



ARCHDIOCESE
of MILWAUKEE

CURRICULUM
Guide
FOR PARENTS

GRADE 6

To obtain additional information, please contact:

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Before you get started...

What is a Curriculum Guide?

Academic excellence is a hallmark of Catholic schools in the Archdiocese of Milwaukee. To assist schools in maintaining academic excellence, the archdiocese's Office for Schools has developed curriculum guides for grades 4K-8th that identify what we want our students to know and be able to do at the end of each grade based on national, state, and local standards. With these guides as a template, each individual school develops a plan to clearly articulate what is taught, how it is taught, and how student achievement is assessed for each grade. This process of "fine tuning" results in a school specific standards-based curriculum that guides teaching and learning.

Characteristics of a 6th Grader

- Experiences an increased level of activity and energy
- Can vary in behavior from alert, imaginative, outgoing, and energetic to rebellious, quarrelsome, and self-centered
- Likes to "hang out" in groups
- Can become argumentative, emotional, and sensitive due to fast pace of growth and hormonal changes
- Develops a fierce loyalty to friends; highly influenced by peer opinion
- Develops increased awareness of the opposite sex but may not have appropriate social skills to express this interest
- Demonstrates an increased sensitivity to criticism, especially in front of peers
- Begins to challenge authority
- Looks for heroes and heroines in popular culture
- Begins to develop a historical sense
- Depends on support and security of family while showing signs of wanting to be independent of family
- Experiences ambivalence about changes in his/her own body



CREED

- Can identify and comment upon the basic concepts of the Creed
- Is able to relate the concept of God as creator and the plan of human salvation revealed by God
- Can provide a critical description of the creation stories as revealing God's plan for humanity
- Can relate the history of Israel as the template for salvation in Christ
- Knows that the Old Testament covenants find their culmination in Christ
- Understands Church as Body of Christ and People of God
- Identifies and understands the diversity of ministries within the Church
- Can discuss the roles of Scripture and Tradition in Catholic life
- Uses relevant theological vocabulary associated with an introduction to Bible study; e.g., religious truth, genealogy, covenant, salvation history, revelation
- Can summarize key Bible passages related to salvation history
- Is able to use the Bible as a source for understanding the Church's faith
- Recognizes and provides examples of different literary forms in the Bible; e.g., fable, parable, myth, hymn, law, poetry, prophetic writing, narratives, faith history, wisdom, etc.
- Is able to explain the development of God's Covenant with Israel: Covenant with Abraham (Gn 15); Joseph (Gn 37-50); Moses (Ex 20); David (1 Sam, 2 Sam)
- Expresses belief in Jesus as the Messiah, Prophet, Teacher, true God and true Man (Lk 4: 16-22; Mt 5-7; NT parables)

LITURGY AND SACRAMENTS

- Demonstrates a personal connection with God's presence in the rituals and sacred nature of life associated with the Church through the practice of liturgy and the sacraments
- Describes symbolic actions in the sacraments
- Recognizes liturgical prayer including celebrations of the sacraments and the Mass
- Uses and can explain sacramentals; e.g., holy water
- Participates in active ministry at Eucharist, Reconciliation, seasonal rituals of the Church, and prayer services
- Recognizes that the Mass always celebrates the Paschal Mystery and sometimes celebrates the solemnities, feasts, and memorials of Mary and the saints
- Celebrates the Liturgical Year, with special emphasis on Advent, Christmas, Lent, the Triduum, and the Easter season
- Connects the seven sacraments to life experiences
- Reflects upon the Eucharist as both a sacrament and a sacrifice
- Can identify and relate ritual actions in the Old Testament to the sacramental life of the Church

MORAL LIFE

- Describes how external factors can form the conscience and signal what is right and wrong, as well as how to behave
- Views one's growing sense of moral understanding as a part of an emerging identity
- Associates and practices Reconciliation as a key part of the Christian moral life
- Recognizes actions that demonstrate how a Christian ought to respond to social, economic, and political situations
- Integrates the skills of justice and peacemaking into one's own actions
- Articulates and provides positive and negative examples of the principles of Catholic Social Teaching
- Is conscious of racial, ethnic, and class differences and makes specific efforts to be inclusive in relationships, reaching out to those not included or marginalized
- Researches, plans, and reflects on a service project that addresses a need in the community
- Identifies aspects of the person of Jesus in the Gospels that most directly relate to the person one is becoming

CHRISTIAN PRAYER

- Experiences silence in various forms and environments as a key dimension of prayer; e.g., retreat, adoration, meditation
- Experiences meditation as prayer
- Engages in adoration, recognizing that we are creatures of God
- Reviews and practices all prayers previously learned/memorized
- Uses Scripture, especially the parables, as a source of prayer and can relate the parables to life experiences
- Recognizes Abraham as a model of prayer, especially through the ways in which he expressed his faith through prayer (Gn 18: 16-33)
- Understands that the Psalms can be used as a means of personal and communal prayer
- Describes the stories of figures from the Old Testament as they relate to God through prayer; e.g., Moses, Elijah, Jeremiah, etc.

FAMILY

- Understands and applies the belief that families are the foundation of society, and evaluates judgments in light of this truth
- Recognizes that the humility and fidelity of Christian daily life exists in the family

FRIENDSHIPS AND RELATIONSHIPS

- Applies understanding of inclusivity in friendships and social situations
- Identifies the dimensions of responsible dating: no drugs, alcohol, or sexual behavior; no manipulation, lies, or gossiping; respect for self, others, and others' friends; respect for body, feelings and time; honesty; being true to self; kindness; and boundaries

HUMAN SEXUALITY

- Understands that God's plan calls us to refrain from sexual activity outside of marriage, and applies to self and relationships
- Understands the importance of delayed gratification, and that the body is the temple of the Holy Spirit
- Understands chastity: that each person is meant to be a full and whole human being and each person's behavior should reflect that goodness
- Understands that we are all called to chastity, in accord with our state in life -- married, single, religious, consecrated celibate. Understands that chastity promotes abstention from immoral sexual activity, and applies to own life

MARRIAGE

- Knows that the purpose of marriage is the good of spouses, procreation and the education of children
- Becomes aware of the difference between sacramental marriage and civil marriage

MORAL DECISION MAKING

- Understands that the Church helps us to know and live by the truth
- Demonstrates the knowledge that growing in one's relationship with God, through prayer, helps one to know God's will and make right decisions

RESPECT FOR LIFE

- Analyzes life situations in the context that human life begins at conception with the right to life, and every person is a person with dignity
- Demonstrates a consistent respect for life

VIRTUES

- Is introduced to and begins to practice Chastity, Modesty, and Reverence
- Understands Prudence, Temperance, Justice, and Fortitude
- Practices Respect and Responsibility

LANGUAGE STANDARDS

- Recognize pronoun case: subjective, objective, possessive
- Recognize intensive pronouns (myself and ourselves)
- Recognize unclear or ambiguous antecedents
- Recognize shifts in pronoun number and person
- Recognize variations from standard English
- Correct shifts in pronoun number and person
- Correct unclear or ambiguous antecedents
- Place pronouns in the proper case
- Use intensive pronouns
- Use correct pronoun number and person
- Use correct pronouns when speaking
- Demonstrate command of standard English grammar and usage when writing
- Demonstrate command of standard English grammar and usage when speaking
- Recognize correct capitalization, punctuation and spelling
- Use proper punctuation for nonrestrictive/parenthetical elements
- Apply spelling rules
- Recognize language conventions for writing, speaking, reading and listening
- Recognize various sentence patterns
- Recognize style and tone
- Apply language knowledge when writing, reading, and listening
- Apply knowledge of language conventions when writing, reading, and listening
- Determine when to vary sentence patterns for meaning, reader/listener interest, or style
- Maintain consistency in style and tone when writing
- Use knowledge of language and conventions when speaking
- Vary sentence patterns for meaning, listener interest, and style
- Maintain consistency in style and tone while speaking
- Identify common context clues
- Identify and define Greek and Latin affixes and roots
- Use common reference materials to find pronunciation, clarification of meaning, or part of speech
- Determine the meaning of words using context clues or Greek and Latin affixes and roots
- Verify a word's inferred meaning using context clues or a dictionary
- Choose from a range of vocabulary strategies to determine a word's meaning

- Interpret different types of figures of speech
- Distinguish among the different types of word relationships
- Define the terms denotations and connotations of words
- Analyze text to locate figures of speech
- Analyze the relationship between particular words
- Distinguish among the connotations of words with similar denotations
- Identify general academic and domain-specific words and phrases
- Gather vocabulary knowledge important to comprehension or expression
- Accurately use words important to the comprehension of general academic and domain-specific words
- Apply vocabulary knowledge when considering words important to comprehension of expression
- Select appropriate resources to aid in gathering vocabulary knowledge

READING STANDARDS FOR FOUNDATIONAL SKILLS

- Identify textual evidence supporting analysis
- Recognize textual evidence that supports inferences of text
- Summarize and cite the evidence that supports explicit analysis and inferences
- Define the central idea and particular details
- Recall central idea devoid of personal opinion and judgment
- Summarize details supporting the central idea in a non-biased summary
- Identify key ideas, events, and ideas about individuals
- Define anecdote
- Analyze how key individuals, events, and ideas are introduced, illustrated, and elaborated
- Identify figurative, connotative, and technical words and phrases
- Determine the meaning of figurative, connotative, and technical words and phrases
- Recognize text structure through chronology, comparison, cause/effect, and problem/solution
- Analyze how particular sentences, paragraphs, chapters, or sections fit textual structure
- Analyze how sentences, paragraphs, chapters, or sections contribute to idea development
- Identify details or examples developing the point of view or purpose
- Explain how the author conveys his/her point of view
- Access information from different media, formats, or texts
- Integrate information from various media, formats, or texts
- Demonstrate understanding using information from various media, formats, or texts
- Recall arguments and claims of a text
- Identify reasons and evidence
- Summarize the argument and specific claims
- Evaluate the argument and claims for support

- Identify events common in two or more texts
- Compare/contrast the events depicted by different authors
- Identify key ideas, details, craft, structure, and integration of knowledge
- Comprehend key ideas, details, craft, structure, and integration of knowledge

READING STANDARDS FOR INFORMATIONAL TEXT

- Recognize explicit textual evidence
- Recognize inferences from a text
- Cite explicit textual evidence
- Analyze text to make inferences
- Define and understand theme or central ideas of a text
- Identify details supporting the main idea or theme of a text
- Analyze supporting details of a text
- Distinguish between textual facts and personal opinions or judgments
- Summarize a text based on facts
- Recall a series of episodes from a particular story or drama
- Identify character response or change
- Summarize how a plot unfolds in episodes
- Analyze how character(s) respond or change towards resolution
- Identify figurative and connotative words and phrases
- Recognize meaning and tone in a text
- Interpret figurative and connotative meanings
- Analyze the impact of word choice on meaning and tone
- Define the various structures of a literacy text
- Recognize the theme, setting, and plot
- Analyze how a sentence, chapter, scene, or stanza fits into the overall structure of a text
- Analyze how particular structure contributes to development of theme, setting, and plot
- Explain point of view through a narrator or speaker
- Explain how an author develops different points of view
- Identify details used to develop point of view
- Recognize author's strategies to develop point of view
- Recognize the difference of multiple text formats: text, audio, visual, live performance
- Evaluate the value of multiple text formats: text, audio, visual, live performance
- Contrast what is seen/heard in a text when visually/auditory presented to what is experienced when read
- Analyze how stories of different genre approach a similar theme and topic
- Compare and contrast how stories of the same genre approach a similar theme and topic

- Identify/understand key ideas and details
- Identify/understand craft and structure
- Identify/understand integration of knowledge
- Comprehend key ideas and details
- Comprehend craft and structure
- Comprehend integration of knowledge

SPEAKING AND LISTENING STANDARDS

- Identify key ideas from reading material
- Identify components of a collegial discussion and planning
- Recognize multiple perspectives and opposing viewpoints
- Reflect on discussion topics using evidence
- Define individual roles for particular discussions
- Collaborate to set goals and deadlines
- Justify ideas and responses shared with evidence
- Formulate comments, questions, and responses based on evidence
- Paraphrase and reflect on multiple perspectives posed in discussions
- Engage in a variety of discussions by listening and shared acquired and prior knowledge
- Follow agreed-upon rules during discussion
- Carry out assigned roles during discussion
- Pose and respond to specific questions to clarify understanding
- Connect comments to others' remarks
- Express ideas clearly
- Identify details and information that contribute to the topic, text, and issues studied
- Visually, quantitatively, and orally interpret information presented in various media and formats
- Explain how information contributes to a topic, text, or to an issue
- Define and identify arguments, claims, reasons, and evidence
- Distinguish between supported and unsupported claims
- Identify a speaker's argument and specific claims
- Identify findings claims, descriptions, facts, and details
- Recognize appropriate eye contact, volume, and pronunciation
- Determine logical sequence and pertinent descriptions
- Determine facts and details that accentuate ideas or themes
- Orally present claims and findings sequencing ideas logically
- Orally present claims and findings using pertinent descriptions, facts, and details
- Use appropriate eye contact, volume, and clear pronunciation
- Clarify information

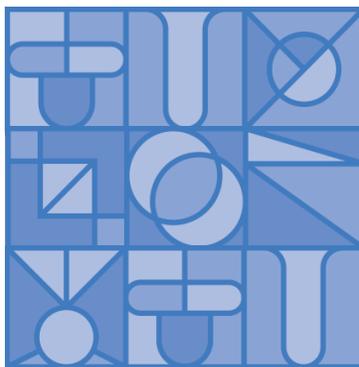
- Determine what multimedia components best clarify information in presentations
- Determine what visual displays will best clarify information in presentations
- Include multimedia components in a presentation to clarify
- Incorporate visual displays in a presentation to clarify information
- Identify formal and informal settings
- Describe the qualities of formal and informal speech
- Distinguish between formal and informal speech
- Evaluate if formal or informal speech is appropriate in the context of a given situation
- Adopt speech to a given context or task
- Demonstrate correct use of formal English when appropriate

WRITING STANDARDS

- Select credible sources
- Recognize words, phrases, and clauses showing relationships among claims
- Recognize claims, relevance, and evidence
- Identify and define formal style
- Explain the argument presented
- Organize reasons and evidence with support
- Evaluate credibility of sources used
- Evaluate relevance of the evidence
- Demonstrate topical understanding
- Clarify relationships among claims and reasons
- Establish and maintain a formal style
- Plan a concluding statement following the argument
- Write an argument including an introduction and concluding statement
- Write an argument including organization of reasons and evidence with credible sources
- Write an argument including words, phrases, and clauses that clarify relationships
- Write an argument that establishes and maintains a formal style
- Identify formal styles of writing
- Identify relevant facts, definitions, concrete details, quotations and examples
- Identify transitions that clarify idea and concept relationships
- Identify precise language and domain-specific vocabulary
- Determine when to include formatting, graphics, and multimedia to aid comprehension
- Select transitions that clarify relationships
- Determine how to organize ideas, concepts, and information
- Select precise language and domain-specific vocabulary to inform or explain

- Establish and maintain a formal style
- Determine a supportive concluding statement
- Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information, maintaining a formal style and providing a concluding statement or section
- Write with text selection, organization, and analysis in mind
- Introduce, organize and develop a topic with relevant facts, definitions, concrete details, quotations, examples, and other information
- Use formatting, graphics, and multimedia to aid comprehension
- Use transitions to clarify the relationships between ideas and concepts
- Use precise language and domain-specific vocabulary to inform or explain
- Recognize the characteristics of a narrative
- Recognize ways authors engage readers
- Recognize how writers use transitional words to signal change
- Analyze narrative techniques of dialogue, pacing, and description
- Compare/contrast relevant and irrelevant details in developing experiences, events, and character
- Analyze effective organizational patterns and conclusions
- Use techniques to engage the reader and establish context
- Use precise words, details, and language to develop experiences and events
- Write a narrative that engages and establishes a context and provides a conclusion
- Write a narrative that uses dialogue and description to develop experiences, events, and characters
- Write a narrative that uses transitions to convey sequence and signal shifts
- Write a narrative that uses precise, descriptive sensory language
- Analyze the reason for writing to decide on task, purpose, or audience
- Determine suitable idea development, organization and style strategies
- Produce clear and coherent writing with idea development, organization, and style
- Recognize how to plan, revise, edit, rewrite, and try a new approach
- Know how to edit for conventions
- Develop and strengthen writing by planning, revising, editing, rewriting, or trying a new approach
- Know how to download, save, upload, and attach documents
- Select tools for communicating and collaborating
- Evaluate technology tools for collaborating, producing, and publishing writing
- Use technology to collaborate, produce, and publish writing
- Use keyboarding skills to type at least three pages in a single sitting
- Select appropriate research and inquiry methods
- Select multiple resources to conduct short research projects
- Evaluate sources to answer a research question
- Narrow/refocus the inquiry by selecting information from multiple sources

- Conduct a short research project to answer a question
- Recognize a credible source
- Recognize plagiarism
- Summarize information from print and digital sources
- Assess the credibility of each source
- Paraphrase and credit sources to avoid plagiarism
- Provide basic bibliographic information
- Identify key ideas and details to support conclusions
- Cite textual evidence to analyze explicit text
- Draw evidence as support for research
- Analyze key ideas and details as evidence of understanding text
- Reflect on key ideas and details as evidence of understanding text
- Identify task, purpose, and audience for various types of writing
- Identify and understand the various organizational structures
- Determine when to write for short or extended time frames
- Determine appropriate organizational structure for various writing
- Write for various tasks, purposes, and audiences for short or extended time frames
- Write for a range of discipline-specific tasks, purposes, and audiences



The skills and understanding that your child will gain during 6th grade are among the most important foundations for college and career readiness. These include working with ratios and rates and working with variables and variable expressions — the building blocks of algebra. Many of this year’s topics will remain a major emphasis throughout the middle school years and into high school.

HELP YOUR CHILD LEARN AT HOME

Look for “word problems” in real life. Some 6th grade examples might include:

- Determining the average speed of a family trip, based on the distance traveled and the time taken; or estimating the time that a trip will take, given the distance and an estimate of the average speed. (Examples can also come from the news – for example, a swimmer crossing the English Channel or a space probe traveling to another planet.)
- Finding the surface area of the walls and ceiling in a room to determine the cost of painting the room.

EXPRESSIONS AND EQUATIONS

- Write numerical expressions involving whole number exponents Ex: $34 = 3 \times 3 \times 3 \times 3$
- Evaluate numerical expressions involving whole number exponents Ex: $34 = 3 \times 3 \times 3 \times 3 = 81$
- Solve order of operation problems that contain exponents
- Use numbers and variables to represent desired operations
- Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient)
- Identify parts of an expression as a single entity, even if not a monomial
- Substitute specific values for variables
- Evaluate algebraic expressions including those that arise from real-world problems
- Apply order of operations when there are no parentheses for expressions that include whole number exponents
- Translate written phrases into algebraic expressions
- Translate algebraic expressions into written phrases
- Generate equivalent expressions using the properties of operations
- Recognize when two expressions are equivalent
- Recognize solving an equation or inequality as a process of answering “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
- Recognize that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set
- Define inverse operation

- Know how inverse operations can be used in solving one-variable equations
- Apply rules of the form $x + p = q$, and $p x = q$, for cases in which p , q and x are all nonnegative rational numbers, to solve real-world and mathematical problems; with only one unknown quantity
- Develop a rule for solving one-step equations using inverse operations with nonnegative rational coefficients
- Solve and write equations for real-world mathematical problems containing one unknown
- Identify the constraint or condition in a real-world or mathematical problem in order to set up an inequality
- Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions
- Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem
- Represent solutions to inequalities of the form $x > c$ or $x < c$, with infinitely many solutions, on number line diagrams
- Define independent and dependent 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 (dependent) in terms of the other quantity (independent)
- Analyze the relationship between the dependent variable and independent variable using tables and graphs
- Relate the data in a graph and table to the corresponding equation

GEOMETRY

- Recognize and know how to compose and decompose polygons into triangles and rectangles
- Compare the area of a triangle to the area of the composed rectangle
- Apply the techniques of composing and/or decomposing to find the area of triangles, special quadrilaterals and polygons to solve mathematical real-world problems
- Discuss, develop and justify formulas for triangles and parallelograms
- Know how to calculate the volume of a right rectangular prism
- Apply volume formulas for right rectangular prisms to solve real-world and mathematical problems involving rectangular prisms with fractional edge lengths
- Model the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths
- Draw polygons in the coordinate plane
- Use coordinates (with the same x -coordinate or the same y -coordinate) to find the length of a side of a polygon
- Apply the technique of using coordinates to find the length of a side of a polygon drawn in the coordinate plane to solve real-world and mathematical problems
- Know the 3-D figures can be represented by nets
- Represent three-dimensional figures using nets made up of rectangles and triangles
- Apply knowledge of calculating the area of rectangles and triangles to a net, and combine the areas for each shape into one answer representing the surface area of a three-dimensional figure
- Solve real-world and mathematical problems involving surface area using nets

RATIOS AND PROPORTIONAL RELATIONSHIPS

- Write ratio notation – $a:b$, a to b , a/b
- Know order matters when writing a ratio
- Know ratios can be simplified
- Know ratios compare two quantities; the quantities do not have to be the same unit of measure
- Recognize that ratios appear in a variety of different contexts; part-to-whole, part-to-part, and rates
- Generalize that all ratios relate two quantities or measures within a given situation in a multiplicative relationship
- Analyze your context to determine which type of ratio is represented
- Identify and calculate a unit rate
- Use appropriate math terminology as related to rate
- Analyze the relationship between a ratio $a:b$ and a unit rate a/b where $b \neq 0$
- Make a table of equivalent ratios using whole numbers
- Find the missing values in a table of equivalent ratios
- Plot pairs of values that represent equivalent ratios on the coordinate plane
- Know that a percent is a ratio of a number to 100
- Find a percent of a number as a rate per 100
- Use tables to compare proportional quantities
- Apply the concept of unit rate to solve real-world problems involving unit pricing
- Apply the concept of unit rate to solve real-world problems involving constant speed
- Apply ratio reasoning to convert measurement units in real-world and mathematical problems
- Apply ratio reasoning to convert measurement units by multiplying or dividing in real-world and mathematical problems
- Solve real-world and mathematical problems involving ratio and rate
- Solve real-world problems involving finding the whole, given a part and a percent

STATISTICS AND PROBABILITY

- Recognize that data can have variability
- Recognize a statistical question (examples versus non-examples)
- Know that a set of data has a distribution
- Describe a set of data by its center
- Describe a set of data by its spread and overall shape
- Recognize there are measures of central tendency for a data set
- Recognize there are measures of variances for a data set
- Recognize (measures) of central tendency for a data set summarize the data with a single number

- Recognize (measures) of variation for a data set describe how its values vary with a single number
- Identify the components of dot plots, histograms, and box plots
- Find the median, quartile and interquartile range of a set of data
- Analyze a set of data to determine its variance
- Create a dot plot to display a set of numerical data
- Create a histogram to display a set of numerical data
- Create a box plot to display a set of numerical data
- Organize and display data in tables and graphs
- Report the number of observations in a data set or display
- Describe the data being collected, including how it was measured and its units of measurement
- Calculate quantitative measures of center
- Calculate quantitative measures of variance
- Identify outliers
- Determine the effect of outliers on quantitative measures of a set of data
- Choose the appropriate measure of central tendency to represent data
- Analyze the shape of the data distribution and the context in which the data were gathered to choose the appropriate measures of central tendency and variability and justify why this measure is appropriate in terms of content

THE NUMBER SYSTEM

- Compute quotients of fractions divided by fractions (including mixed numbers)
- Interpret quotients of fractions
- Solve word problems involving division of fractions by fractions
- Fluently divide multi-digit numbers using the standard algorithm with speed and accuracy
- Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation with speed and accuracy
- Fluently identify the factors of two whole numbers less than or equal to 100 and determine the Greatest Common Factor (GCF)
- Fluently identify the multiples of two whole numbers less than or equal to 12 and determine the Least Common Multiple (LCM)
- Apply the Distributive Property to rewrite addition problems by factoring out the GCF
- Identify an integer and its opposite
- Use integers to represent quantities in real world situations (above/below sea level, etc.)
- Explain where 0 fits into a situation represented by integers
- Identify a rational number as a point on the number line

- Identify the location of 0 on a number line in relation to positive and negative numbers
- Recognize opposite signs of numbers as locations on opposite sides of 0 on the number line
- Recognize the signs of both numbers in an ordered pair; indicate which quadrant of the coordinate plane the ordered pair will be located
- Find and position pairs of integers and other rational numbers on a coordinate plane
- Reason that the opposite of the opposite of a number is the number itself
- Reason that when only the x value in a set of ordered pairs are opposites, it creates a reflection over the y-axis
- Recognize that when the only y value in a set of ordered pairs are opposites, it creates reflection over the x-axis
- Reason that when two ordered pairs differ only by signs, the locations of the points are related by reflections across both axes
- Order rational numbers on a number line
- Identify absolute values of rational numbers
- Interpret statements of inequality as statements about relative position of two numbers on a number line diagram
- Write, interpret, and explain statements of order for rational numbers in real-world contexts
- Interpret absolute value as magnitude for a positive or negative quantity in a real-world situation
- Distinguish comparisons of absolute value from statements about order and apply to real world contexts
- Calculate absolute value
- Graph points in all four quadrants of the coordinate plane
- Solve real-world problems by graphing points in all four quadrants of a coordinate plane
- Given only coordinates, calculate the distances between two points with the same first coordinate or the same second coordinate using absolute value

ECONOMICS

Production/Consumption/Distribution:

- Describe how personal economic decisions impact global economy (e.g., starting new business initiatives, boycotts, and earning power of workers)
- Analyze the impact of personal decisions on global issues (e.g., trade agreements, recycling, and conserving the environment)
- Determine the location of natural resources and explain how they generate trade and economic patterns
- Describe effects of investments in infrastructure (e.g., education, health care, public safety, transportation, etc.) on the economy
- Identify and explain various points of view concerning economic issues (e.g., taxation, unemployment, inflation, the national debt, and distribution of income)
- Compare the standard of living in various societies

Exchange:

- Interpret and explain the development of money in history
- Differentiate among the various economic & political systems (e.g., feudalism, capitalism, communism, etc.)
- Distinguish and explain basic economic concepts (e.g., supply and demand; production, exchange, and consumption; labor, wages, and capital; inflation and deflation; public and private goods and services; market economy and command economy)
- Identify the economic roles of institutions (e.g., corporations and businesses, banks, labor unions, and the Federal Reserve System)

POLITICAL SCIENCE

Citizenship:

- Demonstrate ways in which a citizen may participate in public policy debates
- Identify individual responsibilities to local, state, national and global communities
- Explain the role and impact of civil actions
- Locate, organize, and use relevant information to understand issues

Laws:

- Explain how laws are developed, changed, and enforced
- Analyze and discuss important political documents (e.g., the Magna Carta, Constitution, Bill of Rights, and landmark decisions of the Supreme Court)

Government:

- Explain the role of political parties and interest groups in American politics
- Identify and explain the different forms of government, including the basic principles of democracy
- Explain how legislative, executive, and judicial powers are separated and balanced at the federal level
- Describe and explain how the federal system separates the powers of federal, state, and local government
- Distinguish how the powers of government are acquired, maintained, justified, and sometimes abused
- Describe the role and effects of international organizations and political alliances throughout the World
- Analyze how various groups of people and cultures govern themselves

HISTORY

Time:

- Interpret the past using a variety of primary and secondary sources
- Compare ancient and present-day communities around the World
- Analyze the cause and effect relationship of different events over time

People:

- Identify and describe significant people in the major eras in the United States and World History
- Examine the impact of immigration on the United States and World History
- Summarize major issues associated with the history, culture, and tribal sovereignty of the indigenous peoples of Americas
- Research the political values of freedom, democracy, equality, & justice as embodied in important documents (e.g. the Magna Carta, Declaration of Independence, U.S. Constitution, and the Bill of Rights)
- Organize and analyze information to place people in historical perspective

Events:

- Analyze significant events and the major eras of the United States and the World (See Appendix)
- Describe the relationship between and among significant events in the United States and World History
- Critically analyze current events in the United States and the World
- Explain the interpretation of historical events according to various viewpoints
- Identify major scientific discoveries and technological innovations and describe their social and economic effects on society
- Explain the need for laws and policies to regulate science and technology

BEHAVIORAL SCIENCE

Individual:

- Describe and explain how various factors influence individual identity

Institution:

- Describe cooperation and interdependence among groups, societies, and nations
- Demonstrate knowledge of the World's religions

Society:

- Compare and contrast the components of various region's culture
- Explain impact of World events globally
- Describe the reflection of cultural values and ideas in art and architecture
- Describe cultural contributions of racial and ethnics groups in the United States and the World
- Identify examples of bias and stereotyping and how they contribute to conflict
- Analyze cultural conflicts in Unites States History
- Give examples of media influence on behavior and decision-making of individuals and groups

GEOGRAPHY

Location:

- Identify past & present countries is the World
- Explain relative and absolute location of places using appropriate geographic terminology
- Locate and identify physical features in the World

Map Skills:

- Use maps, charts, and graphs to display and compare information
- Use an atlas to estimate distance, calculate scale, identify dominant patterns of climate and land use, and compute population density
- Construct mental maps of selected locales, regions, states, and countries and draw maps from memory, representing relative location, direction size, and shape
- Create different types of maps (e.g., political, physical, and thematic)

Regions:

- Identify past & present World regions
- Identify United State regions throughout history

Human Environment Interaction:

- Describe and analyze ways in which people interact with, modify and adapt with the environment
- Research the causes and consequences of global issues (e.g., urbanization, extinction of species, consumption of natural resources, and World events)
- Identify changing boundaries and major land acquisitions of the United States

Place:

- Identify components of culture (e.g., religion, art, language, customs, and cuisine)
- Understand the different characteristics of climate, landforms, bodies of water, cities, governments, and other characteristics of place

Movement:

- Explain the movement of people, ideas, products, and diseases in the World
- Evaluate the impact of science and technology on the United States and the World

CATHOLIC SOCIAL TEACHINGS

Life and Dignity of the Human Person:

- Analyzes social issues based on whether human dignity is valued or harmed
- Identifies elements of human dignity based on Catholic Social Teaching
- Acts to transform human dignity
- Uses conflict resolution skills
- Identifies abuses of human dignity found in American Society
- Identifies Biblical passages related to human dignity

The Call to Family, Community, and Participation:

- Models responsible behavior to family and community through service
- Is involved in service projects beyond the local community
- Uses the church's social teachings as a lens to look at the moral and human dimensions of public issues

The Rights and Responsibilities of the Human Person:

- Articulates the component parts of human dignity
- Identifies actions that would be considered abuses of human rights (local, national, international)
- Practices peaceful conflict resolution strategies within the family, school, and community
- Researches social data and church teaching as a way to begin to transform injustice

Option for the Poor and the Vulnerable:

- Shares personal resources to help the poor and vulnerable
- Can discuss laws and policies that can benefit the poor and vulnerable members of society
- Practices behaviors that help others
- Can articulate the causes of poverty and the systems which prevent people from overcoming poverty
- Does research on the 20th and the 21st century people who have fought for justice, e.g. Archbishop Romero, Dorothy Day, Martin Luther King
- Clearly articulates the difference between justice and charity

Dignity of Work and the Rights of Workers:

- Can discuss the role work can play as a contribution to self and society
- Can articulate the importance of intrinsic values
- Demonstrates putting forth the best effort in school, recreation, and work
- Demonstrates respect for the basic rights and responsibilities at school and neighborhood
- Gives examples of the basic rights and responsibilities of workers in at least three different job areas

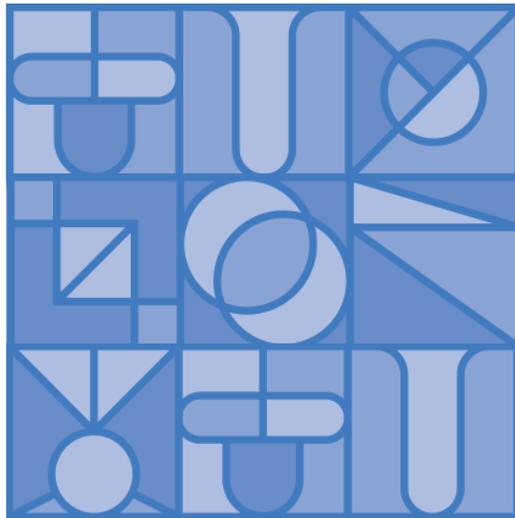
Solidarity of the Human Family:

- Models attitudes and behaviors that accept and value differences (racial, ethnic, economic, etc.)
- Displays an awareness of responsibility to others throughout the world
- Demonstrates the polices, and behaviors that support a peaceful world

Care for God's Creation:

- Displays individual and group actions to protect and preserve the environment

Takes an active role in programs and laws that support and help all forms of life



Dear Parents:

A strong foundation in science, technology, engineering, and mathematics is essential for preparing our students to be well informed citizens as well as prepared for college and the work force. Our traditional science programs have focused on content, facts, and vocabulary, but have lacked the ability for students to engage in the actual application of scientific concepts. The Next Generation Science Standards (NGSS) have refocused K-12 science education to focus on the big ideas through an emphasis on firsthand experiences such as investigation, design, and modeling, to help make more meaningful connections to the concepts that will stay with our children for a lifetime.

The NGSS promote a new way of teaching and learning that allows students to experience science in a meaningful way. This is accomplished by integrating three dimensions of learning as well as technology and engineering principles:

- **Core Disciplinary Concepts:** This is the content that is being covered (ex. Biology).
- **Science and Engineering Practices:** This focuses on the process of how science is conducted in the real world, such as through planning and carrying out investigations.
- **Cross Cutting Concepts:** These are science ideas, like *cause and effect*, that permeate all the sciences.

Your child/children will experience instruction in the classroom that emphasizes scientific exploration and experimentation. Children will be engaged in questioning, exploring and discussing possible solutions, investigating science concepts, using argumentation, and being fully active in the learning process. This approach mirrors real-world science practices and engages students in a more meaningful way. Not only will our students be immersed in investigative experiences, but they will also be developing important critical-thinking skills that will cultivate the great thinkers and innovators of tomorrow.

PHYSICAL SCIENCE

- Develop the historical perspective of the atomic and molecular theory
- Describe organization of the Periodic Table including how each element is represented
- Differentiate how all matter is composed of atoms, consisting of protons, neutrons, and electrons
- Model how molecules form based on the patterns in the periodic table
- Compare and contrast covalent and ionic bonds
- Summarize the accomplishments of a contributing scientist in physical science
- Observe, describe, and identify changes in properties based on chemical reactions
- Trace the life cycle of a product made of synthetic materials beginning with the natural resources
- Evaluate the sustainability of a product through its life cycle

- Compare and contrast the characteristics of particles in a solid, liquid, and a gas
- Distinguish between the common use and application of the term heat
- Demonstrate how particle behavior changes as thermal energy is added or removed
- Recognize how a gain or loss of thermal energy causes a physical change in state
- Investigate fluid pressure in terms of speed and temperature
- Illustrate that atoms are conserved in physical and chemical processes
- Compare and contrast basic chemical reactions
- Conduct an experiment and collect data to support the law of conservation of thermal energy
- Articulate Newton's First, Second, and Third Law of Motion and provide examples of each
- Design a solution to a problem to demonstrate the varying responses of two colliding objects
- Investigate the motion of objects and collect and analyze to explain changes in motion in terms of unbalanced forces
- Describe how magnetic field strength changes with distance
- Develop a testable question and design an experiment to determine factors that can influence the strength of electromagnetic forces
- Collect data related to strength of interactions, distance from the sun, or orbital periods of objects in the solar system
- Construct and defend argument on gravitational forces using data collected
- Design an experiment using a magnet or a compass to demonstrate magnetic fields
- Apply an understanding of magnetic fields in an experiment to magnetic fields in outer space
- Conduct an experiment and display collected data to show the relationship between mass, energy, and speed
- Describe the different types of potential energy
- Develop a model to explain the relationship between
 - Distance and gravitational potential energy, for example a roller coaster at varying position on a hill or objects at varying heights on shelves
 - Distance and magnetic potential energy, for example changing the direction/orientation of a magnet
 - Distance and electrical potential energy, for example a balloon with static electric charge brought closer to a classmate's hair
- Design and test a device that supports a prediction of the insulating properties of materials
- Plan an investigation that compares initial and final temperatures of an isolated variable:
 - Same mass of different materials
 - Different masses of the same material
 - Same mass of same material in different environments
- Recognize that energy is not lost, but changes forms
- Develop an explanation of how kinetic energy is transferred based on an experiment in which objects move
- Trace the changes in forms and types of energy in a closed system, for example a swinging pendulum, spring, rubber band, or bow and arrow
- Explain that waves have wavelength, frequency, and amplitude

- Differentiate between three types of waves
- Observe and demonstrate that sound is affected by the matter through which it travels
- Describe how sound travels in waves
- Demonstrate how the ear is a receptor for sound
- Identify visible light as one component of the electromagnetic spectrum
- Model how light interacts with matter by transmission, absorption or reflection
- Investigate the reflection of light with mirrors and refraction of light with lenses
- Identify the differences between analog and digital signals
- Provide evidence to explain why a digital device is more reliable than an analog device

LIFE SCIENCE

- Distinguish differences between single-celled and multicellular organisms
- Provide evidence that living things are made of cells
- Summarize the accomplishments of a contributing scientist in Life Science
- Describe the structure and function of different parts of a cell
- Demonstrate how parts of the cell work together to provide energy for life processes
- Compare and contrast a variety of body structures/systems within organisms and their role for survival
- Show the relationship between the levels of organization in living things: cells, tissues, organs, systems
- Describe the interdependence of a human's interactive systems
- Recognize an organism's behaviors/physical adaptations
- Compare and contrast different behaviors and adaptations between species in different environments
- Analyze the impact of changing one environmental condition on population growth
- Analyze the impact of one genetic factor on survival
- Represent the chemical process of photosynthesis
- Represent the relationship between photosynthesis and respiration
- Demonstrate how different types of neurons work together to transmit information to and from the brain/spinal cord
- Recognize interactions between living and nonliving things in an environment
- Recognize the competition of limited resources among organisms in an environment and analyze the effects on growth and reproduction
- Identify and classify symbiotic relationships
- Describe the eight biomes in terms of their distinct biotic and abiotic characteristics
- Compare and contrast the pattern of interactions between organisms in varying environments
- Describe how plants are producers
- Discover that plants influence other life processes
- Create a model to demonstrate food web interactions in a particular ecosystem
- Demonstrate energy transfer within a food web utilizing the energy pyramid

- Trace the cycling of atoms between living and nonliving parts of an ecosystem
- Understand that through the process of succession, communities change over time
- Infer changes in populations based on physical or biological components
- Utilize a graph to analyze population change data
- Analyze water purification, nutrient recycling, soil erosion to maintain biodiversity and the health of a natural system
- Compare the benefits and deficits of design solutions for maintaining biodiversity
- Identify the parts of a chromosome within the nucleus of a cell
- Identify the chemical and structural properties of DNA and its role in specifying the characteristics of an organism within an organism
- Describe how chromosomes are contained in both egg and sperm and carry instruction for the new individual
- Demonstrate how genes can be affected by mutations
- Create a pedigree chart
- Describe how DNA makes proteins
- Understand that sexual and asexual reproduction are necessary for the continuation to the species
- Describe the stages of the cell cycle
- Describe the stages of meiosis
- Model and compute how an inherited trait is determined by one or more genes using a Punnett Square
- Research types of genetic diseases and create a pedigree to explain the pattern of inheritance
- Describe the process of genetic engineering and its effects on our society, remembering that God is the Author of all life and has a grand design for creation
- Diagram sedimentary layers to indicate relative age of fossils
- Calculate absolute age of a fossil using radioactive half-life formula/chart
- Compare species within a range on the geological timeline
- Compare and contrast skeletal systems of modern species, as well as compare/contrast modern to ancient
- Construct a model to demonstrate relatedness
- Describe the stages of development of a growing embryo and fetus
- Identify patterns of similar characteristics
- Simulate or create a visual to demonstrate the process of natural selection
- Create data table and/or graph to convey data of predator/prey within an environment
- Project how current trends in human resource use and population growth will influence the natural environment, and show how current policies affect those trends
- Recognize how organisms evolve, remembering that God is the Author of all life
- Know the history of the Theory of Evolution
- Explain how some of the changes on the earth are contributing to changes in the balance of life and affecting the survival or population growth of certain species

EARTH SCIENCE

- Explain the orbital motion of objects in the solar system
- Describe how the tilt of the earth determines seasons and length of day
- Draw a diagram or make a model to explain solar and lunar eclipses
- Summarize the accomplishments of a contributing scientist in Earth Science
- Understand how humans use technology to explore space
- Know that billions of galaxies exist in the universe
- Understand how the force of gravity keeps the planets and other bodies in orbit
- Describe Newton's Law of Gravitation
- Develop a scale model to represent space distances
- Explain how telescopes are used to make observations and collect data about the solar system and the universe
- Analyze data collected from various types of telescopes and spacecraft
- Compare and contrast characteristics of each planet
- Evaluate the ability of a space object to support life
- Construct a model to show Earth is comprised of layers including a core, mantle, lithosphere, hydrosphere and atmosphere
- Demonstrate the movement of energy throughout the system of Earth's layers
- Describe the formation of soil including texture, fertility and resistance to erosion
- Compare and contrast the interrelationships involved in the process of the rock cycle
- Explain how successive layers of sedimentary rock are affected by folding, breaking and uplifting layers
- Identify and evaluate the impact of local geologic processes
- Identify and evaluate the impact of major geologic events
- Compare and contrast how water, wind, and ice cause weathering and erosion on Earth's surface
- Construct an argument to show that the fossils contained in the successive layers of rock can be used to confirm the age, history and changing life forms of the earth
- Distinguish between landforms that are created through constructive and destructive forces
- Design a model to demonstrate that Earth's crust is divided into plates that move in response to mantle movement
- Demonstrate via model/diagram that the sun's energy drives the water cycle and that the water cycle is a continuous process of recycling
- Create an illustration to show the composition and structure of the Earth's atmosphere
- Explain how heat, moisture and air movement determine weather
- Utilize data from weather instrumentation
- Demonstrate wind flow from high pressure areas to low pressure areas; global atmospheric movement influences local weather
- Diagram how local lakes affect local weather
- Analyze how temperature, pressure and the Coriolis Effect cause wind and water currents
- Examine how geographic features affect climate

- Use maps to explain regional climates
- Use historical temperature data to investigate factors that influence climate and weather patterns and seasonal changes
- Identify warm and cold currents on a continental/world map
- Create essential research questions related to the distribution of natural resources
- Develop an argument based on evidence to show how human activity is impacting the quality and quantity of natural resources
- Explain standards and safety procedures used regarding natural disasters
- Describe technologies used to predict, monitor and minimize the effects of natural hazards
- Compare and contrast the effects of environmental changes on living things
- Evaluate the impact of global development/expansion on earth structures
- Develop/Design a solution to a local environmental issue
- Identify one natural resource that is impacted by an increase in human population
- Outline the arguments using evidence to illustrate the human impact on natural resources
- Analyze tables, graphs, or maps of global regional temperatures and atmospheric levels of gases to generate questions and possible solutions to reduce the impact of global climate change

SCIENCE AND ENGINEERING PRACTICES

- Ask questions and define problems
- Develop and use models (examples can be physical, conceptual, or graphical)
- Plan and carry out investigations
- Analyze and interpret data
- Use mathematics and computational thinking
- Construct explanations (for science) and design solutions (for engineering)
- Engage in an argument based on evidence
- Obtain, evaluate, and communicate information

CATHOLIC SOCIAL TEACHINGS

- Work collaboratively and respect the ideas, roles, and abilities of others
- Students will be able to demonstrate stewardship inspired by Catholic values in the care of local and global environments
- Identify the relationships between the roles of science, technology, and Catholic ethics in the global community
- Understand and appreciate that many different people of varied cultures have made contributions that benefit both science and society
- Relate heredity and reproduction to Catholic teachings
- Discuss the theory of evolution in the context of Catholic teaching about the origin of life
- Compare/describe life from the fossil record with modern life forms and discuss Biblical implications