

Science: Grade 7

UNIT/Weeks	Timeline/Topics	Essential Questions
4	<p><u>Structures and Properties of Matter</u></p> <ul style="list-style-type: none"> • Atomic Structure • Molecular Structure • Properties of Matter 	<ul style="list-style-type: none"> • How is it that everything is made of star dust?
4	<p><u>Chemical Reactions</u></p> <ul style="list-style-type: none"> • Chemical Reactions • Conservation of Matter • Subatomic Particles • Valence Electrons 	<ul style="list-style-type: none"> • How do substances combine or change (react) to make new substances? • What happens to the atoms when you bake a cake? • How can a device that either releases or absorbs thermal energy by chemical processes be designed, constructed, tested, and modified?
4	<p><u>Structure and Function</u></p> <ul style="list-style-type: none"> • Cell Structure • Cell Function • Organelles 	<ul style="list-style-type: none"> • How do we recognize life? • How do cells contribute to the functioning of an organism?
4	<p><u>Body Systems</u></p> <ul style="list-style-type: none"> • Body Systems • Sense Receptors • Neurotransmitters 	<ul style="list-style-type: none"> • What are humans made of? • What is the evidence that a body is actually a system of interacting subsystems composed of groups of interacting cells? • How do organisms receive and respond to information from their environment?
5	<ul style="list-style-type: none"> • <u>Inheritance and Variation of Traits</u> • Inheritance • Genes • Genetic Mutations • Variation of Traits 	<ul style="list-style-type: none"> • Why do kids look similar to their parents? • How do structural changes to genes (mutations) located on chromosomes affect proteins or affect the

		<p>structure and function of an organism?</p> <ul style="list-style-type: none"> • How do asexual reproduction and sexual reproduction affect the genetic variation of offspring? • How does the biosphere affect other systems?
5	<p><u>Common Ancestry</u></p> <ul style="list-style-type: none"> • Evolutionary Relationships • Fossil Records • Homologous Structures • Embryological Structures 	<ul style="list-style-type: none"> • How do we know when an organism (fossil) was alive? • How do we know that birds and dinosaurs are related?
5	<p><u>Matter and Energy Flow in Organisms</u></p> <ul style="list-style-type: none"> • Photosynthesis • Cellular Respiration • Anaerobic Respiration • Aerobic Respiration 	<ul style="list-style-type: none"> • How do some organisms turn electromagnetic radiation into matter and energy? • What is the role of photosynthesis in the cycling of matter and flow of energy into and out of an organism? • How is food rearranged through chemical reactions to form new molecules that support growth and/or release energy as this matter moves through an organism?
5	<p><u>Weather and Climate</u></p> <ul style="list-style-type: none"> • Water Cycle • Air Masses • Atmospheric and Oceanic Circulations 	<ul style="list-style-type: none"> • What factors interact and influence weather and climate?