Lake Villa Community Consolidated School District #41

7th Grade Learner Objectives

The mission of Lake Villa School District #41 is to instill in all students the knowledge and skills necessary to thrive as lifelong learners; confident, cooperative and responsible citizens; and prepared to meet the challenges of the future.
The following learner objectives are aligned with the Illinois State Learning Standards:

LANGUAGE ARTS

Read with Understanding and Fluency

- Use prefixes, suffixes, and root words to understand word meanings
- Identify and interpret idioms, similes, analogies, and metaphors to express implied meanings
- Identify the effect of literary devices (e.g., figurative language, description, and dialogue) in text
- Use skimming to preview reading materials and scanning to detect major visual patterns and identify text structure before reading
- Make connections to real world situations or related topics before and during reading
- Define and analyze information needed to carry out a procedure
- Demonstrate understanding of structure through the use of graphic organizers and outlining (e.g., mapping, time lines, Venn diagrams)
- Infer and draw conclusions about text supported by textural evidence and experience
- Analyze how structure contributes to the understanding of text
- Read aloud fluently (with expression, accuracy, and appropriate speed)
- Apply self-monitoring techniques and adjust rate to increase comprehension
- Select and read books for recreation

Read with Understanding and Fluency Continued:

- Use inferences to improve and/or expand knowledge obtained from text and ask open-ended questions to improve critical thinking skills
- Synthesize key points and supporting details to form conclusion and to apply text information to personal experience
- Identify story elements, major and secondary themes in text
- Explain how story elements and themes contribute to the reader's understanding of text
- Compare themes, topic, and story elements of various selections across content areas
- Select reading strategies for text appropriate to the reader's purpose
- Recognize similarities and differences when presented with varying styles or points of view
- Recognize the influence of media on a reader's point of view concerning the interpretation of fiction or non-fiction materials
- Use text information to interpret tables, maps, visual aids, or charts
- Apply appropriate reading strategies to fiction and non-fiction texts within and across content areas

Read and Understand Literature Representative of Various Societies, Eras and Ideas

- Read a wide range of fiction/ nonfiction
- Analyze and evaluate literacy elements (e.g., character, plot, setting, theme, conflict) to determine their importance to the story
- Use literature terminology accurately (e.g., flashback, foreshadowing, metaphor, simile, personification, onomatopoeia, alliteration)
- Identify examples of connections among an author, the cultural and historical context, and the work
- Use new vocabulary from literature in other contexts
- Identify, analyze, and compare techniques used by authors to elicit reader response
- Compare characteristics and elements of various literary genre (e.g., short stories, novels, dramas, poetry, biographies)
- Make inferences regarding the motives of characters and consequences of their actions by citing the text
- Respond to fiction using interpretive and evaluative processes
- Make connections from text to text, text to self, and text to world
- Interpret nonfiction text and informational materials.
- Sequence information needed to carry out a procedure.
- Distinguish between significant and minor details.
- Engage in literary discussions (e.g., conflict, resolutions, relevance, background, effectiveness, realism.)

Listening and Speaking

- Demonstrate ways that listening attentively can improve comprehension
- Restate and carry out multi-step instructions
- Deliver oral presentations with a purpose, audience, and supporting details using multimedia.
- Separate main ideas from supporting facts and details
- Formulate questions needed to gather and clarify information
- Contribute relevant and idea-inspiring comments during discussion
- Paraphrase and summarize, in both oral and written form, information in formal and informational presentations
- Restate a set of instructions in the order given and complete the task
- Align vocabulary and style to the intent of the message
- Use language that is clear, audible, and appropriate
- Use appropriate grammar, word choice and pacing
- Use notes and outlines
- Contribute meaningfully to group discussions by following accepted guidelines of verbal interaction
- Identify and use discussion techniques to arrive at a consensus of opinion

Writing

- Edit one's writing for appropriate "SUMS"
- Use appropriate types of writing for the purpose and audience, following the writing process
- Use the elements of effective writing (F, S, O, I, C).
- Use appropriate syntax (simple, compound and complex sentences), usage (subject-verb agreement, pronouns, and adjective/adverb), mechanics (capitalization, punctuation), and spelling correctly
- Compose expository writing that supports a thesis statement with evidence
- Write an expanded narrative that creates a purpose and develops a focused impression
- Develop a multi-paragraph piece of persuasive writing that presents one position on an issue with sufficient support
- Write creatively for a specified purpose and audience
- Write an engaging introduction to set the purpose and a conclusion to unify the writing
- Demonstrate ability to connect reactions to the event as well as stay on topic throughout
- Evenly develop the events/reactions using multiple strategies of support including detailed descriptions, dialogue, various perspectives/reactions
- Use word choice which enhances specificity
- Maintain a consistent voice throughout
- Create a clear structure from beginning to end through the use of effective devices such as transitions, varied sentence structure, and interwoven events with reactions
- Use appropriate paragraphing for all major points
- Fully develop the events/reactions for the grade level, maintaining focus, using balanced elaboration, and sequencing events coherently and cohesively
- Use technology to produce and present compositions and multimedia works

Researching and Presenting

- Locate, organize and use information
- Analyze and evaluate information acquired from various sources
- Formulate questions to direct research
- Choose a variety of resources to gain new information
- Evaluate and select primary and secondary sources
- Develop a bibliography using a simply, acceptable form
- Cite the source of direct quotations, paraphrased, and summarized information
- Communicate and format information that was gathered by either inquiry or research
- Evaluate and select text, graphic materials, or visual aids to present information

MATH

- Represent place values from units through billions using powers of ten
- Represent, order, compare, and graph integers
- Compare and order fractions and decimals efficiently and find their approximate position on a number line
- Represent repeated factors using exponents
- Represent any large number using scientific notation
- Show relationships between sets of numbers, including rational numbers, whole numbers, natural numbers, and integers
- Recognize and use exponential, scientific, and calculator notation
- Represent, order, and compare rational numbers using a variety of methods and materials
- Place rational numbers on a number line
- Write prime factorizations of numbers
- Determine the least common multiple and the greatest common factor of a set of numbers
- Simplify simple arithmetic expressions with rational numbers using the field properties and the order of operations
- Recognize and use the inverse relationships of addition and subtraction, multiplication and division to simplify computations and solve problems
- Solve multiplication number sentences and word problems with whole numbers and familiar fractions
- Write prime factorizations using exponent
- Describe relationships between prime factorizations and properties of squares, primes, and composites
- Classify numbers according to the number of whole number factors (e.g., square numbers have an odd number of factors)
- Demonstrate and describe the effects of multiplying or dividing by a fraction less than or greater than one
- Simplify arithmetic expressions containing exponents using the field properties and the order of operations
- Justify rules of divisibility for 2, 5, and 10
- Solve multi-step number sentences and word problems with rational numbers using the four basic operations
- Determine the least common multiple and greatest common factor of a set of numbers using prime factorization containing exponents
- Determine and describe the effects of arithmetic operations with decimals and integers (e.g., multiply by a decimal between zero and one, divide by a negative integer)
- Simplify arithmetic expressions containing integers using the field properties and order of operations

Math Continued:

- Justify divisibility rules for 3, 4, 6, 8, and 9
- Select and use appropriate operations, methods, and tools to compute or estimate using whole numbers with natural number exponents
- Analyze algorithms for computing with whole numbers, familiar fractions, and decimals and develop fluency in their use
- Select, use, and justify appropriate operations, methods, and tools to compute or estimate with integers and familiar rational numbers
- Develop, use, and explain strategies to compute exact answers mentally with integers and simple rational numbers using a variety of techniques (e.g., estimate and compensate, halve and double, compatible numbers, decomposition and recomposition using the distributive property)
- Analyze algorithms for computing with rational numbers and develop fluency in their use
- Solve number sentences and word problems using percents
- Demonstrate and explain the meaning of percents, including greater than 100 and less than 1
- Create and explain a pattern that shows a constant ratio
- Analyze situations to determine whether ratios are appropriate to solve problems
- Determine equivalent ratios
- Work flexibly with fractions, decimals, and percents to solve number sentences and word problems (e.g., 50% of 10 is the same as 1/2 of 10 is the same as 0.5 x 10)
- Create and explain ratios and proportions that represent quantitative relationships
- Create and explain a variety of equivalent ratios to represent a given situation
- Develop, use, analyze, and explain methods for solving numeric or word problems involving proportions
- Develop, use, analyze, and explain methods for solving number sentences or word problems involving proportions with rational numbers
- Solve problems that involve percents, including percent increase and decrease, regardless of the piece of information that is missing
- Set up and solve proportions for direct and inverse variation of simple quantities
- Convert U.S. customary and metric measurements into larger or smaller units
- Investigate the history of the U.S. customary and metric systems of measurement
- Measure, with a greater degree of accuracy, any angle using a protractor or angle ruler

Math Continued:

- Select and justify the choice of either U.S. customary or metric systems of measurement according to the situation (e.g., measure fabric in yards, measure dry chemicals in grams)
- Make simple measurements to determine indirect measures (e.g., determining the height of a flagpole using its shadow and similar right triangles)
- Solve simple scale conversions, contractions, and dilations (e.g., maps and diagrams)
- Estimate distance, weight, temperature, and elapsed time using reasonable units and with acceptable levels of accuracy
- Estimate angle measure, area, and volume using reasonable units and with acceptable levels of accuracy
- Determine and describe acceptable levels of accuracy in estimation situations
- Measure any quantity to the greatest degree of accuracy determined by the tool
- Select and justify an appropriate formula to find the area of triangles, parallelograms, and trapezoids
- Develop and use the formula for determining the volume of a rectangular and triangular prism
- Select and use appropriate units and tools to measure volume, surface area, and mass/weight accurately for a given situation
- Select an appropriate formula to determine the circumference and the area of circles
- Select and explain an appropriate formula or strategy to find the surface area and volume of rectangular and triangular pyramids, cylinders and cones
- Solve simple problems involving rate, time, and distance
- Solve problems involving mixed units of the same attribute, including time, money, length, and area
- Develop and discuss strategies to find the area of combined shapes
- Investigate, extend, and describe arithmetic and geometric sequences of numbers whether presented in numeric or pictorial form
- Evaluate algebraic expressions for given values
- Express properties of numbers and operations using variables (e.g., the commutative property is m = n = n = m)
- Simplify algebraic expressions involving like terms
- Investigate, describe, and generalize a variety of patterns using variable or recursive techniques
- Represent situations using variables
- Recognize and generate equivalent forms of simple algebraic expressions

Math Continued:

- Investigate and write algebraic expressions to describe the *nth* term of a simple linear, power, or exponential sequence
- Determine a specific term of a pattern of numbers or drawings
- Create arithmetic and geometric sequences to fit a given set of conditions
- Recognize and generate equivalent forms for linear equations, including transforming linear equations into standard and slope-intercept form
- Graph simple inequalities on a number line
- Create a table of values that satisfy a simple linear equation and plot the points on the Cartesian plane
- Describe verbally, symbolically, and graphically, a simple relationship presented by a set of ordered pairs of numbers
- Graph linear equations and inequalities on the Cartesian plane
- Describe the relationships between symbolic expressions and graphs of lines using the appropriate vocabulary for the intercepts and slope of the line
- Determine the slope of a line from a graph
- Identify and explain incorrect uses of the commutative, associative, and distributive properties
- Identify and provide examples of the identity property of addition and multiplication
- Identify and provide examples of inverse operations
- Explain why division by zero is undefined
- Solve arithmetic and linear equations using the properties of equality and inequality
- Identify and provide examples or counter examples as appropriate for the reflexive, symmetric and transitive properties of inequality
- Solve arithmetic and simple algebraic equations using properties of real numbers, equality and inequality, and justify the procedures
- Solve simple algebraic equations for a given variable using inverse operations
- Create, model, and solve algebraic equations using concrete materials
- Solve linear equations, including direct variation, with whole number coefficients and solutions using algebraic or graphical representations
- Solve simple linear equations, including direct variation, with integral coefficients using algebraic or graphical representations
- Solve algebraic equations or word problems that involve linear equations or inequalities using algebraic or graphical representations

Math Continued:

- Plot and read ordered pairs of numbers in all four quadrants
- Describe sizes, positions, and orientations of shapes under transformations, including dilations
- Determine and describe the relationship between pi, the diameter, the radius, and the circumference of a circle
- Determine unknown angle measures using angle relationships and properties of a triangle or a quadrilateral
- Draw geometric shapes with specified properties, such as side lengths or angle measures
- Determine the relationships between the number of vertices or sides in a polygon, the number of diagonals, and the sum of its angles
- Solve problems that involve vertical, complementary, and supplementary angles
- Create a three-dimensional object from any two-dimensional representation of the object, including multiple views, nets, or technological representations
- Make, test, and justify conjectures about various quadrilateral and triangle relationships, including the triangle inequality
- Create and critique arguments concerning geometric ideas and relationships, such as congruence, similarity, the Pythagorean relationship, or formulas for surface areas or volume of simple three-dimensional objects
- Justify the simple construction methods used to produce angle bisectors, perpendicular lines, and equilateral triangles
- Represent, solve, and explain numerical and algebraic relationships using geometric concepts
- Provide examples or counter-examples to either illustrate or disprove conjectures about geometric characteristics
- Analyze the relationship between sides of right triangles using the Pythagorean theorem
- Solve problems that involve the use of proportions and the Pythagorean theorem in similar right triangles with whole number side lengths
- Recognize Pythagorean Triples
- Identify the basic trigonometric ratios in terms of lengths of the sides of a right triangle and an acute angle
- Solve for missing side lengths using the trigonometric ratios in right triangles
- Determine and justify the side length relationships present in 45^{o}-45^{o}-90^{o} triangles and 30^{o}-60^{o}-90^{o} triangles
- Determine the ratio of lengths of sides of a right triangle with given measures for its acute angles using appropriate technologies

Math Continued:

- Construct, read, interpret, infer, predict, draw conclusions, and evaluate data from various displays, including circle graphs
- Recognize and explain misleading displays of data due to inappropriate intervals on a scale
- Construct, read, interpret, infer, predict, draw conclusions, and evaluate data from various displays, including box and whiskers plots
- Construct an equivalent data representation given data in a different form
- Recognize potential bias in data collection methods or data presentation
- Construct, read, interpret, infer, predict, draw conclusions, and evaluate data from various displays, including histograms and scatter plots
- Determine the best measure of central tendency from mean, median, or mode
- Discuss how data can be manipulated to represent different points of view based on the use of different measures of central tendency and based on different graphical displays
- Discuss biased reporting of data and questions that should be asked when data is viewed
- Analyze graphical displays of data for possible misleading characteristics
- Gather data by conducting simple simulations
- Select and use appropriate data gathering techniques
- Formulate new questions using conjectures, and plan new studies to answer them
- Formulate a question, design a study to answer the question, and collect data
- Analyze potential methods of collecting information and decide which methods would produce the most reliable and accurate data
- Analyze instruments used for surveys for errors and bias
- Analyze potential experiments or simulations for errors and bias
- Record probabilities as fractions, decimals, or percents
- Demonstrate that the sum of all probabilities equals one
- Determine empirical probabilities from a set of data provided
- Set up a simulation to model the probability of a single event
- Determine theoretical probabilities of simple events
- Discuss odds versus probability
- Describe and explain complementary and mutually exclusive events using appropriate terminology

Math Continued:

- Design and conduct experiments or simulations for probability, including the possible use of technology to simulate events
- Discuss the difference in empirical and theoretical probability
- Compute probabilities for simple compound events using a variety of methods, including area models
- Identify situations where dependent and independent events occur

SCIENCE

Inquiry

- Formulate hypotheses that can be tested by collecting data
- Conduct scientific experiments that control all but one variable
- Collect and record data using consistent measuring and recording techniques and media
- Explain the existence of unexpected results in a data sheet
- Interpret and represent results of analysis to produce findings
- Report and display the results of scientific investigation

Technical Design:

- Identify design problem and establish criteria for determining success of a solution. Sketch, propose and compare design solutions. Select the most appropriate solution, and build a prototype
- Test prototype
- Evaluate results
- Revise prototype

Life/Health: Cells, Heredity and Classification

- Cells—Structure and function
- Mitosis
- Meiosis
- DNA, genetics review classification
- Reproduction (sexual and asexual)

Environmental Science

- Environmental problems and solutions
- Energy resources (natural resources, fossil fuels, alternative resources)

Physical: Introduction to Matter

- Measurement
- Physical and chemical properties
- Changes of state
- Atomic structure
- Introduction to the periodic table
- Acids and bases

Forces, Motion and Energy

- Force
- Friction
- Gravity
- Newton's Laws

Earth: Weather

- Atmosphere
- Heat
- Wind (Air pressure)
- Instruments
- Water in air
- Severe weather
- Forecasting

SOCIAL SCIENCE

Government

- Define the concept of "consent of the governed"
- Summarize the main points in constitutional documents (e.g. Declaration of Independence, Northwest Ordinance, Preamble of the United States Constitution)
- Distinguish between the characteristics of a limited and unlimited government
- Explain the importance of having a written constitution for a government
- Compare and contrast responsibilities shared between the state and federal governments
- Identify the rights and principles of limited government found within the Declaration of Independence
- Evaluate the rights and responsibilities of the individual within their family, social groups, community, or nation
- Give examples of events where people have had to fight to win their equality

Government Continued:

- Illustrate conflicts over the rights and freedom of competing individuals or groups (e.g. a novel about two families from the north and south during the Civil War)
- Explain the distributed and shared powers of the local, state, and federal government
- Explain the reasons for having the systems of checks and balances as part of the organization of the federal government
- Describe the impact of the federal government's system of checks and balances (e.g. the results of a presidential veto)
- Evaluate the benefits of highly involved citizens to society
- Interpret political cartoons in terms of captions and images to persuade people to accept political positions on various issues
- Describe the organization of the Illinois General Assembly
- Illustrate the organization of the three branches of government for the state of Illinois
- Compare the similarities and differences in the state of Illinois and the national government's attempts to protect individual rights and still promote the common good
- Compare the similarities and differences in the power of the Governor of the State of Illinois and the President of the United States to resolve conflicts and crises

Economics

- Define the law of supply & demand
- Explain that consumer demand determines what producers will produce in a market economy
- Identify times when students or adults are consumers and when students or adults are producers
- Identify the goods and services businesses sell to households and the payments received for those goods and services
- Explain why countries benefit when they exchange goods and services
- Explain the benefits to consumers of competition among sellers
- Explain that competition takes place when there are many buyers and sellers of similar products
- Explain how technological changes have led to new and improved products
- Explain how specialization usually increases productivity in an economy
- Evaluate how an individual's ideas, inventions, or entrepreneurship (e.g. Thomas Edison, George Washington Carver, Henry Ford) affected the economy then and now
- Compare/contrast the economic systems and institutions of an agricultural and an industrial society

Geography

- Describe how humans have adapted to environmental changes caused by natural processes
- Describe instances of how places can be changed or destroyed as a result of natural processes
- Understand how parallels of latitude can be used to determine north-south direction and distance and how meridians of longitude can be used to determine east-west direction and distance on a map or globe
- Identify, using only a mental map, the countries through which a person would pass as they travel along a straight-line route between two major cities (e.g. Paris to Moscow, Cairo to Nairobi)
- Demonstrate understanding of the location of various physical and human features in Illinois, the United States, and the world by sketching a map from memory of different features
- Construct a chloroplast map that show the spatial distribution of the data (e.g. corn production in Illinois)
- Predict the effects of an extreme weather phenomenon on the physical environment (e.g. a hurricanes impact on a coastal ecosystem)
- Explain how and why ecosystems differ from place to place as a consequence of differences in soils, climates, and human and natural disturbances
- Analyze the causes and effects of changes in landforms, climate, natural vegetation, and resources of their local community, state of Illinois, nation, and the world
- Identify human induced changes in landforms, climate, natural vegetation, and resources of their local community, state of Illinois, nation and the world
- Analyze rapidly growing urban centers to determine the impact of urban sprawl on the physical and human environment

History

- Locate on the World Wide Web multiple sources pertaining to a significant historic person or event
- Compare the value of primary and secondary sources
- Interpret the actions and consequences of a significant figure in United States political history (e.g. Thomas Jefferson, Abraham Lincoln, Woodrow Wilson, Franklin D. Roosevelt)
- Summarize ideas that influence the development of representative democracy as reflected in the Declaration of Independence and the Constitution of the United States
- Describe significant events that fostered the development of representative democracy after the adoption of the United States Constitution, (e.g. amendments, supreme court rulings, legislation)
- Describe the impact of slavery upon various societies
- Describe family life of select groups of people during the colonial/frontier periods and the 19th Century
- Analyze the changing roles and status of men, women, and children from the colonial period through the 19th Century

Global Perspectives

- Analyze the political cause and effect relationships created by European exploration and expansion in the eastern and western hemispheres
- Identify the contributions of significant individuals to worldwide political thought (e.g. Locke, Burke, Marx) after 1500
- Explain how diverse groups have enriched United States Culture
- Describe how the competition between or among different groups of people for the same land affected the environment
- Compare/contrast two or more cultures in terms of expressions of those cultures
- Describe what is studied within the field of anthropology
- Identify various cultures that have combined to create a large, multicultural American society
- Define the concept of the global community
- Evaluate the role of the humanities (e.g. literature, art, music, architecture) in a culture
- Predict how technology/media will impact culture during the student's lifetime
- Draw conclusions about how the media creates and/or reinforces societal norms