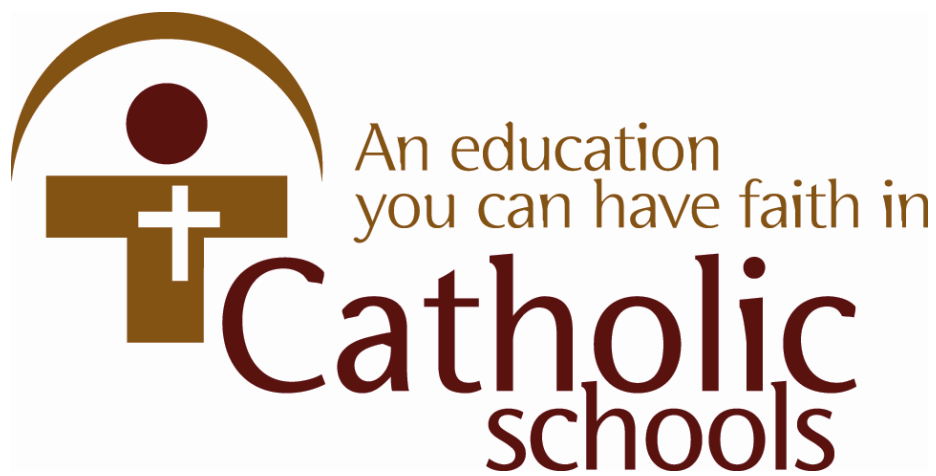


*Archdiocese of Milwaukee  
Office for Schools*



# 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-8<sup>th</sup> 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

# RELIGION

## Creedal 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
- Explains how "Catholic" means global, universal
- 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/Sacrament:

- 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
- 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)

## 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
- Knows the value and the good acts of sacrifice, penance and self denial as part of Christian discipleship
  - 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

#### 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

- 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 7<sup>th</sup> 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  $\pi$  ( $n$ )
- Know the formulas for area and circumference of a circle
- Justify that  $\pi$  ( $n$ ) 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  $\pi$  ( $n$ )
- 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 State 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 ethnic groups in the United States and the World
- Identify examples of bias and stereotyping and how they contribute to conflict
- Analyze cultural conflicts in United 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 20<sup>th</sup> and the 21<sup>st</sup> 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

## EARTH SCIENCE

### Weather:

- Explain how heat, moisture, and air movement determine weather
- Understand that the Sun's energy drives the water cycle and that the water cycle is a continuous process of recycling
- Demonstrate wind flow from high pressure areas to low pressure areas
- Analyze how temperature, pressure, and the Coriolis Effect cause wind and water currents
- Describe how global atmospheric movement influences local weather
- Examine how geographic features affect climates
- Know the composition and structure of the Earth's atmosphere
- Investigate how the greenhouse effect leads to global warming
- Explain standard safety procedures used regarding various natural disasters
- Explain how the tilt of the earth determines seasons and length of day

### Space:

- Understand how the force of gravity keeps the planets and other bodies in orbit
- State Newton's Laws of Gravitation
- Explain orbital motion of objects in the solar system
- Understand that stars give off light and produce energy by nuclear fusion
- Realize that light years and astronomical units are used to measure distance in space
- Understand how humans use technology to explore space
- Know what characteristics of a planet support life
- Know that billions of galaxies exist in the universe

### Earth's Structure/Composition:

- Know the components of soil and other factors that influence soil texture, fertility, and resistance to erosion
- Communicate that the Earth is comprised of layers including a core, mantle, lithosphere, hydrosphere, and atmosphere
- Identify the characteristics of sedimentary, igneous, and metamorphic rocks and know the formation process
- Know the interrelationship involved in the process of the rock cycle
- Know 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

### Changes in the Earth:

- Know that successive layers of sedimentary rock are affected by folding, breaking, and uplifting of layers
- Know that land forms are created through constructive and destructive forces
- Know that the Earth's crust is divided into plates that move in response to mantle movement

## PHYSICAL SCIENCE

### Sound and Light:

- Demonstrate that light travels in straight lines unless reflected or refracted
- Identify visible light as one component of the electromagnetic spectrum
- Demonstrate that light interacts with matter by transmission, absorption, or reflection
- Demonstrate that light can be reflected with mirrors or refracted with lenses
- Explain how the Sun is the major source of energy for the Earth
- Demonstrate that light is essential for vision
- Demonstrate how things that absorb light often transmit heat
- Identify and explain that photosynthesis is the process of using light to make food
- Observe and demonstrate that sound is affected by the matter through which it travels
- Describe how sound travels in waves
- Explain that sound waves have wave length, frequency, and amplitude



- Demonstrate how the ear is a receptor for sound

#### **Matter:**

- Know the major ideas of atomic theory and molecular theory
- Know the history and development of the present atomic model
- Model how all matter is composed of atoms, consisting of protons, neutrons, and electrons
- Describe physical and chemical interactions among substances
- Develop an understanding of the physical and chemical properties of matter
- Realize that particles of matter are in constant motion, and when heated, the motion of the molecules increases and they move farther apart
- Understand the flow of electrons in bonding
- Understand how each element is represented on the Periodic Table
- Know the organization of the Periodic Table
- Know the materials that contain equal numbers of positive and negative charges are electrically neutral
- Realize that any change in the balance of charges produces an electric force proportional to the charge
- Know that electromagnetic forces exist with and between atoms

#### **Forces, Motion, and Energy:**

- Investigate the motion of objects and explain motion in terms of speed, velocity, acceleration, momentum, and Newton's Laws of Motion and their application to real-life situations
- Identify the Law of Conservation of Energy
- Explain how gravitational force is applied
- Explain that nuclear forces are stronger than electromagnetic forces, which are stronger than gravitational forces
- Demonstrate how machines can be used to do work more efficiently
- Investigate how work can be measured
- Identify how devices have been designed to convert energy from one form to another
- Give a basic explanation of the gas laws, Archimedes Principle, and Bernoulli's Principle and recognize their real-life applications
- Describe and investigate the properties of light, heat, gravity, magnetic fields, electrical fields and sound waves and their interactions with common objects
- Infer that as energy transformations occur, some energy escapes as heat, sound, or light
- Be aware of decisions about the future of energy resources

#### **Electricity and Magnetism:**

- Explain that electric currents can produce magnetic forces and magnets can produce electric currents
- Explain the relationship between magnetic forces and electric forces
- Identify the role of electromagnetic forces in electric motors, generators, radio, television, and other technologies
- Observe that different materials act as insulators and conductors of electrical current

#### **LIFE SCIENCE**

##### **Animals:**

- Classifications
  - Identify different taxonomic groups of the Animal Kingdom
- Cycles
  - Know that sexual reproduction results in the continuation of the species
  - Describe the basic life processes that all animals carry out.
- Characteristics
  - *Know that animals have a variety of body structures with specific functions for survival*

##### **Plants:**

- Characteristics
  - Describe the chemical process of photosynthesis
- Life Cycles

- Discover that plants carry on basic life processes
- Understand that sexual and asexual reproduction are necessary for the continuation to the species
- Classification
  - Compare and contrast monocots and dicots
  - Identify various plant tissues and explain their function
  - Describe how plants are producers
- Adaptations
  - Know that plants have a variety of body structures with specific functions for survival
  - Explain plant responses to environmental stimuli

**Environment:**

- Habitats
  - Understand that through the process of succession, communities change over time
  - Describe the eight biomes in terms of their distinct biotic and abiotic characteristics
- Adaptations
  - Recognize how things evolve
  - Know the process of natural selection
  - Know the history of the Theory of Evolution

**Human Body:**

- Explain that a human being has interactive systems
- Know that humans carry on basic life processes
- Describe how disease is caused by internal and external factors
- Understand homeostasis
- Describe the stages of development of a growing embryo and fetus

**Cells, Heredity and Classification:**

- Realize that both heredity and the environment contribute to the development of living things
- Know that organisms are classified based on similarities that reflect their evolutionary relationships
- Identify the levels of organization in living things: cells, tissues, organs, systems, and organisms
- Know the structure and function of the different parts of a cell
- Describe how chromosomes are contained in both egg and sperm and carry instructions for the new individual
- Model how an inherited trait is determined by one or more genes using a Punnet Square
- Know the chemical and structural properties of DNA and its role in specifying the characteristics of an organism within an organism

