Pacing Guide ***Science*** ***Parham***

Course: Science	**8th Grade Curriculum Mapping**		Discovery Education Techbook
ESTIMATED Time Frame/ Date	**Content**		
	Topics Covered	**Expectations**	**Essential standards**
Week 1	Scientific Method and Lab Materials	Using appropriate technology and tools	8.TT.1.1
Week 2	Lab Safety	Using appropriate technology and tools	8.TT.1.1
Week 3-4	The Periodic Table	• Explain how elements are organized in the periodic table. • Describe and compare the properties of elements in major regions of the periodic table. • Explain how the periodic table can be used to help predict the properties of elements in the periodic table. • Create a model chart similar to the periodic table by organizing a collection of items based on their properties.	8.P.1.1. 8.P.1.2. 8.P.1.3 8.P.1.4
Week 4-6	Combining nd Seperating	• Describe a mixture, a solution, and a pure substance. • Distinguish between solutions, colloids, suspensions, and mixtures. • Separate mixtures into their components using a variety of methods.	8.P.1.1. 8.P.1.2. 8.P.1.3 8.P.1.4
Week 7-8	Atomic Structure and Elements	• Recognize that the smallest particle representing an element is an atom. • Construct a simple model of an atom and identify the particles that make up the atom. • Use the number of protons in an atom to identify the element it represents.	8.P.1.1. 8.P.1.2. 8.P.1.3 8.P.1.4

		• Describe how electrons can move from one atom to another when atoms bond with other atoms. • Describe how electrons can move between atoms to produce an electric current.	
Week 9	Compounds	• Identify the characteristics of a compound. • Build models of compounds. • Explain how scientists name simple compounds. • Explain why carbon is unique and essential for life on Earth.	8.P.1.1. 8.P.1.2. 8.P.1.3 8.P.1.4
Week 10	Molecules	• Recognize that atoms and molecules are too small to be seen. • Identify examples of elements, compounds, molecules, and diatomic molecules. • Describe how the properties of a compound are different from the properties of the elements that form the compound. • Draw atomic diagrams of elements, compounds, and diatomic molecules. • Build models of elements, compounds, and diatomic molecules.	8.P.1.1. 8.P.1.2. 8.P.1.3 8.P.1.4
Week 11	Chemical Reactions	• Explain the difference between chemical and physical changes. • Infer from the law of conservation of mass that the masses of reactants and products in a chemical reaction are the same. • Differentiate endothermic and exothermic reactions.	8.P.1.1. 8.P.1.2. 8.P.1.3 8.P.1.4
Week 12-13	Chemical Reaction equations	• List the indicators that a chemical reaction has occurred and explain what happened.	8.P.1.1. 8.P.1.2.

		• Identify the reactants and products in a chemical reaction. • Distinguish between endothermic and exothermic chemical reactions. • Explain the law of conservation of mass. • Explain how chemical reactions are represented so that mass is conserved. • Correctly balance given unbalanced chemical equations.	8.P.1.3 8.P.1.4
Week 14-15	Classifying Living Things	• Identify common features that scientists use to classify organisms. • Use common characteristics to sort organisms into groups. • Use the Linnaean system of classification to determine if organisms are related to each other.	8.L.4.1
Week 16-17	Energy in ecosystems	• Construct an energy pyramid. • Organize a food web. • Explain energy flow through a food web. • Summarize why energy is necessary for organisms to grow and survive	8.L.3.3 8.L.5.1
Week 18	The Carbon Cycle	• Create a model and use it to explain the carbon cycle. • Explain the importance of the carbon cycle.	8.L.3.3 8.L.5.1
Week 19	Habitats and Niche	• Determine importance of abiotic factors in ecosystems. • Describe the nitrogen, carbon, and water cycles.	8.L.3.3

		• Distinguish between a niche, a habitat, and an ecosystem.	
Week 20	Trophic relationships	• Explain how trophic levels are decided. • Describe the different ways trophic levels are modeled. • Explain how populations on the same and different trophic levels interact.	8.L.3.2 8.L.5.1
Week 21	Adaptations	• Relate physical and behavioral adaptations to their function. • Explain how natural selection leads to species adaptation. • Distinguish between inherited and acquired behaviors. • Explain how natural selection leads to the evolution of organisms.	8.L.4.2
Week 22	Overpopulations	• Define overpopulation and explain how it happens. • Model overpopulation in a habitat and explain its effects. • Investigate how overpopulation can affect humans. • Recommend steps that can be taken to prevent or control overpopulation.	8.L.3.1
Week 23	Relationship amoung organisms	• Describe the flow of matter and energy through an ecosystem. • Explain the roles of producers, consumers, and decomposers in an ecosystem.	8.L.3.2 8.L.3.3 8.L.5.1

		• Compare the types of interactions that occur among organisms within an ecosystem. • Predict the existence of some local food webs. • Observe, record, and evaluate evidence of the existence of specific food chains within a local ecosystem.	
Week 24-25	Earth History Formation of The Eart	• Interpret evidence about the formation and early history of Earth. • Compare the methods scientists use to determine the age of rocks. • Identify evidence for the way Earth changes over time. • Explain how geologic principles can be applied to determining the age of rocks.	8.E.2.2
Week 26-27	Fossils and Earth's Past	• Define the term fossil and explain how fossils are formed. • Identify the major types of divisions of geologic time. • Use relative dating methods to place geologic events in a correct sequence. • Justify their choice to use absolute or relative dating techniques. • Explain how fossils provide evidence of evolution. • Explain how fossils provide evidence of past environmental changes.	8.E.2.1 8.E.2.2
Week 28-29	Earth's Waters Watersheds, Wetlands, and Estuaries	• Describe the major features of a river system, including the watershed, rivers, tributaries, estuaries, and wetlands. • Identify and describe features of their local watersheds.	8.E.1.1 8.E.1.2

		• Explain the ecological importance of wetlands and estuaries. • Relate causes and effects that impact water quality.	
Week 30	Water Quality	• Describe how various chemical, physical, and biological factors affect water quality and the health of an aquatic ecosystem. • Plan an investigation to test the water quality in a local waterway or aquarium.	8.E.2.1. 8.E.2.2
Week 31-32	Oceans	• Label, describe, and compare the layers of the ocean. • Describe how ocean technology has advanced over the years and how it has helped explore the ocean. • Explain how the ocean can be used as a resource.	8.E.1.2 8.E.1.4
Week 33	Oceanography	• Describe the physical and chemical characteristics of ocean water. • Explain how environmental conditions in different ocean layers support life. • Summarize evidence that Earth's oceans are a reservoir of nutrients, minerals, dissolved gases, and life forms.	8.E.2.1. 8.E.2.2
Week 34	Aquatic Biomes	• Compare the major types of aquatic biomes, including their physical characteristics. • Distinguish between the diverse organisms that live in aquatic biomes. • Describe examples of adaptations organisms have for surviving in aquatic habitats.	8.E.2.1. 8.E.2.2

Pacing Guide ***Science*** ***Parham***

Week 35-36	Health and Disease	• Describe disease-causing organisms. • Distinguish between bacteria, viruses, fungi, and protists. • Describe diseases caused by bacteria, viruses, fungi, and protists. • Explain how diseases are transmitted between organisms. • Explain how treatment and prevention are different or similar for diseases caused by bacteria, viruses, fungi, and protists. • Contrast infectious disease with other kinds of disease (for example, genetic, autoimmune). • Explain the principles of drug discovery and drug resistance. • Explain the difference between an epidemic and a pandemic as it relates to the spread, treatment, and prevention of disease.	8.L.5.2
Week 37	Resources and The Environment	• Assess the causes of land-use and environmental problems. • Categorize and compare the effects of environmental problems on ecosystems and biodiversity. • Evaluate design solutions people are using to solve environmental problems.	8.P.2.1
Week 38	Fossil Fuels	• Explain how the extraction, transportation, and burning of fossil fuels causes environmental pollution. • Relate climate change to the use of fossil fuels.	8.P.2.1
Week 39	Resource Management	• Analyze personal daily consumption of resources. • Weigh the costs and benefits of using renewable resources.	8.P.2.2

		• Weigh the costs and benefits of using nonrenewable resources.	
Week 40	Biotechnology	• Describe the benefits that agriculture systems provide to individuals and society. • Show how agricultural engineering processes improve food production and food quality. • Show how agricultural engineers must consider risks and benefits when developing agricultural techniques.	8.P.2.2