



ARCHDIOCESE
of MILWAUKEE

Office for Schools

Curriculum Guide

Grade 7

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 7th Grader

- ✓ Experiences great variation in physical, emotional, social and spiritual development
- ✓ Is impacted greatly by his/her changing body and newly acquired ability to think abstractly
- ✓ Struggles to express autonomy and may have difficulty distinguishing nuances of truth
- ✓ Thrives when allowed opportunities to experience the positive aspects of the new gifts of their mind and body
- ✓ Is challenged by being encouraged to think and engage in experiences which elicit deep compassion
- ✓ Benefits from journaling and meditation as positive sources for his/her introspective tendencies
- ✓ Develops most fully when provided experiences that will accommodate the wide variations in maturation
- ✓ Demonstrates a need for fairness and justice
- ✓ Experiences affirming and positive relationships with persons of both genders
- ✓ Continues to develop autonomy within the context of family

Grade Level 7 Expectations

Credal Church

- Recognizes that faith is our response to God who gives Himself to us
- Recognizes Jesus Christ as the greatest of God's gifts to us
- Knows that God revealed Himself gradually in words and actions
- Knows the Church's description of the Trinity as God in three divine persons
- Describes the major traditions of our roots as Catholic Christians, e.g., marks of the Church, Church hierarchy, lay leadership, ecumenism
- Knows the role of Mary, the apostles, saints and holy people in our faith traditions
- Identifies one's self as being a unique creation made in God's image
- Recognizes that we are called to cooperate freely with God's plan
- Knows that Mary remained free from sin her whole life from conception to death
- Knows that Christ is the heavenly high priest always interceding for us
- Knows that at the end of time we will rise with our glorified bodies
- + Uses stories from Scripture that describe the person and ministry of Jesus Christ: Baptism of Jesus (Matthew 3:13-17); Jesus Calls the Fishermen (Mark 1: 16-20, Matthew 9:9-13); the teachings of Jesus (Matthew 5-7, Matthew 25:31-46, John 3:16, John. 13-17); The Good Shepherd (John 10:1-10)
- + Recognizes major periods in the Bible and in the history of the Catholic Church
- + Explains the relationship between the Old and New Testament

Liturgy and Sacraments

- Knows that liturgy is the work of Christ through his Church
- Names the sacraments of the Church and associates them with life experiences, e.g., family meals and Eucharist, forgiveness and Reconciliation, commitment Matrimony/Holy Orders/Confirmation
- Grows in understanding the many facets of the sacramental life of the Church
- Participates regularly in Sunday Eucharist
- Recognizes and understands the real presence of Christ in the Eucharist
- Participates in the Sacrament of Reconciliation
- Articulates the cycles of the Liturgical Year, including special feasts
- Identifies the ritual nature of life and associates it with the ritual of the Church, e.g., seasons of nature and the seasons of the Church Year
- Recognizes sacraments as effective signs of grace given by Christ and entrusted to the Church
- + Identifies sacramental actions in Scripture: Rebirth (John 3:1-18); Commitment (Acts 2:1-13); Ritual Meal (Matthew 26:20-29, Mark 4:17-25, Luke 22:14-20, 1 Corinthians 11:23-26, Mark 6:34-44); Forgiveness (John 20:22-23); Healing (James 5:13-15, Luke 5:17-25); Ministry (Matthew 28:18-20); Marriage (Genesis 2:21-25, Mark 10:6-9)

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Moral Life

- Describes experiences of conscience which signal what is right and wrong: a moral compass which guides us toward the Kingdom of God
- Identifies personal and moral choices as expressions of a Catholic moral life
- Associates social, economic and political choices with Christian morality
- Recognizes that some sins are collective and social-the wrongful acts of a group
- Integrates the skills of justice and peacemaking into actions
- Recognizes that the values of our Catholic faith are contrary to the message in some contemporary music and media
- + Names and describes the Ten Commandments, the Beatitudes and the Corporal and Spiritual Works of Mercy as guidelines for living a happy life and applies them to daily life (Matthew 5:3-12, Matthew 25:31-46, John 13:1-20)
- + Associates Jesus as a model of how we are to behave toward others (Luke 8:1-3, Luke 10:38-45, Matthew 19:13-15, John 13:12-16, John 13:34-35, John 15:8-10)
- + Connects Scripture to life issues: Rich Young Man (Matthew 19:16-24)
- Recognizes that God's plan calls us to refrain from sexual activity outside of marriage*
- Recognizes that there are many sinful uses of sexuality in society*
- Knows that substance abuse has many deadly effects on mind and body*
- Practices the virtues of chastity, tolerance, understanding, prudence and self-acceptance*
- Can define bullying and harassment and recognizes it when it occurs**
- Knows how to use conflict management skills**
- Can define and discuss the meaning of sexual harassment and sexual abuse**

Christian Prayer

- Experiences a relationship with God in individual prayer, including meditation and spontaneous prayer
- Recognizes and experiences belonging to a community which prays with and for each other
- Recognizes that prayer is rooted in hope and is a "surge of the heart" toward God
- Knows that the Lord's Prayer summarizes the Gospel and prays it often
- Prays the Jesus Prayer "Lord Jesus Christ, Son of God, have mercy on me a sinner"
- Grows in the knowledge of God's loving Presence through retreat experiences
- Knows and prays all prayers memorized through the grade levels such as the Glory to the Father (Doxology), the Lord's Prayer, Hail Mary, Apostles Creed, the Act of Contrition, the Rosary
- Uses Scripture as a source of prayer
- Recognizes and uses music as a form of prayer

ENGLISH LANGUAGE ARTS

Grade 7

Language

- Recognize phrases and clauses
 - Identify compound complex sentences
 - Identify misplaced and dangling modifiers
 - Identify strategies to improve expression in language
 - Demonstrate command of standard English grammar and usage when writing
 - Explain the function of phrases and clauses in general and in specific sentences
 - Choose the best type of sentence for signaling relationships among ideas
 - Correct misplaced and dangling modifiers
 - Demonstrate command of standard English grammar and usage when speaking
 - Choose phrases and clauses correctly when speaking
 - Select and combine sentences to show relationships between/among speaking
 - Apply correct capitalization, punctuation, and spelling\
 - Know that coordinate adjectives describe the same word or term
 - Use a comma to separate coordinate adjectives
 - Recall and apply spelling rules
 - Recognize language conventions for writing, speaking, reading and listening
 - Recognize precise and concise language
 - Apply knowledge of language conventions when writing, reading, and listening
 - Use precise and concise language to eliminate wordiness and redundancy when writing
 - Use knowledge of language conventions when speaking
 - Use precise and concise language to eliminate wordiness and redundancy when speaking
 - Identify multiple-meaning words and phrases
 - Identify grade appropriate roots and affixes
 - Recognize strategies for finding meanings of unknown words
 - Determine/clarify the meaning of words using context clues
 - Determine/clarify the meaning of words using Greek and Latin affixes and roots
 - Choose from a range of vocabulary strategies to determine a word's meaning
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- Verify preliminary determination of a word's inferred meaning in context or a dictionary
 - Use print and digital reference materials to find pronunciation
 - Use print and digital reference materials to determine or clarify precise meaning
 - Use print and digital reference materials to identify meaning and a word's part of speech
 - Interpret figurative language
 - Know the different types of relationships of words
 - Recognize the meaning of the terms connotation (associations) and denotation (definitions)
 - 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 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 Informational Text

- Identify inferences from a text
- Identify explicit information from a text
- Recognize credible resources/sources
- Analyze several pieces of a text to determine explicit meaning
- Formulates inferences from textual material

- Identify two or more central ideas
- Define and recognize an objective summary
- Analyze the development of two or more central ideas
- Provide an objective summary of the text
- Identify key ideas about individuals, events, and ideas in a text
- Analyze the interactions between individuals, events, and ideas in a text
- Discuss how ideas influence events
- Discuss how individuals influence ideas or events
- Identify figurative, connotative, and technical words and phrases
- Identify tone in text
- Determine the meaning of figurative, connotative, and technical words/phrases
- Analyze how meaning and tone are impacted by specific word choice
- Determine how major sections of text contribute to or develop the main idea
- Analyze how sentences contribute to or develop the main idea
- Analyze how paragraphs contribute to or develop the main idea
- Analyze how a chapter/section contributes to or develops the main idea
- Determine the author’s point of view or purpose
- Identify details or examples for developing the point of view or purpose
- Explain how the author conveys his/her point of view
- Make a distinction between the author’s point of view and those of others mentioned or implied
- Contrast how the author distinguishes his/her position from that of others
- Support analysis with textual examples
- Recognize characteristics of audio, video, and multimedia versions of text
- Describe similarities and differences between various media portrayals of subjects
- Analyze how the audio, video, or multimedia version of various texts portrays the subject
- Define relevant evidence
- Define sufficient evidence
- Define sound reasoning
- Identify the argument and claims in a text
- Trace the argument and specific claims in a text
- Assess the relevance of evidence for specific claims
- Assess the sufficiency of evidence for specific claims
- Assess the soundness of the reasoning
- Evaluate the argument and specific claims
- Identify key information by different authors emphasizing different evidence
- Identify key information by different authors advancing different interpretations of facts
- Analyze how texts by different authors present their ideas by emphasizing different evidence
- Analyze how texts by different authors present their ideas by advancing different interpretations of facts
- Identify/understand key ideas and details
- Identify/understand craft and structure
- Demonstrate understanding of key ideas and details
- Demonstrate understanding of craft and structure

Reading Standards for Literature

- Identify inferences from a text
- Identify explicit information from a text
- Recognize credible resources/sources
- Explicitly analyze what a text says
- Formulate inferences from a text
- Cite resources that support analysis
- Recognize theme and central idea of a text
- Identify supporting details of a text
- Determine a theme or central idea of a text
- Analyze theme or central idea development over the course of a text
- Provide an objective summary of a text
- Describe elements of a story or drama

- Identify interactions between elements
- Analyze how a change in one element shapes another
- Analyze how elements of a story or drama interact
- Identify figurative words and phrases
- Identify connotative words and phrases
- Identify rhymes and repetitions of sounds, including alliteration in a verse or stanza
- Identify rhymes and repetitions of sounds, including alliteration in a story or drama
- Interpret figurative meanings
- Interpret connotative meanings
- Analyze the impact of rhymes and repetitions of sounds in a stanza or poem
- Analyze the impact of rhymes and repetitions of sounds in a story or drama
- Identify the poetic elements contributing to form/structure
- Identify the form/structure of various types of poetry and drama
- Explain the meaning of a poem
- Analyze the structure of a drama or poem
- Analyze the meaning of a drama or poem
- Analyze the relationship between the poem/drama's form and structure
- Identify authors' strategies used to contrast points of view of different characters or narrator
- Cite details or examples where the author develops the point of view of various characters or narrators
- Compare/contrast points of view of different characters or narrators
- Analyze how the author develops points of view of different characters or the narrators
- Analyze how the author contrasts different points of view in a single text
- Identify various mediums
- Recognize multimedia, film, and stage versions
- Analyze the effects of various medium techniques on written text: stories, dramas, and poems
- Analyze the effects of various medium techniques on audio, film, stage, and multimedia
- Determine the similarities of text to media
- Determine the differences of text to media
- (Not applicable to literature)
- Identify a time, place, or character in a historical account
- Identify a time, place, or character in a fictional work
- Compare/contrast fictional portrayal of a time, place, or character against a historical account of the same period
- Identify/understand key ideas and details
- Identify/understand craft and structure
- Comprehend key ideas and details
- Comprehend craft and structure

Speaking and Listening Standards

- Identify key ideas from reading material or research
- Describe components of a collegial discussion and planning
- Recognize key ideas and new information during discussions
- Reflect on discussion topics using evidence
- Track progress toward specific goals and deadlines, defining individual roles as needed
- Justify ideas and responses shared with evidence from text or research and modify when warranted
- Evaluate new information posed and form personal opinion
- Formulate comments, questions, and responses based on evidence
- Engage in a variety of discussions by listening and sharing acquired and prior knowledge
- Demonstrate collegial rules during discussion
- Articulate personal ideas clearly
- Pose relevant questions that elicit elaboration
- Respond to questions and comments with relevant details, bringing discussion back on topic as needed
- Acknowledge new information opposed and respond to change viewpoints as needed
- Identify main details and supporting details that contribute to the topic, text, and issue studied of various media formats

- Visually, quantitatively, and orally analyze the main ideas and supporting evidence presented in diverse media formats
- Explain how the ideas clarify the topic, text, and issue studied
- Define and identify a speaker's sound reasoning, arguments, relevant and sufficient evidence, and claims
- Identify a speaker's argument and specific claims
- Evaluate the soundness of the speaker's reasoning
- Evaluate the relevance and sufficiency of the speaker's evidence
- Identify claims/findings and salient (key) points
- Identify appropriate eye contact, adequate volume, and clear pronunciation
- Determine salient points and pertinent descriptions, facts, details, and examples
- Sequence claims, findings, salient points, pertinent descriptions, facts, details, and examples in a focused, coherent manner
- Present claims and findings
- Emphasize salient points
- Present information in a focused, coherent manner, including pertinent descriptions, facts, details, and examples
- Demonstrate appropriate eye contact, adequate volume, and clear pronunciation
- Determine what multimedia components/visual display options best clarify information
- Use multimedia components/visual displays in a presentation to clarify claims and findings
- Use multimedia components/visual displays in a presentation to emphasize salient points
- Describe formal and informal settings
- Describe qualities of formal and informal speech
- Determine if formal or informal speech is appropriate in the context of a given situation
- Adapt speech to a given context or task when speaking
- Demonstrate correct use of formal English when speaking

Writing Standards

- Identify accurate, credible sources
- Recognize phrases and clauses that create cohesion and clarify relationships
- Identify and define alternate and opposing claims
- Identify and define relevance, evidence, argument, and cohesion
- Identify and define formal style
- Determine how to introduce claims and acknowledge alternate or opposing claims
- Organize reasons and evidence logically
- Determine logical and relevant support for claims
- Evaluate sources for credibility and accuracy
- Evaluate relevance of the evidence
- Understand the topic or text
- Create cohesion and clarify relationships
- Establish and maintain a formal style
- Plan a concluding statement following the argument
- Produce an argument which introduces claims and acknowledges opposing or alternate claims
- Produce an argument to support claims, which is logically organized
- Produce an argument to support claims, which supports claims with logical reasoning and relevant evidence
- Produce an argument to support claims, which cites credible and accurate sources
- Produce an argument to support claims, which uses words, phrases, and clauses to create cohesion and clarify relationships
- Produce an argument to support claims, which establishes and maintains a formal style
- Produce an argument to support claims, which provides an appropriate concluding statement that follows from and supports the argument presented
- Determine which strategy is most effective to further develop a topic including definitions, classifications, comparison/contrast, and cause/effect
- Determine when to include graphics or multimedia
- Select transitions that clarify relationships
- Determine how to organize ideas, concepts, and information
- Select appropriate transitions to create cohesion and clarify relationships

- Determine precise language and domain-specific vocabulary
- Establish and maintain a formal style
- Determine a supportive concluding statement
- Write informative/explanatory texts to examine a topic, convey ideas, or explain concepts and information
Write with organization
- Write with analysis of relevant content
- Introduce and develop a topic with relevant facts, definitions, concrete details, quotations, and examples
- Organize ideas, concepts, and information using, definitions, classifications, comparison/contrast, and cause/effect
- 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
- Establish and maintain a formal style
- Provide a concluding statement or section
- Identify various points of view in a narrative
- Identify how authors use precise words/phrases, descriptions, and sensory details to help readers visualize or sense action
- Compare/contrast relevant and irrelevant details in developing experiences, events and characters
- Use techniques to engage the reader and establish context
- Use dialogue, pacing, and description to develop events and characters
- Use a variety of transitions to move events along and to signal shifts
- Develop conclusions that reflect on the events
- Use precise, descriptive, and sensory language to capture the action and to develop experiences and events
- Write a narrative that engages the reader
- Write a narrative that establishes a context and point of view
- Write a narrative that uses dialogue, pacing and description to develop experiences, events, and characters
- Write a narrative that uses a variety of transitions to convey sequence and signal shifts
- Write a narrative that uses appropriate precise, descriptive sensory language
- Write a narrative that leads to a reflective conclusion
- Analyze the reason for writing to identify task, purpose, and audience
- Determine suitable idea development strategies, organization, and style
- Produce writing with clear and coherent idea development
- Produce writing with clear and coherent organization
- Produce writing with clear and coherent style
- Recognize how to plan, revise, edit, and rewrite
- Know how to edit for conventions
- Develop and strengthen writing by planning, revising, editing, and rewriting
- Develop and strengthen writing by trying a new approach
- Determine how well the focus of the purpose has been addressed
- Determine how well the focus of audience has been addressed
- Identify publishing and collaborative options that use technology
- Know how to collaborate effectively
- Determine the best technology tools for producing and publishing writing appropriate to the purpose and audience
- Determine the best technology options for communicating and collaborating with others for an intended purpose
- Use technology (Internet) to produce, revise, edit, and publish writing
- Use technology to link to and cite sources
- Use technology to interact and collaborate with others
- Select appropriate sources to answer a question
- Determine relevant and irrelevant information from sources in order to answer a question
- Formulate focused questions from sources of information for further research and investigation
- Conduct steps for research to answer a question
- Generate additional related, focused questions for further research and investigation
- Implement appropriate inquiry methods to conduct a short research project
- Use effective search terms
- Recognize standard formats for citations

- Recognize credibility and accuracy of information
- Follow standard citation format
- Assess the credibility and accuracy of each source
- Quote or paraphrase the data and conclusions of others avoiding plagiarism
- Identify key ideas and details to support conclusions through research
- Cite textual evidence to analyze explicit text
- Draw evidence from key ideas and details as support for research
- Analyze key ideas and details as evidence of understanding text
- Draw upon key ideas and details as support for research
- Identify audience, topic, and purpose
- Identify appropriate organizational structure for various writings
- Determine appropriate organizational structure to use for various types of writing based upon task, purpose, and audience
- Write for various audiences, purposes, or tasks for shortened time frames
- Write for various audiences, purposes, or tasks for extended time frames

MATH

In 7th grade, your child will grow in skill and understanding as he or she continues the previous grade's work in proportional relationships, equations, and positive and negative numbers. These topics will remain a major emphasis throughout the middle school years and into high school. A good command of rates and proportional relationships, including percentages, is also an important life skill.

HELP YOUR CHILD LEARN AT HOME

Look for “word problems” in real life. Some 7th grade examples might include:

- Figuring the amount of a 15% tip or determining what percentage of weekly income goes to pay taxes.
- Using a scale diagram in a manual or a newspaper article to determine lengths, areas, distances, or other measures.
- For a long-term project, help your child choose a stock and follow its value on the stock market using the newspaper or the Internet. Have your child calculate the stock's percent increase or decrease each month.

EXPRESSIONS AND EQUATIONS

- Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients
- Combine like terms with rational coefficients
- Factor and expand linear expressions with rational coefficients using the distributive property
- Write equivalent expressions with fractions, decimals, percents, and integers
- Rewrite an expression in an equivalent form in order to provide insight about how quantities are related in a problem context
- Apply properties of operations to calculate with numbers in any form
- Assess the reasonableness of answers using mental computation and estimation strategies
- Convert between numerical forms as appropriate
- Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form
- Compare an algebraic solution to an arithmetic solution by identifying the sequence of the operations used in each approach
- Interpret the solution set of an inequality in the context of the problem
- Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p , q , and r are specific rational numbers
- Identify the sequence of operations used to solve an algebraic equation of the form $px + q = r$ and $p(x + q) = r$
- Use variables and construct equations to represent quantities of the form $px + q = r$ and $p(x + q) = r$ from real-world and mathematical problems
- Graph the solution set of the inequality of the form $px + q > r$ or $px + q < r$, where p , q , and r are specific rational numbers
- Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$
- Fluently solve equations of the form $px + q = r$ and $p(x + q) = r$ with speed and accuracy

GEOMETRY

- Identify corresponding sides of scaled geometric figures
- Use ratios and proportions to create scale drawing
- Solve problems involving scale drawings of geometric figures using scale factors
- Compute lengths and areas from scale drawings using strategies such as proportions
- Reproduce a scale drawing that is proportional to a given geometric figure using a different scale
- Know which conditions create unique triangles, more than one triangle, or no triangle
- Analyze given conditions, based on the three measures of angles or sides of a triangle, to determine when there is a unique triangle, more than one triangle, or no triangle

- Construct triangles from three given angle measures to determine when there is a unique triangle, more than one triangle, or no triangle
- Construct triangles from three given side measures to determine when there is a unique triangle, more than one triangle, or no triangle
- Define “slicing” as the cross-section of a 3-D figure
- Describe the two-dimensional figures that result from slicing a three-dimensional figure such as a right rectangular prism or pyramid
- Analyze three-dimensional shapes by examining two-dimensional cross-sections
- Know the parts of a circle including radius, diameter, area, circumference, center, and chord
- Identify π (n)
- Know the formulas for area and circumference of a circle
- Justify that π (n) can be derived from the circumference and diameter of a circle
- Apply circumference or area formulas to solve mathematical and real-world problems
- Justify the formulas for area and circumference of a circle and how they relate to π (n)
- Informally derive the relationship between circumference and area of a circle
- Given the circumference of a circle, find its area
- Given the area of a circle, find its circumference
- Identify and recognize types of angles: supplementary, complementary, vertical, adjacent
- Determine complements and supplements of a given angle
- Determine unknown angle measures by writing and solving algebraic equations based on relationships between angles
- Know the formulas for area and volume and the procedure for finding surface area and when to use them in real-world and mathematical problems
- Solve real-world and mathematical problems involving area, surface area and volume of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms

RATIOS AND PROPORTIONAL RELATIONSHIPS

- Compute unit rates associated with ratios of fractions in like or different units
- Know that a proportion is a statement of equality between two ratios
- Define a constant of proportionality as a unit rate
- Recognize what (0, 0) represents on the graph of a proportional relationship
- Recognize what (1, r) on a graph represents, where r is the unit rate
- Analyze two ratios to determine if they are proportional to one another with a variety of strategies (e.g., using tables, graphs, pictures, etc.)
- Analyze tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships to identify the constant of proportionality
- Represent proportional relationships by writing equations
- Explain what the points on a graph of a proportional relationship mean in terms of a specific situation
- Recognize situations in which proportional relationships apply
- Apply proportional reasoning to solve multi-step ratio and percent problems

STATISTICS AND PROBABILITY

- Know statistics terms such as population, sample, sample size, random sampling, generalizations, valid, biased and unbiased
- Recognize sampling techniques such as convenience, random, systematic, and voluntary
- Know that generalizations about a population from a sample are valid only if the sample is representative of that population
- Apply statistics to gain information about a population from a sample of the population
- Generalize that random sampling tends to produce representative samples and support valid inferences
- Define random sample
- Identify an appropriate sample size
- Analyze and interpret data from a random sample to draw inferences about a population with an unknown characteristic of interest
- Generate multiple samples (or simulated samples) of the same size to determine the variation in estimates or predictions by comparing and contrasting the samples

- Identify measures of central tendency (mean, median, and mode) in a data distribution
- Identify measures of variation including upper quartile, lower quartile, upper extreme-maximum, lower extreme-minimum, range, interquartile range, and mean absolute deviation
- Compare two numerical data distributions on a graph by visually comparing data displays, and assessing the degree of visual overlap
- Compare the differences in the measure of central tendency in two numerical data distributions by measuring the difference between the centers and expressing it as a multiple of a measure of variability
- Find measures of central tendency (mean, median, and mode) and measures of variability (range, quartile, etc.)
- Analyze and interpret data using measures of central tendency and variability
- Draw informal comparative inferences about two populations from random samples
- Know that probability is expressed as a number between 0 and 1
- Know that a random event with a probability of $\frac{1}{2}$ is equally likely to happen
- Know that as probability moves closer to 1 it is increasingly likely to happen
- Know that as probability moves closer to 0 it is decreasingly likely to happen
- Draw conclusions to determine that a greater likelihood occurs as the number of favorable outcomes approaches the total number of outcomes
- Determine relative frequency (experimental probability) is the number of times an outcome occurs divided by the total number of times the experiment is completed
- Determine the relationship between experimental and theoretical probabilities by using the law of large numbers
- Predict the relative frequency (experimental probability) of an event based on its theoretical probability
- Recognize uniform (equally likely) probability
- Analyze a probability model and justify why it is uniform or explain the discrepancy if it is not
- Use models to determine the probability of events
- Develop a uniform probability model and use it to determine the probability of each outcome/event
- Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process
- Define and describe a compound event
- Know that the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs
- Define simulation
- Identify the outcomes in the sample space for an everyday event
- Find probabilities of compound events using organized lists, tables, tree diagrams, etc. and analyze the outcomes
- Choose the appropriate method such as organized lists, tables and tree diagrams to represent sample spaces for compound events
- Design and use a simulation to generate frequencies for compound events

THE NUMBER SYSTEM

- Describe situations in which opposite quantities combine to make 0
- Represent and explain how a number and its opposite have a sum of 0 and are additive inverses
- Identify subtraction of rational numbers as adding the additive inverse property to subtract rational numbers, $p - q = p + (-q)$
- Identify properties of addition and subtraction when adding and subtracting rational numbers
- Apply and extend previous understanding to represent addition and subtraction problems of rational numbers with a horizontal or vertical number line
- Interpret sums of rational numbers by describing real-world contexts
- Explain and justify why the sum of $p + q$ is located a distance of $|q|$ in the positive or negative direction from p on a number line
- Represent the distance between two rational numbers on a number line as the absolute value of their difference and apply this principle in real-world contexts
- Apply the principal of subtracting rational numbers in real-world contexts
- Apply properties of operations as strategies to add and subtract rational numbers
- Demonstrate and explain how adding two numbers, $p + q$, if q is positive, the sum of p and q will be $|q|$ spaces to the right of p on the number line
- Demonstrate and explain how adding two numbers, $p + q$, if q is negative, the sum of p and q will be $|q|$ spaces to the left of p on the number line

- Recognize that the process for multiplying fractions can be used to multiply rational numbers including integers
- Know and describe the rules when multiplying signed numbers
- Explain why integers can be divided except when the divisor is 0
- Describe why the quotient is always a rational number
- Know and describe the rules when dividing signed numbers, integers
- Recognize the $-(p/q) = (-p)/q = p/(-q)$
- Identify how properties of operations can be used to multiply and divide rational numbers
- Convert a rational number to a decimal using long division
- Explain that the decimal form of a rational number terminates (stops) in zeroes or repeats
- Apply the properties of operations, particularly distributive property, to multiply rational numbers
- Interpret the products of rational numbers by describing real-world contexts
- Interpret the quotient of rational numbers by describing real-world contexts
- Apply properties of operations as strategies to multiply and divide rational numbers
- Add, subtract, multiply and divide rational numbers
- Solve real-world mathematical problems by adding, subtracting, multiplying, and dividing rational numbers, including complex fractions

SOCIAL STUDIES

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)

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

GEOGRAPHY**Location:**

- Identify past & present countries in 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 States regions throughout history

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

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

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

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

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

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 policies, 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

SCIENCE

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(ren) 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 affects 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.