Discovery Charter School

CURRICULUM STANDARDS BY LEVEL

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