



GRADE 9 PROJECT TIME LEARNING OUTCOMES AND UNIT GUIDE

Who We Are

An inquiry into the nature of the self; beliefs and values; personal, physical, mental, social and spiritual health; human relationships including families, friends, communities, and cultures; rights and responsibilities; what it means to be human.

Central idea: Circle of life from cell to society

Lines of inquiry: Cellular reproduction Technologies in human reproduction Genetic information Societal makeup What shapes worldview

Life Science – Cells, Tissues, Organs, & Systems (CS)

SS: Interactions and Interdependence of Nations (IN)

Observe and describe the significance of cellular reproductive processes, including mitosis and meiosis. Examine the process of and influences on the transfer of genetic information and the impact of that understanding on society past and present.

Analyze the process of human reproduction, including the influence of reproductive and contraceptive technologies.

Explain what constitutes a society. Compare the factors that shape worldviews in a society, including time and place, culture, language, religion, gender identity, socio-economic situation, and education.

Where We Are in Place and Time

An inquiry into orientation in place and time; personal histories; homes and journeys; the discoveries, explorations and migrations of humankind; the relationships between and the interconnectedness of individuals and civilizations, from local and global perspectives.

Central idea: Learning about the past helps us understand the future

Lines of inquiry: Formation of the universe History of astronomy Space exploration Nicaragua's societies throughout time Development of societies

Earth & Space Science – Water Systems on Earth (WS)

Social Studies: Dynamic Relationships (DR)

Inquire into the motion and characteristics of astronomical bodies in our solar system and the universe. Analyze scientific explanations of the formation and evolution of our solar system and the universe. Examine how various cultures, past and present understand and represent astronomical phenomenon.

Analyze human capabilities for exploring and understanding the universe, including technologies and programs that support such exploration.

Synthesize the significance of key historical events in societies studied. Assess the relationship of the natural environment in the development of a society. Determine the influence of societies of the past on contemporary life in Nicaragua.

How We Express Ourselves

An inquiry into the ways in which we discover and express ideas, feelings, nature, culture, beliefs and values; the ways in which we reflect on, extend and enjoy our creativity; our appreciation for the aesthetic.

Central idea: Different elements comprise the world around us

Lines of inquiry: Properties of common substances History of the structure of matter Periodic table of elements Expressions of worldview

Physical Science: Atoms and Elements (AE)

Social Studies: Dynamic Relationships (DR)

SS: Interactions and Interdependence of Nations (IN)

Distinguish between physical and chemical properties of common substances, including those found in household, commercial, industrial, and agricultural applications. Analyze historical explanations of the structure of matter up to and including: Dalton model, Thomson model, Rutherford model, Bohr model of the atom. Demonstrate an understanding of the classification of pure substances (elements and compounds), including the development and nature of the Periodic Table.

Examine the challenges involved in obtaining information about societies of the past.

Analyze the ways a worldview is expressed in the daily life of a society.



# SAN JUAN DEL SUR DAY SCHOOL



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### How the World Works

*An inquiry into the natural world and its laws; the interaction between the natural world (physical and biological) and human societies; how humans use their understanding of scientific principles; the impact of scientific and technological advances on society and on the environment.*

Central idea: Electricity and other technologies have changed how society functions

Lines of inquiry:  Characteristics of electricity  Energy efficiency  Energy in Nicaragua  Distribution of resources  Trade and transportation  
 Technology's influence

#### Physical Science: Characteristics of Electricity

#### Social Studies: Resources and Wealth (RW)

Demonstrate and analyze characteristics of static electric charge and current electricity, including historical and cultural understanding.

Assess operating principles, costs, and efficiencies of devices that produce or use electrical energy.

Compare differing perspectives regarding the acquisition and distribution of resources and wealth in the societies studied.

Critique impacts of past, current, and possible future methods of small and large scale electrical energy production and distribution in Nicaragua.

Appraise the significance of trade and transportation in the development of the societies studied.

Analyze the relationships that exist among voltage, current, and resistance in series and parallel circuits.

Determine the influence of technologies of past societies studied on contemporary society.

### How We Organize Ourselves

*An inquiry into the interconnectedness of human-made systems and communities; the structure and function of organizations; societal decision-making; economic activities and their impact on humankind and the environment.*

Central idea: Analyzing the process of how lives are created - from organisms to empires

Lines of inquiry:  Sexual and asexual reproduction  Compare and contrast plant and animal reproduction  Roles and responsibilities of citizens  
 Empires and territorial expansion  Power and authority of governments

#### Life Science: Reproduction & Human Development

#### Social Studies: Power and Authority (PA)

Describe the processes and implications of sexual and asexual reproduction in plants and animals.

Examine concepts of power and authority in the governance of the societies studied.  
Analyze the impact of empire-building and territorial expansion on indigenous populations and other groups in the societies studied.

Investigate the roles and responsibilities of members of the societies studied and those of citizens in contemporary Nicaragua and North American countries.

### Sharing the Planet

*An inquiry into rights and responsibilities in the struggle to share finite resources with other people and with other living things; communities and the relationships within and between them; access to equal opportunities; peace and conflict resolution.*

Central idea: Influencing society's worldview and well-being through science and engineering

Lines of inquiry:  Determining change society needs  Evaluating needs for change  Creating change through problem solving  Influence of worldview

#### Engineering, Technology, & Application of Science (ETS)

#### SS: Interactions and Interdependence of Nations (IN)

Use science and engineering practices for a situation that people want to change or create, to make sense of phenomena and solve problems.

Determine the influence of worldview on the choices, decisions, and interactions in a society.