



LEVEL FIVE

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 - LANGUAGE ARTS - READING

Level Five students read increasingly complex literature. Students use reading, writing, listening, and speaking and problem solving skills to communicate for different purposes. 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. They share their knowledge and problem solutions with their family, their school and their community. They are willing to assume active roles in improving the world around them.

WORD ANALYSIS

- _____ apply knowledge of phonics, structural elements, and context clues to determine the meaning of unknown words in text
- _____ increase vocabulary by using syntax, prefixes (e.g. bio-, anti-) and suffixes (e.g., -ible, -able)
- _____ build and apply knowledge of content-specific vocabulary in text to build comprehension
- _____ read a variety of narrative and expository text silently or aloud fluently
- _____ apply knowledge of word patterns and rules to spell correctly
- _____ use dictionaries and glossaries to find word origins, pronunciations, and determine the meaning of unknown words

READING STRATEGIES

- _____ select and apply a variety of before-, during-, and after-reading strategies appropriate to audience and purpose to aid comprehension
- _____ use self-correcting strategies during reading to gain meaning from text
- _____ evaluate the effectiveness of reading strategies
- _____ adjust reading rate based on text type and difficulty

LITERARY TEXT

- _____ identify and describe the main problem or conflict, and explain how it is resolved within the story
- _____ describe a character's motivation
- _____ describe a character's physical and personality traits
- _____ make inferences supported by the text about characters' traits and motivations
- _____ describe the theme
- _____ identify and explain the different points of view an author can use in writing a story
- _____ explain a lesson learned based on events and/or a character's actions
- _____ describe and analyze how an author uses figurative language (simile, hyperbole, and personification) in text
- _____ identify words and phrases that reveal an author's tone
- _____ identify examples of irony
- _____ explain the influence of cultures, time periods, and historical events on text
- _____ make and revise predictions based on evidence
- _____ make connections to self, other texts, and/or the world

EXPOSITORY TEXTS

- _____ identify and use text features to comprehend and interpret information for specific purposes
- _____ identify words and phrases that reveal an author's tone
- _____ explain an author's use of figurative language: simile, hyperbole, and personification
- _____ describe the importance of sequential and/or chronological order
- _____ explain a cause and its effect on events and/or relationships
- _____ explain a problem and its solution
- _____ follow the development of an author's argument, viewpoint, or perspective
- _____ describe the main idea and supporting details in a text
- _____ explain the influence of culture and time periods on text
- _____ use information to answer specific questions
- _____ make connections to self, other text, and/or the world
- _____ make inferences and draw conclusions
- _____ distinguish between fact and opinion

EFFECTIVE WRITING

- _____ use pre-writing strategies appropriate to audience and purpose to choose, explore, narrow, and plan topics for written compositions
- _____ write multiple-paragraph papers appropriate to audience and purpose that include an introduction, supporting details, transitions, and a conclusion
- _____ revise drafts for audience, purpose, ideas, organization, relevant details, voice, word choice, and sentence fluency
- _____ edit for correct internal and external punctuation, capitalization, and spelling
- _____ edit for correct word usage: adverbs, subject/verb agreement, verb tenses, pronoun/antecedent agreement, and clauses
- _____ edit for use of complete sentences and for the elimination of sentence fragments and run-ons
- _____ prepare a legible draft to share with others

TYPES OF WRITING

- _____ write expository essays and compositions that include a beginning, middle, and an end, a thesis statement, topic sentences, supporting details, transitions, and a concluding statement
- _____ write persuasive essays and compositions that include a thesis/position statement and relevant supporting evidence
- _____ write narrative/descriptive texts for different audiences and purposes
- _____ write responses to both literary and expository texts
- _____ summarize literary and expository information
- _____ write a research paper by collecting information from multiple sources

- _____ write organized friendly letters, business letters, thank you letters, and invitations in an appropriate format for specific audience and purpose
- _____ use expanded vocabulary in writing

LISTENING

- _____ listen for a variety of purposes: to gain information, to be entertained, and to understand directions
- _____ listen to and evaluate oral communications for content, delivery, point of view, and ideas
- _____ listen to and evaluate construction feedback
- _____ provide constructive feedback to a speaker
- _____ solve problems by identifying, synthesizing, and evaluating data
- _____ listen to and identify how speaking techniques are used to convey a message
- _____ follow oral directions to complete a complex task

SPEAKING

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

MATHEMATICS

Level Five students develop proficiency in using whole numbers, fractions, and decimals to solve problems. They design surveys and collect, display, and analyze data to draw conclusions and make predictions. Algebraic reasoning develops as students identify, describe, and represent patterns and relationships in the number system. Students use spatial sense and geometric concepts to develop an understanding of the relationship between two- and three-dimensional figures. They 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.

NUMBERS, NUMBER SENSE AND COMPUTATION

- _____ identify and use place value positions of whole numbers and decimals to hundredths
- _____ add and subtract fractions with like denominators using models, drawings, and numbers
- _____ compare fractions with unlike denominators using models and drawings and by finding common denominators
- _____ identify, model, and compare improper fractions and mixed numbers
- _____ use multiples of 10 to expand knowledge of basic multiplication and division facts
- _____ add and subtract decimals
- _____ multiply and divide decimals by whole numbers in problems representing practical situations
- _____ use order of operations to evaluate expressions with whole numbers
- _____ generate and solve addition, subtraction, multiplication, and division problems using whole numbers and decimals in practical situations
- _____ use estimation strategies in mathematical and practical situations
- _____ use a variety of appropriate strategies to estimate, compute, and solve mathematical and real-world problems

PATTERNS, FUNCTIONS AND ALGEBRA

- _____ find possible solutions to an inequality involving a variable using whole numbers as a replacement set
- _____ solve equations with whole numbers using a variety of methods, including inverse operations, mental math, and guess and check
- _____ complete number sentences with the appropriate words and symbols including($>$, $<$ and \neq)
- _____ identify, describe, and represent patterns and relationships in the number system, including triangular numbers and perfect squares

MEASUREMENT

- _____ estimate and convert units of measure for weight and volume/capacity within the same measurement system (customary and metric)
- _____ determine totals, differences, and change due for monetary amounts in practical situations
- _____ determine equivalent periods of time, including relationships between and among seconds, minutes, hours, days, months, and years
- _____ describe the difference between perimeter and area, including the difference in units of measure

SPATIAL RELATIONSHIPS, GEOMETRY AND LOGIC

- _____ graph coordinates representing geometric shapes in the first quadrant
- _____ predict and describe the effects of combining, dividing, and changing shapes into other shapes
- _____ identify, classify, compare, and draw triangles and quadrilaterals based on their properties
- _____ identify and draw circles and parts of circles describing the relationships between the various parts
- _____ represent relationships using Venn diagrams
- _____ describe characteristics of right, acute, obtuse, scalene, equilateral, and isosceles triangles
- _____ identify, define, draw, and describe points, line segments, rays, and angles
- _____ identify, draw, label, and describe planes, parallel lines, intersecting lines, and perpendicular lines
- _____ represent concepts of congruency, similarity, and/or symmetry using a variety of methods including dilation (enlargement/reduction) and transformational motions

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 stem-and-leaf plots and histograms
- _____ compute range
- _____ model and compute the measures of central tendency for mean, median, and mode
- _____ interpret data and make predictions using stem-and-leaf plots and histograms
- _____ represent and solve problems involving combinations using a variety of methods
- _____ conduct simple probability experiments using concrete materials
- _____ represent the results of simple probability experiments as decimals to make predictions about future events
- _____ select an appropriate type of graph to accurately represent the data and justify the selection

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 when the first strategy proves to be unproductive
- _____ 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 to 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

SCIENCE

Level Five students ask questions and work collaboratively to develop investigations that provide answers. They look at the work of scientists in various careers. They investigate energy and matter, environments, landforms, and resources. They keep ongoing records of their investigations, data, variables, and evidence. They justify statements, predictions, and explanations with evidence. 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
- _____ use evidence recorded in a science notebook to develop descriptions, models, explanations, and predictions
- _____ replicate investigations conducted by others and compare results
- _____ draw conclusions from scientific evidence
- _____ create and use labeled illustrations, graphs (tables, line plots, stem and leaf plots, scatter plots, histograms), and charts to convey ideas and record observations
- _____ design and conduct safe investigations with a partner and with a small group, based on self-generated questions
- _____ use models to explain how something works or how something is constructed (stream table, terrarium, map, globe)
- _____ explain that all people can contribute to scientific knowledge and discovery
- _____ investigate observable patterns that can be used to organize items and ideas and use these patterns to make predictions
- _____ make predictions from tables, charts, and graphs of data

PHYSICAL SCIENCE

- _____ describe how matter exists in different states and has distinct physical properties
- _____ investigate and describe how energy can be used to bring about changes in matter
- _____ classify materials by their observable, physical, and chemical properties
- _____ investigate and describe that by combining two or more materials, the properties of the resulting material can be different from the original materials (vinegar and baking soda, drink mix, salt and water, trail mix)
- _____ investigate and describe that the total mass of a material remains constant whether it is together, in parts, or in a different state
- _____ observe and describe that materials may be composed of parts that are too small to be seen without magnification
- _____ describe how unbalanced forces (a push or pull) cause objects to change their motion (speed, direction, or both)
- _____ describe how the strength of a force and the mass of an object influence the amount of change in an object's motion
- _____ explain Earth's gravitational pull and that objects move towards the Earth when they are released

EARTH SCIENCE

- _____ explain that the Sun is the main source of the various kinds of energy used on Earth
- _____ investigate and describe various meteorological phenomena (flooding, snowstorms, thunderstorms, and drought)
- _____ explain that water, wind, and ice constantly change the Earth's land surface
- _____ compare and contrast the kinds of landforms
- _____ investigate and describe how change is an ongoing process that can be seen throughout the natural world
- _____ differentiate between renewable and nonrenewable resources
- _____ investigate and describe how slow processes (erosion and deposition) and fast processes (volcanoes and earthquakes) effect landforms
- _____ describe the positive and negative impacts of technologies (dams, agriculture) on society and the environment

LIFE SCIENCE

- _____ state that reproduction is an essential characteristic for the continuation of every species
- _____ explain how the sun's energy is the primary source of energy for most ecosystems and moves through food webs
- _____ explain that living things get what they need to survive from their environments
- _____ investigate and describe the interaction of organisms with each other and with the non-living parts of their ecosystem
- _____ investigate and describe how organisms, including humans, can cause changes in their environments
- _____ investigate and describe how environmental changes allow some plants and animals to survive and reproduce, but others may die
- _____ investigate and describe why, for any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all
- _____ explain how differences among individuals within a species give them advantages and/or disadvantages in surviving and reproducing
- _____ investigate and describe how some environmental conditions are more favorable than others to living things
- _____ investigate, compare and contrast the different structures of organisms that serve different functions for growth, reproduction, and survival
- _____ recognize that fossils are evidence of past life

SOCIAL STUDIES

Level Five students study the development of the nation through Westward Expansion. The focus of study begins with the native inhabitants of the Americans through the building and expansion of our nation. They examine the impact of Constitutional issues on American society by studying the ideas, documents, and events that were critical to building the foundations of American democracy. Students explain how different regions of the United States offer specific resources and income opportunities for people. Students ask questions, design and implement projects, community experiences and problem solving activities focusing on the growth of the United States, how we have solved our problems in the past, and how we can solve the problems facing us in our country today.

HISTORY

- _____ identify and describe Native North American life and cultural regions prior to European contact
- _____ identify and describe the attributes of Native American nations in the local region and North America
- _____ discuss the interactions of early explorers with native cultures
- _____ identify the contributions of Native Americans, Europeans, and Africans to North American beliefs and traditions
- _____ describe the social, political, and religious lives of people in the New England, Middle, and Southern colonies
- _____ identify individuals and groups responsible for founding and settling the American colonies
- _____ examine the cultural exchange among the Native Americans, Europeans, and Africans
- _____ describe motivations for and expeditions of European exploration of the Americas
- _____ describe issues of compromise and conflict within the United States
- _____ describe the competition among the English, French, Spanish, Dutch, and Indian nations for control of North America
- _____ explain why slavery was introduced into colonial America
- _____ explain how the interactions among Native Americans, Africans, and Europeans, during colonial America resulted in unique economic, social, and political institutions
- _____ identify the events that led to the Declaration of Independence
- _____ identify the causes, key events, and people of the American Revolution
- _____ explain the relationship between the American colonies and England, and discuss its impact on independence
- _____ compare and/or contrast the daily lives of children throughout the United States, both past and present
- _____ recognize that communities include people who have diverse ethnic origins, customs, and traditions, and who make contributions to the United States
- _____ describe ways individuals display social responsibility
- _____ explain how technologies in United States history changed the way people lived
- _____ provide and discuss major news events on local, state, national, and world levels
- _____ discuss the economic, political, and cultural relationships the United States has with other countries

GEOGRAPHY

- _____ identify and locate major geographic features in Nevada and the United States using maps and map elements
- _____ identify spatial patterns of the United States
- _____ describe purposes for different types of maps and globes, i.e., topographical, political, physical
- _____ construct maps, graphs, and charts to display information about human and physical features in the United States
- _____ identify the purpose and content of various United States maps
- _____ derive geographic information from photographs, maps, graphs, books, and technological resources
- _____ provide examples of human-environment interactions in the United States
- _____ identify United States regions in which historical events occurred, i.e., thirteen colonies, Underground Railroad, and California gold fields
- _____ provide examples of cultural identity in communities or regions from different perspectives
- _____ show how regional change in the United States from decade to decade has affected characteristics of place, i.e., salt and sand used to melt ice, flood basins, levees
- _____ label a map of the United States with their capitals
- _____ define absolute location
- _____ explain differences in population distribution within the United States
- _____ list push-pull factors influencing human migration and settlement in the United States
- _____ describe differences among rural, suburban, and urban settlement in the United States
- _____ describe historical and current economic issues in the United States using geographic resources, i.e., illustrate demographic changes due to mining and gaming
- _____ describe why types of organizations may differ by geographic region in the United States
- _____ describe ways physical environments affect human activity in the United States using historical and contemporary examples
- _____ describe how technologies altered the physical environment in the United States, and the effects of those changes on its people
- _____ explore the impact of human modification of the United States' physical environment on the people who live there
- _____ identify and locate potential natural hazards in the United States and their impacts on the land and population
- _____ describe and compare the distribution patterns and use of natural resources in the United States

ECONOMICS

- _____ describe how scarcity requires a person to make a choice and identify costs associated with that choice
- _____ demonstrate an understanding that an individual can be a consumer and producer at the same time
- _____ identify the resources needed for production in households, schools, and community groups
- _____ describe how income reflects choices people make about education, training, skill development, lifestyle, and careers
- _____ demonstrate an understanding of supply and demand in a market

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- _____ define trade and commodities used in trade
 - _____ identify how interest rates affect borrowing, saving, and purchasing using credit
 - _____ identify services offered by different types of financial institutions
 - _____ illustrate how one person's spending becomes another person's income
 - _____ recognize the three types of productive resources
 - _____ define inflation and deflation
 - _____ define labor force and unemployment
 - _____ demonstrate per capita measures in the classroom
 - _____ explain the purposes for establishing for-profit and not-for-profit organizations
 - _____ provide an example of how purchasing a tool or acquiring education can increase the ability to produce goods
 - _____ describe the steps an entrepreneur would take to start a business
 - _____ explain why specialization increases productivity and interdependence
 - _____ describe what it means to compete, and give examples of ways sellers compete
 - _____ define mercantilism
 - _____ identify scarce resources and identify how they are allocated in the United States
 - _____ explain why the United States imports and exports goods
 - _____ define exchange rates
 - _____ define globalization and explain how the United States economy is affected by international trade

CIVICS

- _____ explain that the Declaration of Independence, the United States Constitution, and the Bill of Rights, are written documents that are the foundation of the United States government
- _____ describe the operation of representative government
- _____ describe the criteria for United States citizenship
- _____ explain the symbolic importance of the Pledge of Allegiance and the Fourth of July
- _____ describe examples of national, state, and local laws
- _____ identify the three branches of government (as set forth in the United States Constitution)
- _____ name the two houses of the United States Congress and explain how representation is determined
- _____ identify the powers of the United States Congress, i.e., power to tax, declare war, and impeach the President
- _____ identify the duties of the President within the executive branch
- _____ explain that the United States Supreme Court is the highest court in the land
- _____ describe the purpose of a judge and jury in a trial as it relates to resolving disputes
- _____ explain the qualities of a leadership
- _____ name the two major political parties
- _____ give examples of national interest groups
- _____ compare sources of information people use to form an opinion
- _____ define propaganda and give examples
- _____ describe the influences other nations have had on the development of the United States political system