and Mountain Ranges** • Major mountain ranges South America: Andes North America: Rockies and Appalachians Asia: Himalayas and Urals Africa: Atlas Mountains Europe: Alps • High mountains of the world Asia: Everest

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
	G.V.C.2. Students will describe and locate major physical features in their local community and analyze their impact on the community. G.V.C.C.C.C.2. Students will describe physical systems in the atmosphere and Earth's crust, and the regional patterns of climate and landforms associated with them. G.V.C.C.C.C.3. Students will describe patterns of vegetation and landforms in the United States and around the world. G.V.D.D.D.D.D.D.1. Students will analyze the way peoples' perception of regions vary and are affected by individual perspective and culture. G.V.D.D.D.D.D.D.2. Students will provide examples at differing scales of how regions are important to people as symbols for unifying society. G.V.D.D.D.D.D.D.3. Students will describe how physical processes affect different regions of the world. G.V.D.D.D.D.D.D.4. Students will interpret regional variation in the relationships among soil, climate, plant and animal life, and landforms. G.V.E.1. Students will demonstrate the ability to obtain geographic information from a variety of print and electronic sources. 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. G.V.E.3. Students will locate major political and physical features of the United States and the world.	North America: McKinley South America: Aconcagua Europe: Mont Blanc Africa: Kilimanjaro
	WH.III.A.1. Students will describe the migration of people from Africa to other world regions. WH.III.A.2. Students will describe the development of agriculture and its effect on human communities. WH.III.A.3. Students will illustrate or retells the main ideas from stories that disclose the origins, history and traditions of various cultures around the world. WH.III.A.4. Students will describe significant historical	**II. Europe in the Middle Ages** **A. Background** • Beginning about a.d. 200, nomadic, warlike tribes began moving into western Europe, attacking the western Roman Empire; city of Rome sacked by Visigoths in a.d. 410 The Huns: Attila the Hun • Peoples settling in old Roman Empire included Vandals (cf. English

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
	achievements of various cultures of the world. GC.VII.C.1. Students will explain how the British limited monarchical power through written documents such as the Magna Carta, which influenced American constitutional government.	word "vandalism"), Franks in Gaul (now France), Angles (in England: cf. "Angle-land") and Saxons. • The "Middle Ages" are generally dated from about a.d. 450 to 1400. Approximately the first three centuries after the fall of Rome (a.d. 476) are sometimes called the "Dark Ages." **B. Geography Related to the Development of Western Europe** • Rivers: Danube, Rhine, Rhone, and Oder • Mountains: Alps, Pyrenees • Iberian Peninsula: Spain and Portugal, proximity to North Africa • France: the region known as Normandy • Mediterranean Sea, North Sea, Baltic Sea • British Isles: England, Ireland, Scotland, Wales; the English Channel **C. Developments in History of the Christian Church** • Growing power of the pope (Bishop of Rome) • Arguments among Christians: split into Roman Catholic Church and Eastern Orthodox Church • Conversion of many Germanic peoples to Christianity • Rise of monasteries, preservation of classical learning • Charlemagne Temporarily unites the western Roman Empire Crowned Emperor by the pope in a.d. 800, the idea of a united "Holy Roman Empire" Charlemagne's love and encouragement of learning **D. Feudalism** • Life on a manor, castles • Lords, vassals, knights, freedmen, serfs • Code of chivalry • Knight, squire, page **E. The Norman Conquest** • Locate the region called Normandy. • William the Conqueror: Battle of Hastings, 1066 **F. Growth of Towns** • Towns as centers of commerce, guilds and apprentices • Weakening of feudal ties **G. England in the Middle Ages**

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
		• Henry II Beginnings of trial by jury Murder of Thomas Becket in Canterbury Cathedral Eleanor of Aquitaine • Significance of the Magna Carta, King John, 1215 • Parliament: beginnings of representative government • The Hundred Years' War Joan of Arc • The Black Death sweeps across Europe
	WH.III.B.4. Students will describe and compare major religious systems and practices. WH.III.D.1. Students will analyze the spread of Islamic civilization to western Europe, India and Africa.	**III. The Spread of Islam and the "Holy Wars"** **A. Islam** • Muhammad: the last prophet • Allah, Qur'an, *jihad* • Sacred city of Makkah, mosques • "Five pillars" of Islam: Declaration of faith Prayer (five times daily), facing toward Makkah Fasting during Ramadan Help the needy Pilgrimage to Makkah • Arab peoples unite to spread Islam in northern Africa, through the eastern Roman empire, and as far west as Spain. • Islamic Turks conquer region around the Mediterranean; in 1453, Constantinople becomes Istanbul. • The first Muslims were Arabs, but today diverse people around the world are Muslims. **B. Development of Islamic Civilization** • Contributions to science and mathematics: Avicenna (Ibn Sina), Arabic numerals • Muslim scholars translate and preserve writings of Greeks and Romans • Thriving cities as centers of Islamic art and learning, such as Cordoba (Spain) **C. Wars Between Muslims and Christians** • The Holy Land, Jerusalem • The Crusades • Saladin and Richard the Lion-Hearted

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
	WH.III.B.1. Students will describe the emergence of states in Sub-Saharan Africa and explains how iron working diffused in Africa. WH.III.D.3. Students will describe the formation of states in sub-Saharan Africa and the Americas.	• Growing trade and cultural exchange between east and west **IV. Early and Medieval African Kingdoms** **A. Early African Kingdoms** • Kush (in a region also called Nubia): once ruled by Egypt, then became rulers of Egypt • Axum: a trading kingdom in what is now Ethiopia **B. Medieval Kingdoms of the Sudan** • Trans-Sahara trade led to a succession of flourishing kingdoms: Ghana, Mali, and Songhai Camel caravans Trade in gold, iron, salt, ivory, and slaves The city of Timbuktu: center of trade and learning Spread of Islam into West Africa through merchants and travelers Ibn Batuta (world traveler and geographer) • Mali: Sundiata Keita, Mansa Musa • Songhai: Askia Muhammad **C. Geography of Africa** • Mediterranean Sea and Red Sea, Atlantic and Indian Oceans • Cape of Good Hope • Madagascar • Major rivers: Nile, Niger, Congo • Atlas Mountains, Mt. Kilimanjaro • Contrasting climate in different regions: Deserts: Sahara, Kalahari Tropical rain forests (along lower West African coast and Congo River) Savanna (grasslands) The Sudan (the fertile region below the Sahara, not the modern-day country)
	WH.III.B.2. Students will describe how the Chinese Empire was united. WH.III.D.2. Students will describe the expansion of the Chinese Empire and its effect on political and cultural life. WH.III.F.3. Students will analyze the strengths and limitations of	**V. China: Dynasties and Conquerors** • Qin Shihuangdi, first emperor, begins construction of Great Wall • Han dynasty: trade in silk and spices, the Silk Road, invention of paper • Tang and Song dynasties: highly developed civilization, extensive trade, important inventions (including compass, gunpowder, paper money)

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
	the Chinese Empire under the Ming Dynasty.	• Mongol invasions and rule Ghenggis Khan and the "Golden Horde" Khubilai Khan: establishes capital at what is now Beijing Marco Polo • Ming dynasty The "Forbidden City" Explorations of Zheng He
	H.I.A.1. Students will compare ways of life of Indian Nations from different regions of North America. H.I.B.1. Students will identify key European explorers and how their voyages led to the establishment of colonies. H.I.B.2. Students will know and explain that interactions between American Indian tribes and European explorers had positive and negative impacts H.I.C.1. Students will explain and understand the political, religious, social, and economic events and conditions that led to the colonization of America. H.I.C.2. Students will compare and contrast life within the colonies and their geographical areas, including New England, Mid-Atlantic, and Southern colonies, and analyze their impact. H.I.C.3. Students will identify the differences and tensions between the English colonies and American Indian tribes. H.I.C.4. Students will understand the significance of enslaved Africans and their descendants in the economic and social life of the colonies. H.I.D.1. Students will understand issues and events that led to the American Revolution, and analyze how these events affected the move toward independence from Britain. H.I.D.2. Students will understand the principles of the Declaration of Independence, including inalienable rights and self-evident truths. H.I.D.3. Students will analyze the roles of key individuals and political leaders in the American Revolution.	**I. The American Revolution** **A. Background: The French and Indian War** • Also known as the Seven Years' War, part of an ongoing struggle between Britain and France for control of colonies in various regions around the world (in this case, in North America) • Alliances with Native Americans • The Battle of Quebec • British victory gains territory but leaves Britain financially weakened. **B. Causes and Provocations** • British taxes, "No taxation without representation" • Boston Massacre, Crispus Attucks • Boston Tea Party • The Intolerable Acts close the port of Boston and require Americans to provide quarters for British troops • First Continental Congress protests to King George III • Thomas Paine's *Common Sense* **C. The Revolution** • Paul Revere's ride, "One if by land, two if by sea" • Concord and Lexington The "shot heard 'round the world" Redcoats and Minute Men • Bunker Hill • Second Continental Congress: George Washington appointed commander in chief of Continental Army • Declaration of Independence Primarily written by Thomas Jefferson Adopted July 4, 1776 "We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
	H.I.D.4. Students will know and understand key factors and events contributing to the defeat of the British. .	unalienable Rights, that among these are Life, Liberty, and the pursuit of Happiness." • Women in the Revolution: Elizabeth Freeman, Deborah Sampson, Phillis Wheatley, Molly Pitcher • Loyalists (Tories) • Victory at Saratoga, alliance with France • European helpers (Lafayette, the French fleet, Bernardo de Galvez, Kosciusko, von Steuben) • Valley Forge • Benedict Arnold • John Paul Jones: "I have not yet begun to fight." • Nathan Hale: "I only regret that I have but one life to lose for my country." • Cornwallis: surrender at Yorktown
	H.I.DD.1. Students will know and understand basic principles of the new government established by the Constitution of the United States. H.I.DD.2. Students will know reasons why the United States developed the Constitution, including the debates and compromises that led to the final document. GC.VII.A.1. Students will identify people who have dealt with challenges and made a positive difference in other people's lives and explain their contributions. GC.VII.A.A.1. Students will explain protections the Bill of Rights provides to individuals. GC.VII.A.A.2. Students will explain some of the responsibilities of people living in a democracy. GC.VII.A.A.3. Students will explain that the Minnesota Constitution also protects rights, including additional rights not specifically mentioned by the federal constitution. GC.VII.A.A.4. Students will describe landmark U.S. Supreme Court decisions concerning rights and responsibilities GC.VII.B.1. Students will explain why government is needed and what would happen if there were no government. GC.VII.B.2. Students will explain what "consent of the	**II. Making a Constitutional Government** **A. Main Ideas Behind the Declaration of Independence** • The proposition that "All men are created equal" • The responsibility of government to protect the "unalienable rights" of the people • Natural rights: "Life, liberty, and the pursuit of happiness" • The "right of the people ... to institute new government" **B. Making a New Government: From the Declaration to the Constitution** • Definition of "republican" government: republican = government by elected representatives of the people • Articles of Confederation: weak central government • "Founding Fathers": James Madison as "Father of the Constitution" • Constitutional Convention Arguments between small and large states The divisive issue of slavery, "three-fifths" compromise **C. The Constitution of the United States** • Preamble to the Constitution: "We the people of the United States, in order to form a more perfect union, establish justice, insure domestic tranquility, provide for the common defense, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity, do ordain and establish this

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
	governed" means and how it is expressed in the preamble to the Constitution. GC.VII.B.3. Students will define consent of the governed, liberty, equality, rights, responsibilities, justice, popular sovereignty, and general welfare, democracy, republic, and representative democracy. GC.VII.B.4. Students will understand how governmental power is limited through federalism and a system of checks and balances. GC.VII.B.B. 1. Students will explain why key national, state, and local symbols and landmarks and monuments are significant. GC.VII.B.B. 2. Students will know the Pledge of Allegiance, its history, and why Americans recite it. GC.VII.B.B. B.1. Students will explain the fundamental principles of consent of the governed, limited government, rule of law, democracy, and representative government. GC.VII.B.B. B.2. Students will explain the ideals of the American system of government: liberty, justice, equality, "E Pluribus Unum" GC.VII.B.B. B.B. 1. Students will explain how law limits both the government and the governed, protects individual rights and promotes the general welfare GC.VII.B.B. B.B. 2. Students will explain that authority for making laws rests with the people, through their elected officials. GC.VII.B.B. B.B. 3. Students will distinguish and explain the relationships between making, enforcing and interpreting the law. GC.VII.B.B. B.B. 4. Students will evaluate rules and laws using criteria of good laws. GC.VII.B.B. B.B. 5. Students will distinguish between civil and criminal law, state and federal law. GC.VII.C.2. Students will explain how the Mayflower Compact, Articles of Confederation, and other documents	Constitution for the United States of America." • The separation and sharing of powers in American government: three branches of government Legislative branch: Congress = House of Representatives and Senate, makes laws Executive branch: headed by the president, carries out laws Judicial branch: a court system headed by the Supreme Court (itself headed by the Chief Justice), deals with those who break laws and with disagreements about laws • Checks and balances, limits on government power, veto • The Bill of Rights: first ten amendments to the Constitution, including: Freedom of religion, speech, and the press (First Amendment) Protection against "unreasonable searches and seizures" The right to "due process of law" The right to trial by jury Protection against "cruel and unusual punishments" **D. Levels and Functions of Government (National, State, Local)** • Identify current government officials, including President and vice-president of the U.S. State governor • State governments: established by state constitutions (which are subordinate to the U.S. Constitution, the highest law in the land), like the national government, each state government has its legislative, executive, and judicial branches • Local governments: purposes, functions, and officials • How government services are paid for (taxes on individuals and businesses, fees, tolls, etc.) • How people can participate in government **III. Early Presidents and Politics** • Define: cabinet and administration • George Washington as first President, Vice-President John Adams • John Adams, second president, Abigail Adams • National capitol established at Washington, D.C. • Growth of political parties Arguments between Thomas Jefferson and Alexander Hamilton: two opposed visions of America, as an agricultural or industrial society

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
	influenced the development of American government. GC.VII.C.3. Students will describe the principles expressed in the Declaration of Independence, including inalienable rights and self-evident truths, and how these principles influence the development of United States constitutional government GC.VII.C.4. Students will describe the principles expressed in the Preamble to the Constitution and how these principles influence the United States constitutional government GC.VII.C.5. Students will describe how the Constitution and Bill of Rights protect individual rights and support the principle of majority rule but also protect the rights of the minority. GC.VII.D.1. Students will describe the three branches of the U.S. government established by the Constitution, their primary functions, and their relationships. GC.VII.D.2. Students will describe separation of powers and checks and balances and analyze historical and contemporary examples of how they are applied among the branches of government. GC.VII.D.D.2. Students will explain the major purposes of Minnesota's Constitution as stated in its Preamble.	Modern-day system: two main parties (Democrats and Republicans), and independents • Thomas Jefferson, third president Correspondence between Jefferson and Benjamin Banneker Jefferson as multifaceted leader (architect, inventor, musician, etc.) The Louisiana Purchase (review from grade 1) doubles the nation's size and gains control of Mississippi River. • James Madison, fourth president War of 1812 (briefly review from grade 2) • James Monroe, fifth president, the Monroe Doctrine • John Quincy Adams, sixth president • Andrew Jackson, seventh president Popular military hero, Battle of New Orleans in War of 1812 Presidency of "the common man" Indian removal policies **IV. Reformers** • Abolitionists • Dorothea Dix and the treatment of the insane • Horace Mann and public schools • Women's rights Seneca Falls convention Elizabeth Cady Stanton Lucretia Mott Amelia Bloomer Sojourner Truth **V. Symbols and Figures** • Recognize and become familiar with the significance of Spirit of '76 (painting) White House and Capitol Building Great Seal of the United States
	HS.IV.A.1. Students will develop a chronological sequence of persons, events and concepts in each historical era studied in these grades. HS.IV.B.1. Students will identify, describe, and extract information from various types of historical sources,	***These are social studies skills that can be used with any Core Knowledge social studies topic.***

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
	both primary and secondary. HS.IV.B.2. Students will assess the credibility and determine appropriate use of different sorts of sources. HS.IV.B.3. Students will investigate the ways historians learn about the past if there are no written records. 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. 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. HS.IV.CC. 3. Students will understand the concepts of historical context and multiple causation. HS.IV.CC. 4. Students will create a timeline that illustrates the relationship of their topic to other historic events.	
Visual Arts	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 c. vocabulary; AE.VA.D.2. understand the cultural and historical forms or traditions of visual arts;	**I. Art of the Middle Ages in Europe** • Note the generally religious nature of European art in the Middle Ages, including Examples of medieval Madonnas (such as *Madonna and Child on a Curved Throne*—13th century Byzantine) Illuminated manuscripts (such as *The Book of Kells*) Tapestries (such as the Unicorn tapestries) • Become familiar with features of Gothic architecture (spires, pointed arches, flying buttresses, rose windows, gargoyles and statues) and famous cathedrals, including Notre Dame (Paris). **II. Islamic Art and Architecture** • Become familiar with examples of Islamic art, including illuminated manuscript and illumination of the Qur'an (Koran). • Note characteristic features of Islamic architecture, such as domes and minarets, in Dome of the Rock (Mosque of Omar), Jerusalem Alhambra Palace, Spain Taj Mahal, India

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
		III. The Art of Africa • Note the spiritual purposes and significance of many African works of art, such as masks used in ceremonies for planting, harvesting, or hunting. • Become familiar with examples of art from specific regions and peoples in Africa, such as Antelope headdresses of Mali Sculptures by Yoruba artists in the city of Ife Ivory carvings and bronze sculptures of Benin **IV. The Art of China** • Become familiar with examples of Chinese art, including Silk scrolls Calligraphy (the art of brush writing and painting) Porcelain **V. The Art of a New Nation: The United States** • Become familiar with famous portraits and paintings, including John Singleton Copley, *Paul Revere* Gilbert Stuart, George Washington Washington Crossing the Delaware • Become familiar with the architecture of Thomas Jefferson's Monticello.
	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; 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.	***These skills can be used with any of the visual arts content.***
Music	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; AE.MuI.B.5. improvise and compose rhythms, melodies, and	**I. 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.

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
	accompaniments using classroom instruments, voice, or both to express a specific musical idea; AE.MuI.B.6. perform rhythmic, melodic, and harmonic patterns on classroom instruments; AE.MuI.B.7. read and write music using a system of musical notation.	Discriminate between fast and slow; gradually slowing down and getting faster. Discriminate between differences in pitch: high and low. Discriminate between loud and quiet; 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 and dotted notes, sharps, flats, *Da cap* [D] *al fine,* meter signature, common time, dynamics
	AE.MuI.B.2. understand cultural and historical forms or traditions of music; AE.MuI.B.4. sing or play traditional instruments alone and sing rounds and part songs or play traditional instruments in a group;	**II. Listening and Understanding** **A. 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.* **B. Vocal Ranges** • Recognize vocal ranges of the female voice: high = soprano middle = mezzo soprano low = alto • Recognize vocal ranges of the male voice: high = tenor middle = baritone low = bass **C. Composers and Their Music**

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
		• 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 Vogelfänger bin ich ja" (Papageno); Recitative and Aria, "O zittre nicht, mein lieber Sohn!" (Queen of the Night); Aria, "Ein Mädchen oder Weibchen" (Papageno); Duet, "Pa-pa-gena! Pa-pa-geno!" (Papageno and Papagena); Finale, Recitative and Chorus, "Die Strahlen der Sonne" (Sarastro and Chorus) **D. Musical Connections** • Gregorian chant **III. 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 Anchors Aweigh The Army Goes [Caissons Go] Rolling Along The Marine's Hymn
	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;	***These skills can be used with any of the music content.***

***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.**

Mathematics	II.A.1. Read and write whole numbers to 100,000 in numerals	**I. Numbers and Number Sense**

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
	and words. II.A.2. Compare and order whole numbers. II.A.4. Use rounding and estimation with whole numbers to solve real-world and mathematical problems. II.A.1. Examine and describe patterns in tables and graphs. IV.A.1. Collect data using observations or surveys and represent the data with tables and graphs with labeling. IV.A.2. Use mathematical language to describe a set of data. IV.B/1. Express outcomes of random experiments verbally and numerically such as 3 out of 4 or ¾. IV.B.2. Use physical models and pictures to represent possible arrangements of two or three objects.	• Read and write numbers (in digits and words) up to nine digits. • Recognize place value up to hundred-millions. • Order and compare numbers to 999,999,999 using the signs <, >, and = . • Write numbers in expanded form. • Use a number line; locate positive and negative whole numbers on a number line. • Round to the nearest ten; to the nearest hundred; to the nearest thousand. • Identify perfect squares (and square roots) to 144; recognize the square root sign: $\sqrt{}$ • Identify Roman numerals from 1 to 1,000 (I - M), and identify years as written in Roman numerals. • Create and interpret bar graphs and line graphs. • Plot points on a coordinate plane (grid), using ordered pairs of positive whole numbers. • Know the meanings of multiple, factor, prime number, and composite number.
	II.A.3. Use fractions and decimals to solve problems representing parts of a whole, parts of a set and division of whole numbers by whole numbers in real-world and mathematical problems.	**II. Fractions and Decimals** **A. Fractions** • Recognize fractions to one-twelfth. • Identify numerator and denominator. • Write mixed numbers; change improper fractions to mixed numbers and vice versa. • Recognize equivalent fractions (for example, ½ = 3/6). • Put fractions in lowest terms. • Rename fractions with unlike denominators to fractions with common denominators. • Compare fractions with like and unlike denominators, using the signs <, >, and = . • Solve problems in the form of 2/3 = ?/12 • Add and subtract fractions with like denominators. • Express simple outcomes as fractions (for example, 3 out of 4 as ¾). **B. Decimals** • Read and write decimals to the nearest thousandth. • Read and write decimals as fractions (for example, 0.39 = 39/100). • Write decimal equivalents for halves, quarters, eighths, and tenths. • Compare fractions to decimals using the signs <, >, and =.

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
		• Write decimals in expanded form. • Round decimals to the nearest tenth; to the nearest hundredth. • Compare decimals, using the signs <, >, and = . • Read and write decimals on a number line. • Add and subtract with decimal numbers to two places.
	V.C.3. Make change using as few coins and bills as possible up to $20.	**III. Money** • Solve problems involving making change in amounts up to $100.00. • Solve multiplication and division problems with money.
	II.B.1. Use addition and subtraction of multi-digit whole numbers to solve multi-step real world and mathematical problems. II.B.2. Add up to three whole numbers containing up to three digits each, without a calculator. II.B.3. Subtract whole numbers containing up to three digits each, without a calculator. II.B.4. Demonstrate mastery of multiplication facts for the numbers 0-10, without a calculator. II.B.5. Use multiplication and division of whole numbers to solve simple real-world and mathematical problems. II.B.6. Use the inverse relationship of multiplication and division to compute and check results. II.B.7. Multiply single digit multiples of powers of ten such as 300 x 60 or 70 x 3, mentally. II.B.2. Use the properties of arithmetic that involve ordering, grouping and the numbers 1 and 0, to do simple computations with whole numbers.	**IV. Computation** **A. Multiplication** • Review and reinforce basic multiplication facts to 10 x 10. • Mentally multiply by 10, 100, and 1,000. • Identify multiples of a given number; common multiples of two given numbers. • Multiply by two-digit and three-digit numbers. • 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 x 27 = (3 x 20) + (3 x 7) = 60 + 21 = 81. • Check multiplication by changing the order of the factors. • Multiply three factors in any given order. • Solve word problems involving multiplication. **B. Division** • Understand multiplication and division as inverse operations. • Review the meaning of dividend, divisor, and quotient. • Review and reinforce basic division facts to 100 ÷ 10. • Identify different ways of writing division problems: 28 ÷ 7 7)28 28/7 • Identify factors of a given number; common factors of two given numbers. • Review: you cannot divide by 0; any number divided by 1 = that number. • Estimate the quotient. • Divide dividends up to four-digits by one-digit and two-digit divisors.

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
		• Solve division problems with remainders. • Check division by multiplying (and adding remainder).
	I.1. Communicate, reason and represent situations mathematically. I.2. Solve problems by distinguishing relevant from irrelevant information, sequencing and prioritizing information and breaking multi-step problems into simpler parts. I.3. Evaluate the reasonableness of the solution by considering appropriate estimates and the context of the original problem. I.4. Know when it is appropriate to estimate and when an exact answer with whole numbers, fractions or decimals is needed. I.5. Express a written problem in suitable mathematical language, solve the problem and interpret the result in the original context. 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. II.B.1. Identify a missing number or operation in a simple arithmetic equation such as 3 _ 4 = 12 or 45 / _ = 9.	**C. Solving Problems and Equations** • Solve two-step word problems. • Solve equations in the form of ___ x 9 = 63; 81 ÷ ___ = 9. • Solve problems with more than one operation, as in (72 ÷ 9) x (36 ÷ 4) = ___ • Equality properties Know that equals added to equals are equal. Know that equals multiplied by equals are equal. • Use letters to stand for any number, as in working with a formula (for example, area of rectangle: A = L x W).
		V. Measurement • Linear measure: estimate and make linear measurements in yards, feet, and inches (to 1/8 in.); and in meters, centimeters, and millimeters. • Weight (mass): estimate and measure weight in pounds and ounces; grams and kilograms. • Capacity (volume): estimate and measure liquid capacity in teaspoons, tablespoons, cups, pints, quarts, gallons; and in milliliters and liters. • Know the following equivalences among U. S. customary units of measurement, and solve problems involving changing units of measurement: Linear measure 1 ft. = 12 in.

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
		1 yd. = 3 ft. = 36 in. 1 mi. = 5,280 ft. 1 mi. = 1,760 yd. Weight 1 lb. = 16 oz. 1 ton = 2,000 lb. Capacity (volume) 1 cup = 8 fl. oz. (fluid ounces) 1 pt. = 2 c. 1 qt. = 2 pt. 1 gal. = 4 qt. • Know the following equivalences among metric units of measurement, and solve problems involving changing units of measurement: Linear measure 1 cm = 10 mm (millimeters) 1 m = 1,000 mm 1 m = 100 cm 1 km = 1,000 m Mass 1 cg (centigram) = 10 mg (milligrams) 1 g = 1,000 mg 1 g = 100 cg 1 kg = 1,000 g Capacity (volume) 1 cl (centiliter) = 10 ml (milliliters) 1 liter = 1,000 ml 1 liter = 100 cl • Time: solve problems on elapsed time.
	V.A.1. Identify congruent and similar figures. V.A.2. Identify parallel and perpendicular lines. V.B.1. Identify, describe, and classify two- and three-dimensional shapes by their attributes. V.B.2. Identify right angles in geometric figures or in appropriate objects and determine whether other angles are greater or less than a right angle. V.C.1. Find the area and perimeter of a rectangle by measuring,	**VI. Geometry** • Identify and draw points, segments, rays, lines. • Identify and draw lines: horizontal; vertical; perpendicular; parallel; intersecting. • Identify angles; identify angles as right, acute, or obtuse. • Identify polygons: Triangle, quadrilateral, pentagon, hexagon, and octagon (regular) Parallelogram, trapezoid, rectangle, square • Identify and draw diagonals of quadrilaterals. • Circles: Identify radius (plural: radii) and diameter; radius = ½ diameter

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
	using a grid, or using a formula, and label the answer with appropriate units. V.C.2. Understand that rectangles with the same area can have different perimeters and that rectangles with the same perimeter can have different areas.	• Recognize similar and congruent figures. • Know 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) • Compute volume of rectangular prisms in cubic units (cm^3, in^3).
Science	IV.A.1. The student will recognize that cells are very small, and that all living things consist of one or more cells. IV.A.2. The student will recognize that cells need: food, water and air, a way to dispose of waste, and an environment in which they can live. IV.G.1. The student will understand that humans have structures that serve functions in growth, survival and reproduction. IV.G.2. The student will know that germs entering the body can cause disease, and that the body has defenses against these germs. IV.G.3. The student will know that there are many diseases that can be prevented by vaccination.	**I. The Human Body** **A. The Circulatory System** • Pioneering work of William Harvey • Heart: four chambers (auricles and ventricles), aorta • Blood Red blood cells (corpuscles), white blood cells (corpuscles), platelets, hemoglobin, plasma, antibodies 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 **B. 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 **VI. Science Biographies** Elizabeth Blackwell Charles Drew
	II.A.1. The student will observe that heating and cooling can causes changes in state. II.A.2. The student will describe the changes in the properties of a substance when it is heated or cooled. II.A.3. The student will compare and contrast the mass, shape and volume of solids, liquids and gases.	**II. Chemistry: Basic Terms and Concepts** **A. 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.

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
		• The concept of electrical charge Positive charge (+): proton Negative charge (-): electron Neutral (neither positive nor negative): neutron "Unlike charges attract, like charges repel" (relate to magnetic attraction and repulsion) **B. 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 **C. 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, oxygen Most things are made up of a combination of elements. **D. 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)
	II.C.1. The student will explore simple electrical circuits using components such as wires, batteries and bulbs. II.C.2. The student will investigate static electricity. II.C.3. The student will identify objects and materials that conduct electricity and those that are insulators. II.E.1. The student will demonstrate how a wire and magnet can be used to generate an electric current. II.E.2. The student will demonstrate how an electric current can make an iron object magnetic.	**III. Electricity** • Electricity as the flow of electrons • Static electricity • Electric current • Electric circuits, and experiments with simple circuits (battery, wire, light bulb, filament, switch, fuse) Closed circuit, open circuit, short circuit • Conductors and insulators • Electromagnets: how they work and common uses • Using electricity safely

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
		VI. Science Biographies Michael Faraday
	MOVED TO GRADE 5	**IV. Geology: The Earth and Its Changes** **A. The Earth's Layers** • Crust, mantle, core (outer core and inner core) • Movement of crustal plates • Earthquakes Faults, San Andreas fault Measuring intensity: seismograph and Richter Scale Tsunamis (also called tidal waves) • Volcanos 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 **B. How Mountains Are Formed** • Volcanic mountains, folded mountains, fault-block mountains, dome-shaped mountains • Undersea mountain peaks and trenches (Mariana Trench) **D. Weathering and Erosion** • Physical and chemical weathering • Weathering and erosion by water, wind, and glaciers • The formation of soil: topsoil, subsoil, bedrock **C. Rocks** • Formation and characteristics of metamorphic, igneous, and sedimentary rock

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
	III.A.1. The student will identify and investigate environmental issues and potential solutions. III.B.1. The student will describe the water cycle involving the processes of evaporation, condensation, precipitation and collection. III.B.2. The student will identify where water exists on Earth. III.C.1. The student will recognize that the stars in the sky appear to slowly move from east to west.	**V. Meteorology** • The water cycle (review from grade 2): evaporation, condensation, precipitation • Clouds: cirrus, stratus, cumulus (review from grade 2) • The atmosphere Troposphere, stratosphere, mesosphere, ionosphere How the sun and the earth heat 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.
		VI. Science Biographies Benjamin Banneker
	I.A.1. The student will explore the uses and effects of science in our interaction with the natural world. I.A.2. The student will discuss the responsible use of science. I.A.3. The student will recognize the impact of scientific and technological activities on the natural world. I.B.1. The student will recognize when comparisons might not be fair because some conditions are not kept the same. I.B.2. The student will collect, organize, analyze and present data from a controlled experiment. I.B.3. The student will recognize that evidence and logic are necessary to support scientific understandings.	***These are science process skills that can be used with any Core Knowledge topic.***
	III.C.2. The student will identify the sun as an average-sized star and that the other stars are so far away that they look like points of light. III.C.3. The student will know that telescopes magnify distant objects in the sky and dramatically increase the number	***Review from Grade 3 Core Knowledge***

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.

Strand	*Minnesota Academic Standards*	*Core Knowledge Sequence*
	of stars we can see. IV.B.1. The student will classify plants and animals according to their physical characteristics. IV.B.2. The student will learn that the characteristics used for grouping depend on the purpose of the grouping.	

© 2007 Core Knowledge Foundation. Cannot be reproduced without express, written permission from the Core Knowledge Foundation.