



Content Standards Guide for Parents

Grade 6

Grandville Public Schools
Office of Curriculum & Instruction

Dear Parents,

Grandville Public Schools prides itself on high academic expectations and successful partnerships with parents. Working together creates the best opportunity for student success.

As educators, we regularly review and update our curriculum in order to provide students with the skills and knowledge necessary to be successful in the twenty-first century. While these standards outline the State approved content to be taught at each grade level, it is our progressive and individualized classroom instruction that provides the means by which students master the content. By establishing a solid home-school partnership, we can work together to create high expectations and assure a positive learning environment for all students.

This guide has been designed to provide you with an understanding of the standards and curricular content for sixth grade. It is our hope that it gives clarity of your child's learning at school and helps you support their progress at home.

As always, you should never hesitate to contact your child's teacher, building principal or me with any curricular questions you might have. Thank you for your continued support of our teaching and learning.

Sincerely,

Scott Merkel
Asst. Superintendent for Curriculum & Instruction

English Language Arts Standards

Reading: Literature

Key Ideas and Details:

- Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
- Determine a theme or central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.
- Describe how a particular story's or drama's plot unfolds in a series of episodes as well as how the characters respond or change as the plot moves toward a resolution.

Craft and Structure:

- Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of a specific word choice on meaning and tone
- Analyze how a particular sentence, chapter, scene, or stanza fits into the overall structure of a text and contributes to the development of the theme, setting, or plot.
- Explain how an author develops the point of view of the narrator or speaker in a text.

Integration of Knowledge and Ideas:

- Compare and contrast the experience of reading a story, drama, or poem to listening to or viewing an audio, video, or live version of the text, including contrasting what they "see" and "hear" when reading the text to what they perceive when they listen or watch.
- (RL.6.8 not applicable to literature)
- Compare and contrast texts in different forms or genres (e.g., stories and poems; historical novels and fantasy stories) in terms of their approaches to similar themes and topics.

Range of Reading and Level of Text Complexity:

- By the end of the year, read and comprehend literature, including stories, dramas, and poems, in the grades 6-8 text complexity band proficiently, with scaffolding as needed at the high end of the range.

Reading: Informational Text

Key Ideas and Details:

- Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

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- Determine a central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.
- Analyze in detail how a key individual, event, or idea is introduced, illustrated, and elaborated in a text (e.g., through examples or anecdotes).

Craft and Structure:

- Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings.
- Analyze how a particular sentence, paragraph, chapter, or section fits into the overall structure of a text and contributes to the development of the ideas.
- Determine an author's point of view or purpose in a text and explain how it is conveyed in the text.

Integration of Knowledge and Ideas:

- Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue.
- Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not.
- Compare and contrast one author's presentation of events with that of another (e.g., a memoir written by and a biography on the same person).

Range of Reading and Level of Text Complexity:

- By the end of the year, read and comprehend literary nonfiction in the grades 6-8 text complexity band proficiently, with scaffolding as needed at the high end of the range.

Writing

Text Types and Purposes:

- Write arguments to support claims with clear reasons and relevant evidence.
 - Introduce claim(s) and organize the reasons and evidence clearly.
 - Support claim(s) with clear reasons and relevant evidence, using credible sources and demonstrating an understanding of the topic or text.
 - Use words, phrases, and clauses to clarify the relationships among claim(s) and reasons.
 - Establish and maintain a formal style.
 - Provide a concluding statement or section that follows from the argument presented.
- Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.
 - Introduce a topic; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and

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- cause/effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.
- Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.
- Use appropriate transitions to clarify the relationships among ideas and concepts.
- Use precise language and domain-specific vocabulary to inform about or explain the topic.
- Establish and maintain a formal style.
- Provide a concluding statement or section that follows from the information or explanation presented.
- Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.
 - Engage and orient the reader by establishing a context and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically.
 - Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters.
 - Use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another.
 - Use precise words and phrases, relevant descriptive details, and sensory language to convey experiences and events.
 - Provide a conclusion that follows from the narrated experiences or events.

Production and Distribution of Writing:

- Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1-3 above.)
- With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach. (Editing for conventions should demonstrate command of Language standards 1-3 up to and including grade 6 [here](#).)
- Use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of three pages in a single sitting.

Research to Build and Present Knowledge:

- Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate.
- Gather relevant information from multiple print and digital sources; assess the credibility of each source; and quote or paraphrase the data and

conclusions of others while avoiding plagiarism and providing basic bibliographic information for sources.

- Draw evidence from literary or informational texts to support analysis, reflection, and research.
- Apply grade 6 Reading standards to literature (e.g., "Compare and contrast texts in different forms or genres [e.g., stories and poems; historical novels and fantasy stories] in terms of their approaches to similar themes and topics").
- Apply grade 6 Reading standards to literary nonfiction (e.g., "Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not").

Range of Writing:

- Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

Speaking & Listening

Comprehension and Collaboration:

- Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.
 - Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.
 - Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed.
 - Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.
 - Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.
- Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.
- Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.

Presentation of Knowledge and Ideas:

- Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.
- Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.

- Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 6 Language standards 1 and 3 for specific expectations.)

Language

Conventions of Standard English:

- Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
 - Ensure that pronouns are in the proper case (subjective, objective, possessive).
 - Use intensive pronouns (e.g., myself, ourselves).
 - Recognize and correct inappropriate shifts in pronoun number and person.
 - Recognize and correct vague pronouns (i.e., ones with unclear or ambiguous antecedents).*
 - Recognize variations from standard English in their own and others' writing and speaking, and identify and use strategies to improve expression in conventional language.*
- Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
 - Use punctuation (commas, parentheses, dashes) to set off nonrestrictive/parenthetical elements.*
 - Spell correctly.

Knowledge of Language:

- Use knowledge of language and its conventions when writing, speaking, reading, or listening.
 - Vary sentence patterns for meaning, reader/listener interest, and style.
 - Maintain consistency in style and tone.

Vocabulary Acquisition and Use:

- Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, choosing flexibly from a range of strategies.
 - Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.
 - Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., audience, auditory, audible).
 - Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech.
 - Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).

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- Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.
 - Interpret figures of speech (e.g., personification) in context.
 - Use the relationship between particular words (e.g., cause/effect, part/whole, item/category) to better understand each of the words.
 - Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., stingy, scrimping, economical, unwasteful, thrifty).
- Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Mathematics Standards

Introduction

In Grade 6, instructional time should focus on four critical areas: (1) connecting ratio and rate to whole number multiplication and division and using concepts of ratio and rate to solve problems; (2) completing understanding of division of fractions and extending the notion of number to the system of rational numbers, which includes negative numbers; (3) writing, interpreting, and using expressions and equations; and (4) developing understanding of statistical thinking.

1. Students use reasoning about multiplication and division to solve ratio and rate problems about quantities. By viewing equivalent ratios and rates as deriving from, and extending, pairs of rows (or columns) in the multiplication table, and by analyzing simple drawings that indicate the relative size of quantities, students connect their understanding of multiplication and division with ratios and rates. Thus students expand the scope of problems for which they can use multiplication and division to solve problems, and they connect ratios and fractions. Students solve a wide variety of problems involving ratios and rates.
2. Students use the meaning of fractions, the meanings of multiplication and division, and the relationship between multiplication and division to understand and explain why the procedures for dividing fractions make sense. Students use these operations to solve problems. Students extend their previous understandings of number and the ordering of numbers to the full system of rational numbers, which includes negative rational numbers, and in particular negative integers. They reason about the order and absolute value of rational numbers and about the location of points in all four quadrants of the coordinate plane.
3. Students understand the use of variables in mathematical expressions. They write expressions and equations that correspond to given situations, evaluate expressions, and use expressions and formulas to solve problems. Students understand that expressions in different forms can be equivalent, and they use the properties of operations to rewrite expressions in equivalent forms. Students know that the solutions of an equation are the values of the variables that make the equation true. Students use properties of operations and the idea of maintaining the equality of both sides of an equation to solve simple one-step equations. Students construct and analyze tables, such as tables of quantities that are in equivalent ratios, and they use equations (such as $3x = y$) to describe relationships between quantities.
4. Building on and reinforcing their understanding of number, students begin to develop their ability to think statistically. Students recognize that a data distribution may not have a definite center and that different ways to

measure center yield different values. The median measures center in the sense that it is roughly the middle value. The mean measures center in the sense that it is the value that each data point would take on if the total of the data values were redistributed equally, and also in the sense that it is a balance point. Students recognize that a measure of variability (interquartile range or mean absolute deviation) can also be useful for summarizing data because two very different sets of data can have the same mean and median yet be distinguished by their variability.

Students learn to describe and summarize numerical data sets, identifying clusters, peaks, gaps, and symmetry, considering the context in which the data were collected. Students in Grade 6 also build on their work with area in elementary school by reasoning about relationships among shapes to determine area, surface area, and volume. They find areas of right triangles, other triangles, and special quadrilaterals by decomposing these shapes, rearranging or removing pieces, and relating the shapes to rectangles. Using these methods, students discuss, develop, and justify formulas for areas of triangles and parallelograms. Students find areas of polygons and surface areas of prisms and pyramids by decomposing them into pieces whose area they can determine. They reason about right rectangular prisms with fractional side lengths to extend formulas for the volume of a right rectangular prism to fractional side lengths. They prepare for work on scale drawings and constructions in Grade 7 by drawing polygons in the coordinate plane.

Grade 6 Overview

Ratios and Proportional Relationships

- Understand ratio concepts and use ratio reasoning to solve problems.

The Number System

- Apply and extend previous understandings of multiplication and division to divide fractions by fractions.
- Multiply and divide multi-digit numbers and find common factors and multiples.
- Apply and extend previous understandings of numbers to the system of rational numbers.

Expressions and Equations

- Apply and extend previous understandings of arithmetic to algebraic expressions.
- Reason about and solve one-variable equations and inequalities.
- Represent and analyze quantitative relationships between dependent and independent variables.

Geometry

- Solve real-world and mathematical problems involving area, surface area, and volume.

Statistics and Probability

- Develop understanding of statistical variability.
- Summarize and describe distributions.

Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Ratios & Proportional Relationships

Understand ratio concepts and use ratio reasoning to solve problems.

- Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."*
- Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship. *For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $3/4$ cup of flour for each cup of sugar." "We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger."¹*
- Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.
- Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.
- Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?*
- Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means $30/100$ times the quantity); solve problems involving finding the whole, given a part and the percent.
- Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

¹ Expectations for unit rates in this grade are limited to non-complex fractions.

The Number System

Apply and extend previous understandings of multiplication and division to divide fractions by fractions.

- Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, create a story context for $(2/3) \div (3/4)$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $(2/3) \div (3/4) = 8/9$ because $3/4$ of $8/9$ is $2/3$. (In general, $(a/b) \div (c/d) = ad/bc$.) How much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $3/4$ -cup servings are in $2/3$ of a cup of yogurt? How wide is a rectangular strip of land with length $3/4$ mi and area $1/2$ square mi?*

Compute fluently with multi-digit numbers and find common factors and multiples.

- Fluently divide multi-digit numbers using the standard algorithm.

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- Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.
- Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor. *For example, express $36 + 8$ as $4(9 + 2)$.*

Apply and extend previous understandings of numbers to the system of rational numbers.

- Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.
- Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.
 - Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., $-(-3) = 3$, and that 0 is its own opposite.
 - Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.
 - Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.
- Understand ordering and absolute value of rational numbers.
 - Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. *For example, interpret $-3 > -7$ as a statement that -3 is located to the right of -7 on a number line oriented from left to right.*
 - Write, interpret, and explain statements of order for rational numbers in real-world contexts. *For example, write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express the fact that -3°C is warmer than -7°C .*
 - Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. *For example, for an account balance of -30 dollars, write $|-30| = 30$ to describe the size of the debt in dollars.*
 - Distinguish comparisons of absolute value from statements about order. *For example, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars.*

- Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

Expressions & Equations

Apply and extend previous understandings of arithmetic to algebraic expressions.

- Write and evaluate numerical expressions involving whole-number exponents.
- Write, read, and evaluate expressions in which letters stand for numbers.
 - Write expressions that record operations with numbers and with letters standing for numbers. *For example, express the calculation "Subtract y from 5" as $5 - y$.*
 - Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. *For example, describe the expression $2(8 + 7)$ as a product of two factors; view $(8 + 7)$ as both a single entity and a sum of two terms.*
 - Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). *For example, use the formulas $V = s^3$ and $A = 6s^2$ to find the volume and surface area of a cube with sides of length $s = \frac{1}{2}$.*
- Apply the properties of operations to generate equivalent expressions. *For example, apply the distributive property to the expression $3(2 + x)$ to produce the equivalent expression $6 + 3x$; apply the distributive property to the expression $24x + 18y$ to produce the equivalent expression $6(4x + 3y)$; apply properties of operations to $y + y + y$ to produce the equivalent expression $3y$.*
- Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). *For example, the expressions $y + y + y$ and $3y$ are equivalent because they name the same number regardless of which number y stands for..*

Reason about and solve one-variable equations and inequalities.

- Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
- Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.

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- Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p , q and x are all nonnegative rational numbers.
- Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.

Represent and analyze quantitative relationships between dependent and independent variables.

- Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time.

Geometry

Solve real-world and mathematical problems involving area, surface area, and volume.

- Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.
- Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = lwh$ and $V = bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.
- Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.
- Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.

Statistics & Probability

Develop understanding of statistical variability.

- Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. *For example, "How old am I?" is not a statistical question, but "How old are the students in my*

school?" is a statistical question because one anticipates variability in students' ages.

- Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
- Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.

Summarize and describe distributions.

- Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
- Summarize numerical data sets in relation to their context, such as by:
 - Reporting the number of observations.
 - Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.
 - Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.
 - Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

Science Standards

Overview

Discipline 1: Science Processes (S)

- Standard: Inquiry Process (IP)
- Standard: Inquiry Analysis and Communication (IA)
- Standard: Reflection and Social Implications (RS)

Discipline 2: Physical Science (P)

- Standard: Energy (EN)
 - Kinetic and Potential Energy (2)
- Energy Transfer (2)
 - Standard: Changes in Matter (CM)
- Changes in State (2)

Discipline 3: Life Science (L)

- Standard: Organization of Living Things (OL)
 - Producers, Consumers, and Decomposers (2)
- Standard: Ecosystems (EC)
 - Interactions of Organisms (1)
 - Relationships of Organisms (3)
 - Biotic and Abiotic Factors (2)
 - Environmental Impact of Organisms (2)

Discipline 4: Earth Science (E)

- Standard: Solid Earth (SE)
 - Soil (4)
 - Rock Formation (1)
 - Plate Tectonics (3)
 - Magnetic Field of Earth (2)
- Standard: Earth in Space and Time (ST)
 - Fossils (1)
 - Geologic Time (2)

Science Processes

Inquiry Process

Develop an understanding that scientific inquiry and reasoning involves observing, questioning, investigating, recording, and developing solutions to problems.

- Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observation.
 - Generate scientific questions based on observations, investigations, and research.
 - Design and conduct scientific investigations.
 - Use tools and equipment (spring scales, stop watches, meter sticks and tapes, models, hand lens, thermometer, models, sieves, microscopes) appropriate to scientific investigations.
 - Use metric measurement devices in an investigation.
 - Construct charts and graphs from data and observations.

- Identify patterns in data.

Inquiry Analysis and Communication

Develop an understanding that scientific inquiry and investigations require analysis and communication of findings, using appropriate technology.

- Inquiry includes an analysis and presentation of findings that lead to future questions, research, and investigations.
 - Analyze information from data tables and graphs to answer scientific questions.
 - Evaluate data, claims, and personal knowledge through collaborative science discourse.
 - Communicate and defend findings of observations and investigations using evidence.
 - Draw conclusions from sets of data from multiple trials of a scientific investigation.
 - Use multiple sources of information to evaluate strengths and weaknesses of claims, arguments, or data.

Reflection and Social Implications

Develop an understanding that claims and evidence for their scientific merit should be analyzed. Understand how scientists decide what constitutes scientific knowledge. Develop an understanding of the importance of reflection on scientific knowledge and its application to new situations to better understand the role of science in society and technology.

- Reflecting on knowledge is the application of scientific knowledge to new and different situations. Reflecting on knowledge requires careful analysis of evidence that guides decision-making and the application of science throughout history and within society.¹⁸
 - Evaluate the strengths and weaknesses of claims, arguments, and data.
 - Describe limitations in personal and scientific knowledge.
 - Identify the need for evidence in making scientific decisions.
 - Evaluate scientific explanations based on current evidence and scientific principles.
 - Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.
 - Design solutions to problems using technology.
 - Describe the effect humans and other organisms have on the balance of the natural world.
 - Describe what science and technology can and cannot reasonably contribute to society.
 - Describe how science and technology have advanced because of the contributions of many people throughout history and across cultures.

Physical Science

Energy

Develop an understanding that there are many forms of energy (such as heat, light, sound, and electrical) and that energy is transferable by convection, conduction, or

radiation. Understand energy can be in motion, called kinetic; or it can be stored, called potential. Develop an understanding that as temperature increases, more energy is added to a system. Understand nuclear reactions in the sun produce light and heat for the Earth.

- Kinetic and Potential Energy- Objects and substances in motion have kinetic energy. Objects and substances may have potential energy due to their relative positions in a system. Gravitational, elastic, and chemical energy are all forms of potential energy.
 - Identify kinetic or potential energy in everyday situations (for example: stretched rubber band, objects in motion, ball on a hill, food energy).
 - Demonstrate the transformation between potential and kinetic energy in simple mechanical systems (for example: roller coasters, pendulums).
 - Energy Transfer- Energy is transferred from a source to a receiver by radiation, conduction, and convection. When energy is transferred from one system to another, the quantity of energy before the transfer is equal to the quantity of energy after the transfer.
 - Explain how different forms of energy can be transferred from one place to another by radiation, conduction, or convection.
 - Illustrate how energy can be transferred while no energy is lost or gained in the transfer.

Changes in Matter

Develop an understanding of changes in the state of matter in terms of heating and cooling, and in terms of arrangement and relative motion of atoms and molecules. Understand the differences between physical and chemical changes. Develop an understanding of the conservation of mass. Develop an understanding of products and reactants in a chemical change.

- Changes in State- Matter changing from state to state can be explained by using models which show that matter is composed of tiny particles in motion. When changes of state occur, the atoms and/or molecules are not changed in structure. When the changes in state occur, mass is conserved because matter is not created or destroyed.
 - Describe and illustrate changes in state, in terms of the arrangement and relative motion of the atoms or molecules.
 - Explain how mass is conserved as a substance changes from state to state in a closed system.

Life Science

Organization of Living Things

Develop an understanding that plants and animals (including humans) have basic requirements for maintaining life, which include the need for air, water, and a source of energy. Understand that all life forms can be classified as producers, consumers, or decomposers as they are all part of a global food chain where food/energy is supplied by plants, which need light to produce food/energy.

Develop an understanding that plants and animals can be classified by observable traits and physical characteristics. Understand that all living organisms are composed of cells and they exhibit cell growth and division. Understand that all plants and animals have a definite life cycle, body parts, and systems to perform specific life functions.

- Producers, Consumers, and Decomposers – Producers are mainly green plants that obtain energy from the sun by the process of photosynthesis. All animals, including humans, are consumers that meet their energy needs by eating other organisms or their products. Consumers break down the structures of the organisms they eat to make the materials they need to grow and function. Decomposers, including bacteria and fungi, use dead organisms or their products to meet their energy needs.
 - Classify producers, consumers, and decomposers based on their source of food (the source of energy and building materials). *
 - Distinguish between the ways in which consumers and decomposers obtain energy.

Ecosystems

Develop an understanding of the interdependence of the variety of populations, communities and ecosystems, including those in the Great Lakes region. Develop an understanding of different types of interdependence and that biotic (living) and abiotic (non-living) factors affect the balance of an ecosystem. Understand that all organisms cause changes, some detrimental and others beneficial, in the environment where they live.

- Interactions of Organisms- Organisms of one species form a population. Populations of different organisms interact and form communities. Living communities and nonliving factors that interact with them form ecosystems.
 - Identify and describe examples of populations, communities, and ecosystems including the Great Lakes region.
- Relationships of Organisms- Two types of organisms may interact with one another in several ways: they may be in a producer/consumer, predator/prey, or parasite/host relationship. Some organisms may scavenge or decompose another. Relationships may be competitive or mutually beneficial. Some species have become so adapted to each other that neither could survive without the other.
 - Describe common patterns of relationships between and among populations (competition, parasitism, symbiosis, predator/prey).
 - Explain how two populations of organisms can be mutually beneficial and how that can lead to interdependency.
 - Predict how changes in one population might affect other populations based upon their relationships in the food web.
- Biotic and Abiotic Factors- The number of organisms and populations an ecosystem can support depends on the biotic (living) resources available and abiotic (nonliving) factors, such as quality of light and water, range of temperatures, and soil composition.

- Identify the living (biotic) and nonliving (abiotic) components of an ecosystem.
 - Identify the factors in an ecosystem that influence changes in population size.
- Environmental Impact of Organisms- All organisms (including humans) cause change in the environment where they live. Some of the changes are harmful to the organism or other organisms, whereas others are helpful.
 - Describe how human beings are part of the ecosystem of the Earth and that human activity can purposefully, or accidentally, alter the balance in ecosystems.
 - Predict possible consequences of overpopulation of organisms, including humans, (for example: species extinction, resource depletion, climate change, pollution).

Earth Science

Solid Earth

Develop an understanding of the properties of Earth materials and how those properties make materials useful. Understand gradual and rapid changes in Earth materials and features of the surface of Earth. Understand magnetic properties of Earth.

- Soil- Soils consist of weathered rocks and decomposed organic materials from dead plants, animals, and bacteria. Soils are often found in layers with each having a different chemical composition and texture.
 - Explain how physical and chemical weathering lead to erosion and the formation of soils and sediments.
 - Explain how waves, wind, water, and glacier movement, shape and reshape the land surface of the Earth by eroding rock in some areas and depositing sediments in other areas.
 - Describe how soil is a mixture made up of weather-eroded rock and decomposed organic material.
 - Compare different soil samples based on particle size and texture.²¹
- Rock Formation- Rocks and rock formations bear evidence of the minerals, materials, temperature/pressure conditions, and forces that created them.
 - Compare and contrast the formation of rock types (igneous, metamorphic, and sedimentary) and demonstrate the similarities and differences using the rock cycle model.
- Plate Tectonics- The lithospheric plates of the Earth constantly move, resulting in major geological events, such as earthquakes, volcanic eruptions, and mountain building.
 - Explain plate tectonic movement and how the lithospheric plates move centimeters each year.
 - Demonstrate how major geological events (earthquakes, volcanic eruptions, mountain building) result from these plate motions.
 - Describe layers of the Earth as a lithosphere (crust and upper mantle), convecting mantle, and dense metallic core.

- Magnetic Field of Earth- Earth as a whole has a magnetic field that is detectable at the surface with a compass.
 - Describe the Earth as a magnet and compare the magnetic properties of the Earth to that of a natural or manufactured magnet.
 - Explain how a compass works using the magnetic field of the Earth, and how a compass is used for navigation on land and sea.

Earth in Space and Time

Develop an understanding that the sun is the central and largest body in the solar system and that Earth and other objects in the sky move in a regular and predictable motion around the sun. Understand that those motions explain the day, year, moon phases, eclipses and the appearance of motion of objects across the sky. Understand that gravity is the force that keeps the planets in orbit around the sun and governs motion in the solar system. Develop an understanding that fossils and layers of Earth provide evidence of the history of Earth's life forms, changes over long periods of time, and theories regarding Earth's history and continental drift.

- Fossils- Fossils provide important evidence of how life and environmental conditions have changed in a given location.
 - Explain how rocks and fossils are used to understand the age and geological history of the Earth (timelines and relative dating, rock layers).
- Geologic Time- Earth processes seen today (erosion, mountain building, and glacier movement) make possible the measurement of geologic time through methods such as observing rock sequences and using fossils to correlate the sequences at various locations.
 - Explain how Earth processes (erosion, mountain building, and glacier movement) are used for the measurement of geologic time through observing rock layers.
 - Describe how fossils provide important evidence of how life and environmental conditions have changed.

Social Studies Standards

Overview

Sixth grade students will explore the tools and mental constructs used by historians and geographers. They will develop an understanding of Ancient World History, Eras 1 – 3, of the Western Hemisphere and will study contemporary geography of the Western Hemisphere. Contemporary civics/government and economics content is integrated throughout the year. As a capstone, the students will conduct investigations about past and present global issues. Using significant content knowledge, research, and inquiry, they will analyze an issue and propose a plan for the future. As part of the inquiry, they compose civic, persuasive essays using reasoned argument.

History

Temporal Thinking

Use historical conceptual devices to organize and study the past.

Historians use conceptual devices (eras, periods, calendars, time lines) to organize their study of the world. Chronology is based on time and reflects cultural and historical interpretations, including major starting points, and calendars based on different criteria (religious, seasonal, Earth-sun-and-moon relationships). Historians use eras and periods to organize the study of broad developments that have involved large segments of world's population and have lasting significance for future generations and to explain change and continuity.

- Explain why and how historians use eras and periods as constructs to organize and explain human activities over time.
- Compare and contrast several different calendar systems used in the past and present and their cultural significance (e.g., Olmec and Mayan calendar systems, Aztec Calendar Stone, Sun Dial, Gregorian calendar – B.C./A.D.; contemporary secular – B.C.E./C.E. Note: in 7th grade Eastern Hemisphere the Chinese, Hebrew, and Islamic/Hijri calendars are included).

Historical Inquiry and Analysis

Use historical inquiry and analysis to study the past.

History is a process of reasoning based on evidence from the past. Historians use and interpret a variety of historical documents (including narratives), recognize the difference between fact and opinion, appreciate multiple historical perspectives while avoiding present mindedness (judging the past solely in term of norms and values of today), and explain that historical events often are the result of multiple causation. Students will conduct their own inquiry and analysis in their studies about the ancient history of the Western Hemisphere.

- Explain how historians use a variety of sources to explore the past (e.g., artifacts, primary and secondary sources including narratives, technology, historical maps, visual/mathematical quantitative data, radiocarbon dating, DNA analysis).
- Read and comprehend a historical passage to identify basic factual knowledge and the literal meaning by indicating who was involved, what

happened, where it happened, what events led to the development, and what consequences or outcomes followed.

- Identify the point of view (perspective of the author) and context when reading and discussing primary and secondary sources.
- Compare and evaluate competing historical perspectives about the past based on proof.
- Identify the role of the individual in history and the significance of one person's ideas.

Historical Understanding

Use historical concepts, patterns, and themes to study the past.

Historians apply temporal perspective, historical inquiry, and analysis to spheres of human society to construct knowledge as historical understandings. These understandings are drawn from the record of human history and include human aspirations, strivings, accomplishments, and failures in spheres of human activity.

- Describe and use cultural institutions to study an era and a region (political, economic, religion/belief, science/technology, written language, education, family).
- Describe and use themes of history to study patterns of change and continuity.
- Use historical perspective to analyze global issues faced by humans long ago and today.

ERA 1 – THE BEGINNINGS OF HUMAN SOCIETY:

BEGINNINGS TO 4000 B.C.E./B.C.

Explain the basic features and differences between hunter-gatherer societies and pastoral nomads. Analyze and explain the geographic, environmental, biological, and cultural processes that influenced the rise of the earliest human communities, the migration and spread of people throughout the world, and the causes and consequences of the growth of agriculture.

Peopling of the Earth

Describe the spread of people in the Western Hemisphere in Era 1.

In the first era of human history, people spread throughout the world. As communities of hunters, foragers, or fishers, they adapted creatively and continually to a variety of contrasting, changing environments in the Americas.

Describe the early migrations of people among Earth's continents (including the Beringia Land Bridge).

Examine the lives of hunting and gathering people during the earliest eras of human society (tools and weapons, language, fire).

Agricultural Revolution

Describe the Agricultural Revolution and explain why it is a turning point in history.

The Agricultural Revolution was a major turning point in history that resulted in people and civilizations viewing and using the land in a systematic manner to grow food crops, raise animals, produce food surpluses, and the development of sedentary settlement.

- Describe the transition from hunter gatherers to sedentary agriculture (domestication of plants and animals).
- Describe the importance of the natural environment in the development of agricultural settlements in different locations (e.g., available water for irrigation, adequate precipitation, and suitable growing season).
- Explain the impact of the Agricultural Revolution (stable food supply, surplus, population growth, trade, division of labor, development of settlements).

**ERA 2 – EARLY CIVILIZATIONS AND CULTURES AND THE
EMERGENCE OF PASTORAL PEOPLES, 4000 TO 1000 B.C.E./B.C.**

Describe and differentiate defining characteristics of early civilization and pastoral societies, where they emerged, and how they spread.

Early Civilizations and Early Pastoral Societies

Describe the characteristics of early Western Hemisphere civilizations and pastoral societies.

During this era early agrarian civilizations and pastoral societies emerged. Many of the world's most fundamental institutions, discoveries, inventions, and techniques appeared. Pastoral societies developed cultures that reflected the geography and resources that enabled them to inhabit the more challenging physical environments such as the tundra and semi-arid regions of North and South America.

- Explain how the environment favored hunter-gatherer, pastoral, and small scale agricultural ways of life in different parts of the Western Hemisphere.
- Describe how the invention of agriculture led to the emergence of agrarian civilizations (seasonal harvests, specialized crops, cultivation, and development of villages and towns).
- Use multiple sources of evidence to describe how the culture of early peoples of North America reflected the geography and natural resources available (e.g., Inuit of the Arctic, Kwakiutl of the Northwest Coast; Anasazi and Apache of the Southwest).
- Use evidence to identify defining characteristics of early civilizations and early pastoral nomads (government, language, religion, social structure, technology, and division of labor).

**ERA 3 – CLASSICAL TRADITIONS AND MAJOR EMPIRES,
1000 B.C.E./B.C. TO 300 C.E./A.D.**

(Note: Mayan, Aztec, and Incan societies had their beginnings in Era 3 but became more prominent as civilizations in Era 4.)

Analyze the civilizations and empires that emerged during this era, noting their political, economic, and social systems, and their changing interactions with the environment.

Analyze the innovations and social, political, and economic changes that occurred through the emergence of agrarian societies of Mesoamerica and Andean South America and the subsequent urbanization and trading economies that occurred in the region. (Grade 6)

Classical Traditions and Major Empires in the Western Hemisphere

Describe empires and agrarian civilizations in Mesoamerica and South America.

Civilizations and empires that emerged during this era were noted for their political, economic and social systems and their changing interactions with the environment and the agrarian civilizations that emerged in Mesoamerica and South America.

- Analyze the role of environment in the development of early empires, referencing both useful environmental features and those that presented obstacles.
- Explain the role of economics in shaping the development of early civilizations (trade routes and their significance – Inca Road, supply and demand for products).
- Describe similarities and difference among Mayan, Aztec, and Incan societies, including economy, religion, and role and class structure.
- Describe the regional struggles and changes in governmental systems among the Mayan, Aztec, and Incan Empires.
- Construct a timeline of main events on the origin and development of early and classic ancient civilizations of the Western Hemisphere (Olmec, Mayan, Aztec, and Incan).

Geography

THE WORLD IN SPATIAL TERMS: GEOGRAPHICAL HABITS OF MIND

Describe the relationships between people, places, and environments by using information that is in a geographic (spatial) context. Engage in mapping and analyzing the information to explain the patterns and relationships they reveal both between and among people, their cultures, and the natural environment. Identify and access information, evaluate it using criteria based on concepts and themes, and use geography in problem solving and decision-making. Explain and use key conceptual devices (places and regions, spatial patterns and processes) that geographers use to organize information and inform their study of the world.

Spatial Thinking

Use maps and other geographic tools to acquire and process information from a spatial perspective.

Geographers use published maps, sketch (mental) maps, and other geographic representations, tools, and technologies to acquire, organize, process, and report information from a spatial perspective. World maps made for specific purposes (population distribution, climate patterns, vegetation patterns) are used to explain the importance of maps in presenting information that can be compared, contrasted, and examined to answer the questions “Where is something located?” and “Why is it located there?” Students will begin with global scale and then refocus the scale to study the region of the Western Hemisphere, and, finally, focus on a specific place.

- Describe how geographers use mapping to represent places and natural and human phenomena in the world.
- Draw a sketch map from memory of the Western Hemisphere showing the major regions (Canada, United States, Mexico, Central America, South America, and Caribbean).

Geographical Inquiry and Analysis

Use geographic inquiry and analysis to answer important questions about relationships between people, cultures, their environment, and relations within the larger world context.

Geographers use information and skills to reach conclusions about significant questions regarding the relationships between people, their cultures, the environments in which they live, and the relationships within the larger world context. Students will reach their own conclusions using this information and make a reasoned judgment about the most justifiable conclusion based on the authenticity of the information, their skill at critically analyzing the information, and presenting the results of the inquiry.

- Locate the major landforms, rivers (Amazon, Mississippi, Missouri, Colorado), and climate regions of the Western Hemisphere.
- Explain why maps of the same place may vary, including cultural perspectives of the Earth and new knowledge based on science and modern technology.
- Use data to create thematic maps and graphs showing patterns of population, physical terrain, rainfall, and vegetation, analyze the patterns and then propose two generalizations about the location and density of the population.
- Use observations from air photos, photographs (print and CD), films (VCR and DVD) as the basis for answering geographic questions about the human and physical characteristics of places and regions.
- Use information from modern technology such as Geographic Positioning System (GPS), Geographic Information System (GIS), and satellite remote sensing to locate information and process maps and data to analyze spatial patterns of the Western Hemisphere to answer geographic questions.
- Apply the skills of geographic inquiry (asking geographic questions, acquiring geographic information, organizing geographic information, analyzing geographic information, and answering geographic questions) to analyze a problem or issue of importance to a region of the Western Hemisphere.

Geographical Understanding

Use geographic themes, knowledge about processes and concepts to study the Earth.

The nature and uses of geography as a discipline and the spatial perspective require that students observe, interpret, assess, and apply geographic information and skills. The uses of the subject and content of geography are essential in the development of geographical understanding. A spatial perspective enables student to observe, describe, and analyze the organizations of people, places, and environments at different scales and is central to geographic literacy.

- Use the fundamental themes of geography (location, place, human environment interaction, movement, region) to describe regions or places on earth.
- Explain the locations and distributions of physical and human characteristics of Earth by using knowledge of spatial patterns.

- Explain the different ways in which places are connected and how those connections demonstrate interdependence and accessibility.

PLACES AND REGIONS

Describe the cultural groups and diversities among people that are rooted in particular places and in human constructs called regions. Analyze the physical and human characteristics of places and regions.

Physical Characteristics of Place

Describe the physical characteristics of places.

- Describe the landform features and the climate of the region (within the Western or Eastern Hemispheres) under study.
- Account for topographic and human spatial patterns (where people live) associated with tectonic plates such as volcanoes, earthquakes, settlements (Ring of Fire, recent volcanic and seismic events, settlements in proximity to natural hazards in the Western Hemisphere) by using information from GIS, remote sensing, and the World Wide Web.

Human Characteristics of Place

Describe the human characteristics of places.

- Describe the human characteristics of the region under study (including languages, religion, economic system, governmental system, cultural traditions).
- Explain that communities are affected positively or negatively by changes in technology (e.g., Canada with regard to mining, forestry, hydroelectric power generation, agriculture, snowmobiles, cell phones, air travel).
- Analyze how culture and experience influence people's perception of places and regions (e.g., the Caribbean Region that presently displays enduring impacts of different immigrant groups – Africans, South Asians, Europeans – and the differing contemporary points of view about the region displayed by islanders and tourists).

PHYSICAL SYSTEMS

Describe the physical processes that shape the Earth's surface which, along with plants and animals, are the basis for both sustaining and modifying ecosystems. Identify and analyze the patterns and characteristics of the major ecosystems on Earth.

Physical Processes

Describe the physical processes that shape the patterns of the Earth's surface.

- Construct and analyze climate graphs for two locations at different latitudes and elevations in the region to answer geographic questions and make predictions based on patterns. (e.g., compare and contrast Buenos Aires and La Paz; Mexico City and Guatemala City; Edmonton and Toronto).

Ecosystems

Describe the characteristics and spatial distribution of ecosystems on the Earth's surface.

- Explain how and why ecosystems differ as a consequence of differences in latitude, elevation, and human activities (e.g., South America's location relative to the equator, effects of elevations on temperature and growing season, proximity to bodies of water and the effects on temperature and rainfall, effects of annual flooding on vegetation along river flood plains such as the Amazon).
- Identify ecosystems and explain why some are more attractive for humans to use than are others (e.g., mid-latitude forest in North America, high latitude of Peru, tropical forests in Honduras, fish or marine vegetation in coastal zones).

HUMAN SYSTEMS

Explain that human activities may be seen on Earth's surface.

Human systems include the way people divide the land, decide where to live, develop communities that are part of the larger cultural mosaic, and engage in the cultural diffusion of ideas and products within and among groups.

Cultural Mosaic

Describe the characteristics, distribution and complexity of Earth's cultural mosaic.

- Identify and explain examples of cultural diffusion within the Americas (e.g., baseball, soccer, music, architecture, television, languages, health care, Internet, consumer brands, currency, restaurants, international migration).

Technology Patterns and Networks

Describe how technology creates patterns and networks that connect people, products, and ideas.

- List and describe the advantages and disadvantages of different technologies used to move people, products, and ideas throughout the world (e.g., call centers in the Eastern Hemisphere that service the Western Hemisphere; the United States and Canada as hubs for the Internet; transport of people and perishable products; and the spread of individuals' ideas as voice and image messages on electronic networks such as the Internet).

Patterns of Human Settlement

Describe patterns, processes, and functions of human settlement.

- Identify places in the Western Hemisphere that have been modified to be suitable for settlement by describing the modifications that were necessary (e.g., Vancouver in Canada; irrigated agriculture; or clearing of forests for farmland).
- Describe patterns of settlement by using historical and modern maps (e.g., coastal and river cities and towns in the past and present, locations of megacities – modern cities over 5 million, such as Mexico City, and patterns of agricultural settlements in South and North America).

Forces of Cooperation and Conflict

Explain how forces of conflict and cooperation among people influence the division of the Earth's surface and its resources.

- Identify factors that contribute to conflict and cooperation between and among cultural groups (control/use of natural resources, power, wealth, and cultural diversity).
- Describe the cultural clash of First Peoples, French and English in Canada long ago, and the establishment of Nunavut in 1999.

ENVIRONMENT AND SOCIETY

Explain that the physical environment is modified by human activities, which are influenced by the ways in which human societies value and use Earth's natural resources, and by Earth's physical features and processes. Explain how human action modifies the physical environment and how physical systems affect human systems.

Humans and the Environment

Describe how human actions modify the environment.

- Describe the environmental effects of human action on the atmosphere (air), biosphere (people, animals, and plants), lithosphere (soil), and hydrosphere (water) (e.g., changes in the tropical forest environments in Brazil, Peru, and Costa Rica).
- Describe how variations in technology affect human modifications of the landscape (e.g., clearing forests for agricultural land in South America, fishing in the Grand Banks of the Atlantic, expansion of cities in South America, hydroelectric developments in Canada, Brazil and Chile, and mining the Kentucky and West Virginia).
- Identify the ways in which human-induced changes in the physical environment in one place can cause changes in other places (e.g., cutting forests in one region may result in river basin flooding elsewhere; building a dam floods land upstream and may permit irrigation in another region).

Physical and Human Systems

Describe how physical and human systems shape patterns on the Earth's surface.

- Describe the effects that a change in the physical environment could have on human activities and the choices people would have to make in adjusting to the change (e.g., drought in northern Mexico, disappearance of forest vegetation in the Amazon, natural hazards and disasters from volcanic eruptions in Central America and the Caribbean and earthquakes in Mexico City and Colombia).

GLOBAL ISSUES PAST AND PRESENT

Throughout the school year the students are introduced to topics that address global issues that integrate time and place. Included are capstone projects that entail the investigation of historical and contemporary global issues that have significance for the student and are clearly linked to the world outside the classroom. The topics and issues are developed as capstone projects within units and at the end of the course. Regular experiences with those topics and issues are

necessary during each grade in order to build the background students will require to complete in-depth capstone projects.

Global Topic Investigation and Issue Analysis

Capstone projects require the student to use geography, history, economics, and government to inquire about major contemporary and historical issues and events linked to the world outside the classroom. The core disciplines are used to interpret the past and plan for the future. During the school year the students will complete at least three capstone projects. (National Geography Standards 17 and 18, p. 179 and 181)

- Contemporary Investigations – Conduct research on contemporary global topics and issues, compose persuasive essays, and develop a plan for action.

Contemporary Investigation Topics

- Global Climate Change – Investigate the impact of global climate change and describe the significance for human/environment relationships.
- Globalization – Investigate the significance of globalization and describe its impact on international economic and political relationships.
- Migration – Investigate issues arising from international movement of people and the economic, political, and cultural consequences.
- Human-Environmental Interactions – Investigate how policies from the past and their implementation have had positive or negative consequences for the environment in the future.
- Natural Disasters – Investigate the significance of natural disasters and describe the effects on human and physical systems, and the economy, and the responsibilities of government.
 - Investigations Designed for Ancient World History Eras – Conduct research on global topics and issues, compose persuasive essays, and develop a plan for action.

Contemporary Investigation Topics – Related to Content in World History and Contemporary Geography

Era 1

- Population Growth and Resources – Investigate how population growth affects resource availability.
- Migration – Investigate the significance of migrations of peoples and the resulting benefits and challenges.

Era 2

- Sustainable Agriculture – Investigate the significance of sustainable agriculture and its role in helping societies produce enough food for people.

Era 3

- Development – Investigate economic effects on development in a region and its ecosystems and societies.

Civics and Government

C1 PURPOSES OF GOVERNMENT

Analyze how people identify, organize, and accomplish the purposes of government.

Nature of Civic Life, Politics, and Government

Describe Civic Life, Politics, and Government and explain their relationships.

- Analyze competing ideas about the purposes government should serve in a democracy and in a dictatorship (e.g., protecting individual rights, promoting the common good, providing economic security, molding the character of citizens, or promoting a particular religion).

STRUCTURE AND FUNCTIONS OF GOVERNMENT

Describe the major activities of government, including making and enforcing laws, providing services and benefits to individuals and groups, assigning individual and collective responsibilities, generating revenue, and providing national security.

Characteristics of Nation-States

Describe the characteristics of nation-states and how they may interact.

- Define the characteristics of a nation-state (a specific territory, clearly defined boundaries, citizens, and jurisdiction over people who reside there, laws, and government), and how Western Hemisphere nations interact.
- Compare and contrast a military dictatorship such as Cuba, a presidential system of representative democracy such as the United States, and a parliamentary system of representative democracy such as Canada

RELATIONSHIP OF UNITED STATES TO OTHER NATIONS AND WORLD AFFAIRS

Explain that nations interact with one another through trade, diplomacy, treaties and agreements, humanitarian aid, economic sanctions and incentives, and military force, and threat of force.

Conflict and Cooperation Between and Among Nations

Explain the various ways that nations interact both positively and negatively.

- Explain the geopolitical relationships between countries (e.g., petroleum and arms purchases in Venezuela and Ecuador; foreign aid for health care in Nicaragua).
- Explain the challenges to governments and the cooperation needed to address international issues in the Western Hemisphere (e.g., migration and human rights).
- Give examples of how countries work together for mutual benefits through international organizations (e.g. North American Free Trade Agreement (NAFTA), Organization of American States (OAS), United Nations (UN)).

Economics

THE MARKET ECONOMY

Describe the market economy in terms of the relevance of limited resources, how individuals and institutions make and evaluate decisions, the role of incentives, how buyers and sellers interact to create markets, how markets allocate resources, and the economic role of government in a market economy.

Individual, Business, and Government Choices

Describe how individuals, businesses and government make economic decisions when confronting scarcity in the market economy.

- Explain how incentives vary in different economic systems (e.g. acquiring money, profit, goods, wanting to avoid loss in position in society, job placement).

THE NATIONAL ECONOMY

Use economic concepts, terminology, and data to identify and describe how a national economy functions and to study the role of government as a provider of goods and services within a national economy.

Role of Government

Describe how national governments make decisions that affect the national economy

- Describe the impact of governmental policy (sanctions, tariffs, treaties) on that country and on other countries that use its resources.

INTERNATIONAL ECONOMY

Analyze reasons for individuals and businesses to specialize and trade, why individuals and businesses trade across international borders, and the comparisons of the benefits and costs of specialization and the resulting trade for consumers, producers, and governments.

Economic Interdependence

Describe patterns and networks of economic interdependence, including trade.

- Use charts and graphs to compare imports and exports of different countries in the Western Hemisphere and propose generalizations about patterns of economic interdependence.
- Diagram or map the movement of a consumer product from where it is manufactured to where it is sold to demonstrate the flow of materials, labor, and capital (e.g., global supply chain for computers, athletic shoes, and clothing).
- Explain how communications innovations have affected economic interactions and where and how people work (e.g., internet-based home offices, international work teams, international companies).
- Economic Systems
- Describe how societies organize to allocate resources to produce and distribute goods and services.
- Explain and compare how economic systems (traditional, command, and market) answer four basic questions: What should be produced? How will it be produced? How will it be distributed? Who will receive the benefits of production? (e.g., compare United States and Cuba, or Venezuela and Jamaica.)

Public Discourse

Identifying and Analyzing Issues, Decision Making, Persuasive Communication About a Public Issue, and Citizen Involvement

Grandville Public Schools
Grade 6 Curriculum Standards

- Clearly state an issue as a question or public policy, trace the origins of an issue, analyze various perspectives, and generate and evaluate alternative resolutions. Deeply examine policy issues in group discussions and debates to make reasoned and informed decisions. Write persuasive/argumentative essays expressing and justifying decisions on public policy issues. Plan and conduct activities intended to advance views on matters of public policy, report the results, and evaluate effectiveness.
 - Identify public policy issues related to global topics and issues studied.
 - Clearly state the issue as a question of public policy orally or in written form.
 - Use inquiry methods to acquire content knowledge and appropriate data about the issue.
 - Identify the causes and consequences and analyze the impact, both positive and negative.
 - Share and discuss findings of research and issue analysis in group discussions and debates.
 - Compose a persuasive essay justifying the position with a reasoned argument.
 - Develop an action plan to address or inform others about the issue at the local to global scales.

Citizen Involvement

Act constructively to further the public good.

- Demonstrate knowledge of how, when, and where individuals would plan and conduct activities intended to advance views in matters of public policy, report the results, and evaluate effectiveness.
- Engage in activities intended to contribute to solving a national or international problem studied.
- Participate in projects to help or inform others (e.g., service learning projects).