9-12 Sciences Subject Area
Correlated to
PROJECT WILD AND WILD AQUATIC

PHYSICAL SCIENCE

CCG: Matter: Understand structure and properties of matter.

BENCHMARK	WILD	WILD AQUATIC
SC.CM.PS.01 Describe properties of elements and their relationship to the periodic table.		
SC.CM.PS.01.01 Explain atoms and their base components (protons, neutrons, and electrons) as a basis for all matter.		
SC.CM.PS.01.02 Read and interpret the periodic table, recognizing the relationship of the chemical and physical properties of the elements to their position on the periodic table.		
SC.CM.PS.01.03 Recognize that the historical development of atomic theory demonstrates how scientific knowledge changes over time, and how those changes have had an impact on society.		

CCG: Matter: Understand chemical and physical changes.

BENCHMARK	WILD	WILD AQUATIC
SC.CM.PS.02 Analyze the effects of various factors on physical changes and chemical reactions.		
SC.CM.PS.02.01 Describe how transformations among solids, liquids, and gases occur (change of state).		
SC.CM.PS.02.02 Identify factors that can influence change of state, including temperature, pressure, and concentration.		
SC.CM.PS.02.03 Describe chemical reactions in terms of reactants and products.		

SC.CM.PS.02.04 Describe the factors that affect the rate of chemical reactions.		
SC.CM.PS.02.05 Recognize examples that show when substances combine or break apart in a chemical reaction, the total mass remains the same (conservation of mass).		

CCG: Force: Understand fundamental forces, their forms, and their effects on motion.

BENCHMARK	WILD	WILD AQUATIC
SC.CM.PS.03 Describe and explain the effects of multiple forces acting on an object.		
SC.CM.PS.03.01 Understand and apply the relationship F=ma in situations in which one force acts on an object.		
SC.CM.PS.03.02 Recognize that equal and opposite forces occur when one object exerts a force on another.		
SC.CM.PS.03.03 Describe the forces acting on an object, based on the motion of that object.		
SC.CM.PS.04 Recognize that gravity is a universal force.		
SC.CM.PS.04.01 Describe the relationship of mass and distance to gravitational force.		

CCG: Energy: Understand energy, its transformations, and interactions with matter.

BENCHMARK	WILD	WILD AQUATIC
SC.CM.PS.05 Describe differences and similarities between kinds of waves, including sound, seismic, and electromagnetic, as a means of transmitting energy.		
SC.CM.PS.05.01 Recognize that waves of all kinds have energy that can be transferred when the waves interact with matter.		

SC.CM.PS.05.02 Apply the concepts of frequency, wavelength, amplitude, and energy to electromagnetic and mechanical waves.		
SC.CM.PS.06 Describe and analyze examples of conservation of energy.		
SC.CM.PS.06.01 Recognize that heat energy is a by-product of most energy transformations.	**S**ustainability: Then, Now, Later	
SC.CM.PS.06.02 Describe ways in which energy can be transferred, including chemical reactions, nuclear reactions, and light waves.	**S**ustainability: Then, Now, Later	
SC.CM.PS.06.03 Explain the difference between potential and kinetic energy.		
SC.CM.PS.06.04 Analyze the flow of energy through a system by applying the law of conservation of energy.		

LIFE SCIENCE

CCG: Organisms: Understand the characteristics, structure, and functions of organisms.

BENCHMARK	WILD	WILD AQUATIC
SC.CM.LS.01 Describe, explain, and compare the structure and functions of cells in organisms.		
SC.CM.LS.01.01 Describe how biological systems can maintain equilibrium (homeostasis).		**S**ea Turtle International
SC.CM.LS.01.02 Identify unique structures in cells from plants, animals, and prokaryotes.		
SC.CM.LS.01.03 Identify cell organelles and state how their activities contribute to a particular type of cell carrying out its functions.		
SC.CM.LS.01.04 Explain the role of the cell membrane in cell transport.		

SC.CM.LS.01.05 Distinguish between active and passive transport, including diffusion and osmosis, explaining the mechanics of each.		
SC.CM.LS.01.06 Describe photosynthesis as a chemical process and part of the carbon cycle.		
SC.CM.LS.01.07 Explain how the development of tools and technology, including microscopes, has aided in the understanding of cells and microbes.		

CCG: Heredity: Understand the transmission of traits in living things.

BENCHMARK	WILD	WILD AQUATIC
SC.CM.LS.02 Explain laws of heredity and their relationship to the structure and function of DNA.		
SC.CM.LS.02.01 Describe the structure of DNA and the way that DNA functions to control protein synthesis.		
SC.CM.LS.02.02 Recognize and understand the differences between meiosis and mitosis in cellular reproduction.		
SC.CM.LS.02.03 Recognize that changes in DNA (mutations) and anomalies in chromosomes create changes in organisms.	**B**ottleneck Genes	
SC.CM.LS.02.04 Apply concepts of inheritance of traits, including Mendel's laws, Punnett squares, and pedigrees, to determine the characteristics of offspring.	**B**ottleneck Genes	
SC.CM.LS.02.05 Recognize the existence of technology that can alter and/or determine inherited traits.		

CCG: Diversity/Interdependence: Understand the relationships among living things and between living things and their environments.

BENCHMARK	WILD	WILD AQUATIC
SC.CM.LS.03 Describe and analyze the effect of species, including humans, on an ecosystem.	**A** Picture is Worth a Thousand Words **B**ack from the Brink **B**irds of Prey **B**ottleneck Genes **C**arrying Capacity **D**eer Crossing **D**eer Dilemma **D**ropping in on Deer **F**orest in a Jar **F**rom Bison to Bread: The American Prairie	**D**am Design **T**he Glass Menagerie **W**hen a Whale is Right
SC.CM.LS.03.01 Predict outcomes of changes in resources and energy flow in an ecosystem.	**A** Picture is Worth a Thousand Words **B**ack from the Brink **B**irds of Prey **C**arrying Capacity **D**eer Crossing **D**eer Dilemma **D**ropping in on Deer **F**orest in a Jar **F**rom Bison to Bread: The American Prairie **S**ustainability: Then, Now, Later	**D**am Design **T**he Glass Menagerie **W**hen a Whale is Right
SC.CM.LS.03.02 Explain how humans and other species can impact an ecosystem.	**A** Picture is Worth a Thousand Words **B**ack from the Brink **B**irds of Prey **C**arrying Capacity **D**eer Crossing **D**eer Dilemma **D**ropping in on Deer **F**ire Ecologies **F**orest in a Jar **F**rom Bison to Bread: The American Prairie **S**ustainability: Then, Now, Later **T**urkey Trouble	**D**am Design **T**he Glass Menagerie **W**hen a Whale is Right

SC.CM.LS.03.03 Explain how the balance of resources will change with the introduction or loss of a new species within an ecosystem.	**A** Picture is Worth a Thousand Words **B**ack from the Brink **B**ottleneck Genes **C**arrying Capacity **D**eer Crossing **D**eer Dilemma **D**ropping in on Deer **F**ire Ecologies **F**orest in a Jar **F**rom Bison to Bread: The American Prairie **S**ustainability: Then, Now, Later **T**urkey Trouble	**T**he Glass Menagerie **W**hen a Whale is Right
SC.CM.LS.04 Analyze how living things have changed over geological time, using fossils and other scientific evidence.		
SC.CM.LS.04.01 Recognize that, over time, natural selection may result in development of a new species or subspecies.	**B**ottleneck Genes	
SC.CM.LS.04.02 Recognize that natural selection and its evolutionary consequences provide an explanation for the fossil record as well as an explanation for the molecular similarities among varied species.		
SC.CM.LS.04.03 Explain how biological evolution can account for the diversity of species developed over time.	**B**ottleneck Genes	
SC.CM.LS.04.04 Explain the relationship between genetics, mutations, and biological evolution.	**B**ottleneck Genes	
SC.CM.LS.04.05 Explain how our understanding of evolution has changed over time.		

EARTH SCIENCE

CCG: The Dynamic Earth: Understand the properties and limited availability of the materials which make up the Earth.

BENCHMARK	WILD	WILD AQUATIC
SC.CM.ES.01 Describe how the importance and use of resources has changed over time with changes in economic and technological systems.	**S**ustainability: Then, Now, Later	**D**am Design
SC.CM.ES.01.01 Predict consequences of increased consumption of renewable and non-renewable resources.	**A**rtic Survival **F**rom Bison to Bread: The American Prairie **S**ustainability: Then, Now, Later	**D**am Design

CCG: The Dynamic Earth: Understand changes occurring within the lithosphere, hydrosphere, and atmosphere of the Earth.

BENCHMARK	WILD	WILD AQUATIC
SC.CM.ES.02 Analyze the relationship between global energy transfer and climate.	**S**ustainability: Then, Now, Later	
SC.CM.ES.02.01 Describe the effect of various gases in the atmosphere on the amount of energy retained by the Earth system.	**S**ustainability: Then, Now, Later	
SC.CM.ES.02.02 Describe how solar radiation and the amount that reaches Earth is affected by stratospheric ozone.	**S**ustainability: Then, Now, Later	
SC.CM.ES.02.03 Describe how differential heating of the Earth's surface, atmosphere, and oceans produces wind and ocean currents.	**S**ustainability: Then, Now, Later	
SC.CM.ES.03 Analyze evidence of ongoing evolution of the Earth system.		
SC.CM.ES.03.01 Describe methods of determining ages of rocks and fossils.		
SC.CM.ES.03.02 Use rock sequences and fossil evidence to determine geologic history.		
SC.CM.ES.03.03 Describe and analyze theories of Earth's origin and early history using scientific evidence.		

SC.CM.ES.03.04 Describe how earthquakes, volcanic eruptions, mountain building, and continental movements result from slow plate motions.		
SC.CM.ES.03.05 Describe how the evolution of life caused dramatic changes in the composition of the Earth's atmosphere, which did not originally contain oxygen.		
SC.CM.ES.03.06 Identify how volcanic eruptions and impacts of huge rocks from space can cause widespread effects on climate.		

CCG: The Earth in Space: Understand the Earth’s place in the solar system and the universe.

BENCHMARK	WILD	WILD AQUATIC
SC.CM.ES.04 Explain how mass and distance affect the interaction between Earth and other objects in space.		
SC.CM.ES.04.01 Recognize that the sun's gravitational pull holds the Earth and other planets in their orbits, just as the planets' gravitational pull keeps their moons in orbit around them.		
SC.CM.ES.04.02 Explain that the force of gravity between Earth and other objects in space depends only upon their masses and the distances between them.		

CCG: The Universe: Describe natural objects, events, and processes outside the Earth, both past and present.

BENCHMARK	WILD	WILD AQUATIC