



LEVEL FOUR

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

SOLVING PROBLEMS

- _____ 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

ENGLISH - LANGUAGE ARTS - READING

Level Four students independently acquire meaning by expanding communication skills. Students use reading, writing, listening, speaking, and questioning skills to communicate in an organized and clear manner. They plan and implement projects, community involvement, hands on learning experiences and problem solving challenges to expand their knowledge and understanding of the world around them.

WORD ANALYSIS

- _____ identify and use knowledge of common Greek- and Latin- derived roots, suffixes, and prefixes to determine the meaning of words in context and to build comprehension
- _____ use knowledge of phonics, compound words, and context clues to determine the meaning of unfamiliar words in context and build comprehension
- _____ comprehend, build, and extend vocabulary using homophones, synonyms, and antonyms
- _____ apply knowledge of high frequency words in text to build fluency and comprehension
- _____ apply knowledge of word parts to read silently or aloud fluently
- _____ use dictionaries and glossaries to determine the meanings and other features of unknown words and derivations of words
- _____ apply alphabetic order to locate words in resources

READING STRATEGIES

- _____ use note taking, outlining, summarizing, and other graphic organizers to organize and understand information from text before, during, and after reading
- _____ use before-reading strategies appropriate to text and purpose to improve comprehension: preview text, access prior knowledge, build background knowledge, make predictions, and determine reading rate
- _____ select and use self-correcting strategies appropriate to audience and purpose during reading to gain meaning from text
- _____ use after-reading strategies appropriate to text and purpose to recall details, restate main ideas, organize information, synthesize text and evaluate text
- _____ adjust reading rate to suit difficulty and text type

LITERARY TEXT

- _____ apply knowledge of character, setting, plot, conflict, and resolution to make inferences and draw conclusions
- _____ describe a character's physical and personality traits
- _____ describe the motivation behind a character's action
- _____ make inferences and draw conclusions about characters
- _____ identify main idea and/or a lesson learned based on events or a character's actions
- _____ explain how an author uses figurative language (simile, personification, and hyperbole) in text
- _____ identify how one event may cause another event
- _____ compare texts from different cultures and time periods

- _____ make and revise predictions about plot, conflict(s), and resolutions based on evidence
- _____ use information from reading to answer specific questions
- _____ identify words and phrases that reveal tone
- _____ take an active interest in reading

EXPOSITORY TEXT

- _____ identify the purpose of and gain information from diagrams, graphs, charts, and maps
- _____ identify and explain the use of bold faced, underlined, and italicized words
- _____ identify words and phrases that reveal tone
- _____ identify theme
- _____ identify similes, hyperbole, and personification
- _____ describe sequential and/or chronological order
- _____ explain cause and its effect on events and/or relationships
- _____ explain a problem and its solution
- _____ distinguish between main idea and supporting details
- _____ compare texts from different cultures and time periods
- _____ use information to answer specific questions
- _____ make connections to self, other text, and/or the world
- _____ make predictions and inferences, draw conclusions about texts, and support them with evidence from a variety of sources
- _____ distinguish between fact and opinion

EFFECTIVE WRITING

- _____ use prewriting strategies to organize ideas for written work
- _____ use prewriting strategies to choose, explore, narrow, and plan topics for written compositions
- _____ write papers appropriate to audience and purpose that include an introduction, supporting details, transitions, and a conclusion
- _____ revise drafts to improve sentence variety and fluency
- _____ revise drafts for organization, voice, word choice, details, ideas, audience, and purpose
- _____ edit for correct capitalization: initials, abbreviations, cities and states, salutations, and closings
- _____ edit for correct punctuation: quotation marks, contractions, and colons
- _____ edit for correct word usage: adjectives, adverbs, subject/verb agreement, and verb tenses, and clauses
- _____ edit for use of complete sentences with a focus on compound sentences
- _____ prepare a legible draft and share with others

TYPES OF WRITING

- _____ write multi-paragraph expository papers with a clear focus that include a topic sentence, supporting details, transitions, and a concluding statement
- _____ write multiple-paragraph narrative/descriptive papers appropriate to audience and purpose that moves through a sequence of events and includes details to develop the plot, characters, and setting
- _____ write responses to literary and expository selections that include supporting details
- _____ write persuasive essays and compositions that include a thesis statement and supporting evidence
- _____ write organized friendly letters, formal letters, thank you letters, and invitations in an appropriate format for a specific audience and purpose
- _____ formulate research questions and write research papers
- _____ use expanded vocabulary in writing

LISTENING

- _____ listen for a variety of purposes: to gain information, to be entertained, to understand directions
- _____ listen to identify and evaluate how speaking techniques are used to convey a message
- _____ listen to and provide constructive feedback
- _____ evaluate constructive feedback
- _____ follow oral directions to complete a complex task

SPEAKING

- _____ select and use appropriate public speaking techniques and apply standard English to communicate ideas
- _____ give organized presentations that demonstrate a clear view point, follow a logical sequence, and illustrate information
- _____ give clear and concise directions to complete a task

MATHEMATICS

Level Four students extend their learning of multiplication and division of whole numbers. They solve measurement problems that involve area and perimeter, money notation, and elapsed time. Students expand their understanding of geometry concepts to include symmetry, congruence, and the coordinate plane. They plan and implement experienced based projects and community experiences involving the application of number skills.

NUMBERS, NUMBER SENSE AND COMPUTATION

- _____ identify and use place value positions of whole numbers to one million
- _____ identify fractions and compare fractions with like denominators using models, drawings, and numbers
- _____ read and write decimals, extending to the thousandths place
- _____ add and subtract multi-digit numbers
- _____ multiply and divide multi-digit numbers by a one-digit whole number with regrouping, including monetary amounts as decimals
- _____ estimate to determine the reasonableness of an answer in mathematical and practical situations
- _____ describe and use algorithms for addition, subtraction, multiplication, and division
- _____ generate and solve addition, subtraction, multiplication, and division problems using whole numbers in practical situations

PATTERNS, FUNCTIONS AND ALGEBRA

- _____ identify, describe, and represent patterns and relationships in the number system including arithmetic and geometric sequences
- _____ model, explain, and solve open number sentences involving addition, subtraction, multiplication, and division
- _____ select the solution to an equation from a given set of numbers
- _____ complete number sentences with the appropriate words and symbols (+, -, x, ÷, >, <, =)
- _____ analyze, describe, create, and extend patterns using numbers, appropriate tables, and calculators

MEASUREMENT

- _____ estimate and convert units of measure for length, area, and weight within the same measurement system (customary and metric)
- _____ measure length, area, temperature, and weight to a required degree of accuracy in customary and metric systems
- _____ determine totals for monetary amounts in practical situations
- _____ use money notation to add and subtract given monetary amounts
- _____ estimate temperature in practical situations
- _____ use A.M. and P. M. appropriately in describing time
- _____ recognize the number of weeks in a year, days in a year, and days in a month
- _____ use elapsed time in quarter-hour increments, beginning on the quarter-hour, to determine start, end, and elapsed time

SPATIAL RELATIONSHIPS, GEOMETRY AND LOGIC

- _____ identify, draw, and classify angles, including straight, right, obtuse, and acute
- _____ identify shapes that are congruent, similar, and/or symmetrical using a variety of methods including transformational motions
- _____ plan and implement experienced based projects and community experiences involving the application of number skills
- _____ identify coordinates for a given point in the first quadrant
- _____ locate points of given coordinates on a grid in the first quadrant
- _____ identify, describe, and classify two- and three-dimensional figures by relevant properties including the number of vertices, edges, and faces using models
- _____ identify, draw, label, and describe points, line segments, rays, and angles
- _____ describe geometric patterns and relationships
- _____ use the connectors (and, or, not) to describe the members of a set

DATA ANALYSIS

- _____ pose questions that can be used to guide the collection of categorical and numerical data
- _____ organize and represent data using a variety of graphical representations including frequency tables and line plots
- _____ interpret data and make predictions using frequency tables and line plots
- _____ collect, organize, display, describe, and interpret simple data to solve problems
- _____ conduct simple probability experiments using concrete materials
- _____ represent the results of simple probability experiments as fractions to make predictions about future events
- _____ apply probability concepts and counting rules
- _____ solve problems and make predictions based on collected data

PROBLEM SOLVING

- _____ select, modify, develop, apply, and justify strategies to solve a variety of mathematical and practical problems and to investigate and understand mathematical concepts
- _____ apply previous experience and strategies to new problem situations
- _____ determine an efficient strategy, verify, interpret, and evaluate results with respect to the original problem
- _____ try more than one strategy to solve a problem
- _____ generalize solutions and strategies to new problem situations
- _____ interpret and solve a variety of mathematical problems by paraphrasing, identifying necessary and extraneous information, and ensuring the answer is reasonable
- _____ use technology, including calculators, to investigate and describe relationships such as patterns and functions, to develop mathematical concepts and solve problems

MATHEMATICAL COMMUNICATION

- _____ discuss and exchange ideas about mathematics as a part of learning
- _____ use inquiry techniques (discussion, questioning, research, data gathering) to solve mathematical problems
- _____ identify and translate key words and phrases that imply mathematical operations
- _____ use a variety of methods (physical materials, diagrams, and tables) to represent and communicate mathematical ideas through oral, verbal, and written formats
- _____ use mathematical words, phrases, and symbols to communicate and explain mathematical situations

MATHEMATICAL REASONING

- _____ justify and explain the solutions to problems using manipulatives and physical models
- _____ use patterns and relationships to analyze mathematical situations and draw logical conclusions about mathematical problems
- _____ follow a logical argument and judge its validity
- _____ ask questions to reflect on, clarify, and extend thinking
- _____ review and refine the assumptions and steps used to derive conclusions in mathematical arguments
- _____ determine relevant, irrelevant, and/or sufficient information to solve mathematical problems

MATHEMATICAL CONNECTIONS

- _____ link new concepts to prior knowledge
- _____ use mathematical ideas from one area of mathematics to explain an idea from another area of mathematics
- _____ use physical models to explain the relationship of concepts and procedures
- _____ apply mathematical thinking and modeling to solve problems that arise in other disciplines, such as rhythm in music and motion in science
- _____ approach problems with flexibility in a variety of ways within and beyond the field of mathematics
- _____ identify, explain, and use mathematics in everyday life strategy when the first strategy proves to be unproductive

SCIENCE

Level Four students deepen their science observation, record-keeping, and collaborative skills as they explore water, the water cycle, human body systems, and electricity and magnetism. The more they discover, the more questions they ask. They study the contributions of scientists and experience the process of inventing. Observations and predictions about our Solar System, the Sun, and the Moon are made. Nature and History of Science objectives are embedded throughout the year in the contexts of life, earth, and physical science. 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

- _____ explain that scientific progress is made by conducting careful investigations, recording data, and communicating the results in an accurate method
- _____ draw conclusions from scientific evidence
- _____ generate investigable questions based on observations and interactions with objects, organisms, and phenomena
- _____ use science notebook entries to develop, communicate, and justify descriptions, explanations, and predictions
- _____ make predictions from labeled illustrations and graphic representations of data
- _____ create and use labeled illustrations, graphs (number lines, frequency charts, bar graphs, pictographs), and charts to convey ideas and record observations
- _____ plan and conduct safe investigations with a partner and with a small group
- _____ identify, gather, and safely use tools (magnets, thermometer, lens) and materials needed for investigations
- _____ compare a model with what it represents (solar system, electrical circuit, human body models)
- _____ explain that many people have contributed to scientific knowledge
- _____ compare the advantages and disadvantages of using technology (electricity, microscope, telescope)
- _____ identify observable patterns to organize items and make predictions

PHYSICAL SCIENCE

- _____ investigate and describe the way that magnets attract and repel each other and certain kinds of other materials
- _____ investigate and describe that electrically charged particles can attract or repel other electrically-charged material (static electricity)
- _____ describe light in terms of simple properties (color, brightness)
- _____ explain that heat is often produced as a byproduct when one form of energy is converted to another form
- _____ describe how heat can move from one object to another by conduction, and some materials conduct heat better than others
- _____ investigate, construct, and describe simple electrical circuits
- _____ classify materials by their observable physical and chemical properties
- _____ investigate and explain that water can be a liquid or a solid and can go back and forth from one form to another

EARTH SCIENCE

- _____ investigate and describe the water cycle, including the role of the sun
- _____ investigate and describe the factors that affect processes such as evaporation and condensation
- _____ investigate and describe how distance affects the brightness of a light source (stars)
- _____ identify the sun as a star and as the main source of energy for the Earth
- _____ describe how the stars in the sky are not scattered evenly, and they are not all the same in brightness or color
- _____ describe how the components of our Solar System (planets, moon, sun), as well as constellations, appear to move through the sky
- _____ describe that patterns of stars in the sky stay the same although they appear to move across the night sky, and different stars can be seen in different seasons

LIFE SCIENCE

- _____ describe and compare learned and inherited behaviors in animals
- _____ observe and describe variations among individuals within the human population
- _____ explain that plants and animals have structures that work together to enable them to grow, reproduce, and survive
- _____ describe some physical characteristics of plants and animals

SOCIAL STUDIES

Level Four students build upon their understanding of families, schools, and communities, with an emphasis on Nevada. Students learn the story of Nevada including the crucial relationship between the pioneers and the indigenous peoples of the area. Students ask questions, design and implement projects, community experiences and problem solving activities focusing on the growth of the state of Nevada, how we have solved our problems in the past, and how we can solve the problems facing us in this state and in our communities today.

HISTORY

- _____ describe the lifestyles of Nevada’s Desert Archaic people
- _____ define hunter-gatherer
- _____ describe the lifestyles of Nevada’s Native American cultures
- _____ discuss the interactions of pioneers with the Great Basin Indians
- _____ identify contributions of immigrants in Nevada
- _____ discuss examples of compromise and conflict within Nevada, i.e., Pyramid Lake Wars, water allocation, Sagebrush Rebellion
- _____ describe the experiences of pioneers moving west
- _____ identify explorers and settlers in pre-territorial Nevada
- _____ identify the diverse population of Nevada’s early settlers and discuss their unique experiences
- _____ explain the symbols, mottoes, and slogans related to Nevada, i.e., “Battle Born,” the state seal, and “Silver State”
- _____ explain how United States conflicts affected life and society in Nevada
- _____ compare and/or contrast their daily lives with children in Nevada’s past
- _____ recognize that communities include people who have diverse ethnic origins, customs, and traditions, and who make contributions to Nevada
- _____ define social responsibility
- _____ explain how advances in technologies have impacted Nevada, i.e., railroads, mining, and gaming
- _____ discuss major news events on the local and state levels
- _____ describe the economic and cultural influence other nations have on the state of Nevada

GEOGRAPHY

- _____ identify and use intermediate directions on a compass rose to locate places on a map of Nevada
- _____ identify spatial patterns on a map of Nevada, i.e., deserts, mountains, population
- _____ construct a map of Nevada displaying human and physical features
- _____ utilize different types of Nevada maps, i.e., population and physical maps, to understand spatial distribution
- _____ describe the distinguishing features of historical regions in Nevada, i.e., Native American tribal territories, pioneer trails, and settlement areas
- _____ identify regional changes in Nevada over time
- _____ identify and describe the diversity and cultural traditions of Nevada’s people, i.e., Native Americans, Basque communities

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- _____ show how regional change in Nevada from decade to decade has affected characteristics of place, i.e., plows allow farmers to prepare the land for planting, pick axes assist in mining operations
 - _____ locate the counties and county seats of Nevada
 - _____ identify the equator, Prime Meridian, and the International Date Line
 - _____ describe differences in population distribution within Nevada regions
 - _____ list examples of movements of people, goods, and ideas into and across Nevada
 - _____ describe differences among rural, suburban, and urban settlement in Nevada
 - _____ describe historical and current economic issues in Nevada using geographic resources, i.e., illustrate demographic changes due to mining and gaming
 - _____ describe why types of organizations may differ by geographic region in Nevada
 - _____ describe ways physical environments affect human activity in Nevada using historical and contemporary examples
 - _____ describe how technologies altered the physical environment in Nevada, and the effects of those changes on its people
 - _____ explore the impact of human modification of Nevada's physical environment on the people who live there
 - _____ identify natural hazards in Nevada and their impact on the population
 - _____ describe the distribution patterns of natural resources in Nevada

ECONOMICS

- _____ give examples of incentives and determine whether they are positive or negative
- _____ give reasons why consumers choose to buy more of a good or service, i.e., when prices are low, and when they choose to buy less when prices are high
- _____ give reasons why producers choose to sell more of a good or service, i.e., when a price is high, and when they choose to sell less, and when its price is low
- _____ identify factors within an individual's control that can affect the likelihood of employment
- _____ explain why all those who trade must benefit from the trade, using an example such as trading baseball cards
- _____ discuss how the discovery of silver in Nevada affected the forms of money in circulation
- _____ identify instances in which people might pay interest or receive interest
- _____ discuss reasons people use banks
- _____ define productive resources
- _____ define per capita
- _____ identify a for-profit and a not-for-profit organization in the community and a service each provides
- _____ define entrepreneur and identify those individuals in Nevada
- _____ describe resources that are limited in Nevada and ways in which resources are shared
- _____ define imports and exports
- _____ identify goods that would not be readily available in Nevada without international trade

CIVICS

- _____ identify and discuss examples of rules, laws, and authorities that keep people safe and property secure in the state of Nevada
- _____ explain that democracy involves voting, majority rule, and setting rules
- _____ describe the criteria for Nevada citizenship
- _____ discuss the symbolic importance of the Pledge of Allegiance
- _____ explain why we celebrate Nevada Day
- _____ describe the relationship between classroom and school rules
- _____ name the current President of the United States
- _____ name the current governor of Nevada
- _____ explain why local governments are created
- _____ name the three branches of state government
- _____ understand the role of courts
- _____ describe the qualities of a leader
- _____ define and give examples of state and local interest groups
- _____ identify sources of information people use to form an opinion
- _____ identify their county, city, state, and country