



LEVEL SEVEN

Discovery Charter School - Teachers, Students, Families, and Community in a Learning Partnership

Family Guide To Total Learning Objectives: Creating Knowledge Through Questions, Projects, Experiences and Problem Solving

WELCOME TO LITERACY

*“Open up the treasure chest
To see what you will find
Answers for your questions
And a fortune for your mind”*

METHODOLOGY

All instruction at the Discovery Charter School focuses on total learning. We feature a blended teaching method that engages students in acquiring knowledge and skills through an extended inquiry and experience based process. Learning is structured around authentic questions, carefully designed projects and targeted learning experiences. Teachers, students and families are fully involved in planning and implementing learning experiences and projects. Our instruction blends the processes of thinking, developing skills and gaining knowledge allowing students to “understand”, “know” and “do”. We support students in learning and practicing skills in problem solving, communication, and self-management. We integrate curriculum areas, thematic instruction, and community issues. Assessment of performance is on content and skills using criteria similar to those in the work world, thus encouraging accountability, goal setting, and improved performance. We focus on meeting the needs of learners with varying skill levels and learning styles and we target individual interests to engage and motivate bored or indifferent students. We highlight the Learning Team Concept focusing on the synergistic power of teachers, students and families working together. We develop Individualized Learning Plans closely aligned with curriculum guidelines, benchmarks, and standards.

LOVE OF LEARNING

- _____ understands that each human brain is a powerful learning tool
- _____ understands that their brain is growing and adding new brain cells each day
- _____ believes in their ability to learn and expresses excitement about learning
- _____ applies the process of asking questions and sharing previous gained information
- _____ understands that projects and hands on experiences are exciting learning procedures
- _____ responds to questions posed by family, teachers, peers and other adults
- _____ generates new questions, new problems, new experiences and new projects
- _____ identifies areas of interest and curiosity to assist in selecting learning projects.
- _____ organizes, records, and shares information using objects, pictures, demonstrations, technology and verbal responses

- _____ values personal knowledge skills in light of rapid growth of information base due to technology
- _____ understands that their brain is constantly growing and collecting information from all activities and experiences
- _____ understands that there are many ways to learn and that different people learn in different ways
- _____ identifies personal learning styles, strengths, and preferences
- _____ emphasizes expansion of personal learning styles and strengths

PROBLEM SOLVING

- _____ strengthens understandings by reviewing and expanding previous knowledge through research and discussions
- _____ understands that asking questions, designing projects, and planning experiences are valuable learning tools.
- _____ applies previous experience and knowledge to problem solving experiences
- _____ explains and verifies results of problem solving experiences through project presentations
- _____ continues to apply a variety of strategies when the first strategy proves to be unproductive
- _____ identifies a variety of resources and experiences to support the learning and problem solving experiences
- _____ develops confidence in the use of technology to assist in solving problems and supporting project presentations
- _____ reviews problem solutions, and uses questions to identify new problems and experiences
- _____ takes pride in problem solutions and transfers knowledge gained to improve the world around them
- _____ develops a wide variety of project presentation tools combining personal learning styles, technology, and experiences to reinforce knowledge gained

ENGLISH

Level Seven English focuses on expanding students' reading, writing, speaking, listening, and research skills. A major emphasis of this course is the expanded development of project presentation skills and targeting project selection. It strengthens critical thinking, study skills and presentation techniques. Grammar, usage, and mechanics are taught as necessary elements of the writing and presentation process. Literature is used to stimulate discussion to model good writing and to provide background and incentive in project subject selection.

WORD ANALYSIS

- _____ identify words with strong connotations
- _____ distinguish between words with closely related meanings
- _____ apply vocabulary learned in all content areas
- _____ read fluently

READING STRATEGIES

- _____ select and use strategies before, during and after reading a text
- _____ develop and understand the purpose of a text to differentiate between main ideas and supporting details
- _____ summarize information from several sources
- _____ evaluate the effectiveness of reading strategies

LITERARY TEXT

- _____ describe, make inferences, and draw conclusions about plot development in text
- _____ make inferences and draw conclusions to explain an author's use of flashback in text
- _____ analyze an author's use of foreshadowing
- _____ make inferences and draw conclusions to explain the relationship between/among main and supporting characters based on text
- _____ describe the author's development of character(s) based on text
- _____ explain a theme based on events, dialogue, and/or characters' actions in text
- _____ describe, make inferences, and draw conclusions about the author's point of view
- _____ make inferences and draw conclusion about the meaning, effect, or use of metaphors and imagery
- _____ identify symbolism, slang, and dialect in text
- _____ identify the tone and/or mood of text
- _____ interpret the meaning of an analogy in text
- _____ make inferences and draw conclusions about how specific words and phrases reveal tone and mood are created of text identify dramatic irony in text
- _____ make inferences about an author's culture and historical viewpoints
- _____ make connections to self, other texts, and/or the words

EXPOSITORY TEXT

- _____ identify and interpret symbolism in text
- _____ explain the meaning of an analogy in text
- _____ make inferences and draw conclusions to identify words and phrases that reveal tone or mood of text
- _____ explain persuasive techniques in text with a focus on bandwagon, testimonial, glittering generalities, snob appeal, and statistics/data
- _____ make inferences and draw conclusions to determine important information, main idea, and supporting details with a focus on electronic text, autobiographies, biographies, letters, and history related articles
- _____ determine organizational structure in text with a focus on cause and effect, compare and contrast, fact and opinion, and order of importance
- _____ make inferences and draw conclusions to identify an author's viewpoint, argument, or perspective, and supporting evidence
- _____ identify opinions that are disguised as facts in text make inferences about an author's cultural and historical viewpoints
- _____ make connections to self, other text, and/or the world
- _____ summarize information

EFFECTIVE WRITING

- _____ use prewriting strategies to plan written work, choose and narrow a topic, and organize ideas
- _____ draft multi-paragraph papers with introductions, supporting details, transitions, and conclusions that address audience and purpose
- _____ revise drafts for audience, purpose, focused ideas, organization, relevant details, voice, and word choice
- _____ combine sentences to improve sentence fluency
- _____ edit for correct grammar, mechanics, and word usage in writing
- _____ prepare an original draft appropriate to audience and purpose

TYPES OF WRITING

- _____ write expository text using patterns of organization appropriate to audience and purpose with a focus on question and answer, and cause and effect
- _____ write narrative/descriptive essays appropriate to audience and purpose that include order of importance
- _____ write literary analyses
- _____ summarize literary and expository information
- _____ write responses that demonstrate an understanding of expository text supported by evidence
- _____ write persuasive text that includes a cause/effect structure appropriate to audience and purpose
- _____ complete applications appropriate to audience and purpose

MATHEMATICS

The Level Seven course builds on the concepts of number operations with integers, decimals, and rational numbers, problem solving and reasoning skills, data analysis, probability, geometry, measurement, spatial relationships, patterns, and algebraic concepts. The use of manipulatives, mathematical tools, and technology, including calculators and computer software, are an integral part of this course. Level Seven students plan and implement experienced based projects and community experiences involving the application of number skills. They use the resource of numbers to strengthen their project presentations and to contribute to the solution of problems in the community. They organize their mathematical information to support their presentations.

NUMBERS, NUMBER SENSE AND COMPUTATION

- _____ translate among fractions, decimals, and percents including fractional percents
- _____ compare and order a combination of rational numbers, including fractions, decimals, percents, and integers in mathematical and practical situations
- _____ select and round to the appropriate significant digit
- _____ calculate with integers and other rational numbers to solve mathematical and practical situations
- _____ identify and apply the distributive, commutative, and associative properties of rational numbers to solve problems

PATTERNS, FUNCTIONS AND ALGEBRA

- _____ use and create tables, charts, and graphs to extend a pattern in order to describe a linear rule, including integer values
- _____ evaluate formulas and algebraic expressions for given integer values
- _____ solve and graphically represent equations and inequalities in one variable with integer solutions
- _____ generate and graph a set of ordered pairs to represent a linear equation
- _____ identify linear equations and inequalities
- _____ model and solve equations using concrete and visual representations

MEASUREMENT

- _____ estimate and compare corresponding units of measure for area and volume/capacity between customary and metric systems
- _____ select, model, and apply formulas to find the volume and surface area of solid figures
- _____ calculate simple interest in monetary problems
- _____ write and apply proportions to solve mathematical and practical problems involving measurement and monetary conversions

SPATIAL RELATIONSHIPS, GEOMETRY AND LOGIC

- _____ identify, classify, compare, and draw regular and irregular polygons
- _____ find and verify the sum of the measure of interior angles of triangles and quadrilaterals
- _____ demonstrate translation, reflection, and rotation using coordinate geometry and models
- _____ describe the location of the original figure and its transformation on a coordinate plane
- _____ determine slope of a line, midpoint of a segment, and the horizontal and vertical distance between two points using coordinate geometry
- _____ describe the geometric relationships of parallel lines, perpendicular lines, triangles, quadrilaterals and bisectors
- _____ model the Pythagorean theorem and solve for the hypotenuse
- _____ make scale drawings using ratios and proportions

DATA ANALYSIS

- _____ formulate questions that guide the collection of data
- _____ organize, display, and read data using the appropriate graphical representations (with and without technology)
- _____ interpret graphical representations of data to describe patterns, trends, and data distribution
- _____ find the number of permutations possible for an event in mathematical and practical situations
- _____ find the theoretical probability of an event using different counting methods including sample spaces and compare that probability with experimental results
- _____ represent the probability of an event as a number between 0 and 1
- _____ interpolate and extrapolate from data to make predications for a given set of data

PROBLEM SOLVING

- _____ generalize solutions and apply previous knowledge to new problem solving situations
- _____ determine an efficient strategy, verify, interpret, and evaluate the results with respect to the original problem
- _____ apply problem solving strategies until a solution is found or it is clear that no solution exists
- _____ interpret and solve a variety of mathematical problems by paraphrasing
- _____ check the reasonableness of a solution

MATHEMATICAL COMMUNICATION

- _____ use formulas, algorithms, inquiry, and other techniques to solve mathematical problems
- _____ evaluate written and oral presentations in mathematics
- _____ identify and translate key words and phrases that imply mathematical operations
- _____ model and explain mathematical relationships using oral, written, graphic, and algebraic methods

MATHEMATICAL REASONING

- _____ recognize and apply deductive and inductive reasoning
- _____ review and refine the assumptions and steps used to derive conclusions in mathematical arguments
- _____ justify answers and the steps taken to solve problems with and without manipulatives and physical models

MATHEMATICAL CONNECTIONS

- _____ use mathematical ideas from one area of mathematics to explain an idea from another area of mathematics
- _____ use manipulatives and physical models to explain the relationships between concepts and procedures
- _____ use the connections among mathematical topics to develop multiple approaches to problems
- _____ apply mathematical thinking and modeling to solve problems that arise in other disciplines, such as rhythm in music and motion in science

SCIENCE

Level Seven Science is a year-long course focusing on understanding Earth and space science systems. Students will use scientific processes, protocols, and tools, including inquiry, to build understanding of Earth's structure and place in the Solar System, atmospheric processes, and composition of matter. Critical thinking, collaboration, accuracy, and communication skills will be practiced as students extend their scientific literacy. Students plan and implement projects, experiences, problem solving and community involvement activities to bring the world around them into their lives. Students share their ideas, discoveries, and problem solutions with their community.

NATURE OF SCIENCE

- _____ identify and critically evaluate information in data, tables, and graphs
- _____ critically evaluate information to distinguish between fact and opinion
- _____ recognize that different explanations can be given for the same evidence
- _____ explain that scientific inquiry includes evaluating results of scientific investigations, experiments, observations, theoretical and mathematical models, and explanations proposed by other scientists
- _____ use multiple methods for organizing items and information
- _____ describe advantages and disadvantages of using technology
- _____ explain that scientific knowledge is revised through a process of incorporating new evidence gained through on-going investigation and collaborative discussion

ATMOSPHERIC PROCESS AND THE WATER CYCLE

- _____ explain that seasons are caused by variations in the amounts of the Sun's energy reaching Earth's surface due to the planet's axial tilt
- _____ describe how the processes involved in the water cycle affect climatic patterns
- _____ describe the properties that make water an essential component of the Earth system
- _____ understand the composition of Earth's atmosphere, emphasizing the role of the atmosphere in Earth's weather and climate
- _____ explain the difference between local weather and regional climate
- _____ relate topography and patterns of global and local atmospheric movement and how they influence local weather

SOLAR SYSTEM AND UNIVERSE

- _____ recognize that the solar system includes a great variety of planetary moons, asteroids, and comets
- _____ describe characteristics of the planets in our solar system
- _____ recognize that Earth is part of a solar system located within the Milky Way Galaxy
- _____ use regular and predictable motions of Earth around the Sun and the Moon around the Earth to explain such phenomena as the day, the year, phases of the Moon, and eclipses

EARTH'S COMPOSITION AND STRUCTURE

- _____ recognize that sedimentary rocks and fossils provide evidence for changing environments and the constancy of geologic processes
- _____ explain that rocks at Earth's surface weather, forming sediments that are buried, then compacted, heated and often re-crystallized into new rock
- _____ explain that Earth is composed of a crust, mantle, and core relate the very slow movement of large crystal plates to geological events
- _____ relate geologic processes to state and regional topography relate the properties and distributions of minerals to how they form
- _____ describe the characteristics, abundances, and location of renewable and nonrenewable resources found in Nevada relate the properties of soils to how they form

DIVERSITY OF LIFE

- _____ recognize that fossils provide evidence of how life and environmental conditions have changed throughout geologic time

FORCES AND MOTION

- _____ explain that every object exerts gravitational force on every other object, and the magnitude of this force depends on the mass of the objects and their distance from one another

ENERGY

- _____ demonstrate how vibrations (e.g., sounds, earthquakes) move at different speeds in different materials, have different wave

SOCIAL STUDIES - NEVADA HISTORY

Level Seven is a one-year course featuring a study of Nevada from statehood to present day and American history from the time of the American Revolution through World War II. Students explore and evaluate challenges facing the new nation and make connections between the rise of industrialization and contemporary social and economic conditions. The history of Nevada is integrated throughout the year. This is a required course for all Level Seven students. The growth of the state of Nevada and the challenges that it has faced, coupled with the challenges of today, offers a wide variety of experienced based projects. Students are encouraged to share projects, identified problems, and suggested solutions to these problems with the community.

- _____ evaluate the significant social, cultural, economic, and political changes in the United States and Nevada from the American Revolution through World War II
- _____ summarize the contributions made by diverse cultures to the United States and Nevada
- _____ assess the concepts of tolerance and respect
- _____ cite evidence supporting the development of the state of Nevada and its unique features
- _____ explain the effects of new technologies on the development of the United States and Nevada
- _____ investigate the value of responsible citizenship
- _____ apply the content literacy skills necessary to analyze historical documents, artifacts, and concepts
- _____ use information, media, and technology literacy skills necessary to research, communicate, and demonstrate critical thinking