

Chapter Title	Chapter Description	Lesson Title	Lesson Description	Activity Code	Activity Title
Introduction to Living Things	Students will explore the characteristics of living things, life cycles, stimuli and behavior, and how organisms maintain homeostasis.				
		Characteristics of Living Things	Students will be able to differentiate between living and nonliving things based on characteristics common to living things, including growth and development, reproduction, cellular organization, use of energy, exchange of gases, and response to the environment.		
				MSSC165	Characteristics of Living Things
				MSSC634	Authentic Task: Viruses
				MSSC416	Odyssey Community: Is It Alive?
					Lesson Quiz: Characteristics of Living Things

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		Life Cycles	Students will be able to distinguish between the different life cycles of various organisms, including complete and incomplete metamorphosis and human life cycles.		
				MSSC166	Life Cycles
				MSSC721	Authentic Task: Life Cycle Examples
				MSSC516	Odyssey Writer: Research a Life Cycle
					Lesson Quiz: Life Cycles
		Stimuli and Behavior	Students will be able to predict how an organism will change its behavior given an external stimulus.		
				MSSC167	Stimuli and Behavior
				MSSC417	Odyssey Community: Pet Behavior
					Lesson Quiz: Stimuli and Behavior
		Homeostasis of Organisms and Feedback	Students will be able to predict how an organism's internal environment will respond given a stimulus.		

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				MSSC168	Homeostasis of Organisms and Feedback
					Lesson Quiz: Homeostasis of Organisms and Feedback
Cells	Students will investigate cell theory, prokaryotic and eukaryotic cells, cell structures, and basic functions such as photosynthesis, respiration, and homeostasis.				
		Cell Theory	Students will be able to explain the components of the scientific theory of cells (cell theory): all organisms are composed of cells (single celled or multicellular), all cells come from pre-existing cells, and cells are the basic unit of life.		
				MSSC169	Cell Theory
				MSSC454	Odyssey Community: Stem Cells

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				MSSC560	Odyssey Writer: STEM Careers: Microbiologist
					Lesson Quiz: Cell Theory
		Prokaryotic and Eukaryotic Cells	Students will be able to describe the structure and function of the nucleus and distinguish between a prokaryotic and eukaryotic cell.		
				MSSC170	Prokaryotic and Eukaryotic Cells
					Lesson Quiz: Prokaryotic and Eukaryotic Cells
		Cell Structures	Students will be able to describe the structure and function of cell membranes, cytoplasm, and mitochondria.		
				MSSC171	Cell Structures
				MSSC561	Odyssey Writer: Research: Mitochondria
					Lesson Quiz: Cell Structures

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		Plant and Animal Cells	Students will be able to describe the structure and function of cell walls, vacuoles, and chloroplasts, and distinguish between plant and animal cells.		
				MSSC172	Plant and Animal Cells
				MSSC418	Odyssey Community: Is This a Plant Cell or an Animal Cell?
				MSSC517	Odyssey Writer: Compare and Contrast: Plant and Animal Cells
					Lesson Quiz: Plant and Animal Cells
		Photosynthesis	Students will be able to explain how light energy is transferred to chemical energy through the process of photosynthesis.		
				MSSC173	Photosynthesis
				MSSC722	Authentic Task: Food from Sunlight
				MSSC455	Odyssey Community: What Would Earth Be Like Without Photosynthesis?
					Lesson Quiz: Photosynthesis

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		Cellular Respiration	Students will be able to describe and investigate how aerobic and anaerobic cellular respiration breaks down food to provide energy and releases carbon dioxide.		
				MSSC174	Cellular Respiration
					Lesson Quiz: Cellular Respiration
		Homeostasis of Cells	Students will be able to explain how cells of all organisms undergo similar processes to maintain homeostasis, including extracting energy from food, getting rid of waste, and reproducing.		
				MSSC175	Homeostasis in Cells
				MSSC562	Odyssey Writer: What Would the Cell Do?
					Lesson Quiz: Homeostasis of Cells

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Unicellular and Multicellular Organisms	Students will compare cells to organisms, and explore the similarities and differences between unicellular and multicellular organisms.				
		Cells and Organisms	Students will be able to compare life processes (e.g. growth, digestion) at the organism level with life processes at the cellular level.		
				MSSC176	Comparing Cells and Organisms
					Lesson Quiz: Cells and Organisms
		Unicellular Organisms	Students will be able to identify unicellular organisms, including bacteria and protists, by their methods of locomotion, reproduction, ingestion, excretion, and effects on other organisms.		
				MSSC177	Unicellular Organisms
				MSSC723	Authentic Task: Malaria
					Lesson Quiz: Unicellular Organisms

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		Multicellular Organisms	Students will be able to compare and contrast unicellular and multicellular organisms.		
				MSSC178	Multicellular Organisms
				MSSC419	Odyssey Community: Compare and Contrast: Unicellular vs. Multicellular
					Lesson Quiz: Multicellular Organisms
Ecology	Students will explore topics in ecology, including Earth's biomes, the importance of biodiversity, ecosystems, biotic and abiotic factors, habitats and niches, and how organisms interact.				
		Earth's Biomes	Students will be able to describe characteristics of Earth's major terrestrial and aquatic biomes.		
				MSSC179	Biomes

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				MSSC724	Authentic Task: Tropical Rainforest
				MSSC725	Authentic Task: Temperate Forest
				MSSC726	Authentic Task: Savannah
				MSSC727	Authentic Task: Desert
				MSSC728	Authentic Task: Mountain
				MSSC729	Authentic Task: Tundra
				MSSC730	Authentic Task: Freshwater
				MSSC731	Authentic Task: Ocean
				MSSC456	Odyssey Community: Protecting Earth's Biomes
					Lesson Quiz: Earth's Biomes
		Biodiversity	Students will be able to describe the importance of biodiversity and major threats to biodiversity.		
				MSSC457	Odyssey Community: Should We Prevent Living Things from Becoming Extinct?
				MSSC180	Importance of Biodiversity

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				MSSC732	Authentic Task: STEM Careers: Conservation Biologist
				MSSC563	Odyssey Writer: Researching Biodiversity
					Lesson Quiz: Biodiversity
		Ecosystems	Students will be able to distinguish between the biosphere, ecosystems, communities, populations, and organisms.		
				MSSC181	Ecosystems
				MSSC564	Odyssey Writer: How Do an Ecosystem and Its Communities Interact?
					Lesson Quiz: Ecosystems
		Biotic and Abiotic Factors	Students will be able to distinguish between biotic and abiotic factors in an ecosystem.		
				MSSC182	Biotic and Abiotic Factors in Ecosystems

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				MSSC565	Odyssey Writer: What Happens When Factors Change?
					Lesson Quiz: Biotic and Abiotic Factors
		Habitats and Niches	Students will be able to differentiate between habitats and niches.		
				MSSC458	Odyssey Community: Where Do Animals Live?
				MSSC183	Habitats and Niches
				MSSC733	Authentic Task: Extreme Habitats
				MSSC459	Odyssey Community: Living Things That Depend on One Another
					Lesson Quiz: Habitats and Niches
		Relationships Between Organisms	Students will be able to compare and contrast the relationships among organisms such as mutualism, predation, parasitism, competition, and commensalism.		
				MSSC184	Relationships Between Organisms
				MSSC734	Authentic Task: Lichen

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				MSSC735	Authentic Task: Amazing Parasites
				MSSC566	Odyssey Writer: Research a Symbiotic Relationship
					Lesson Quiz: Relationships Between Organisms
Population Ecology	Students will explore topics in population biology, including limiting factors, carrying capacity, population interactions, producers, consumers, decomposers, energy flow, and succession.				
		Limiting Factors in an Ecosystem	Students will be able to identify and describe the effects of limiting factors on a given population and evaluate the carrying capacity of an ecosystem.		
				MSSC185	Limiting Factors and Carrying Capacity
				MSSC460	Odyssey Community: A Carrying Capacity Scenario

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					Lesson Quiz: Limiting Factors in an Ecosystem
		Population Interactions	Students will be able to predict the impact of changes in a species' population on an ecosystem.		
				MSSC461	Odyssey Community: What Happens When There Are Too Many Rabbits?
				MSSC186	Interactions Between Populations
				MSSC567	Odyssey Writer: Case Study: the Kaibab Deer
					Lesson Quiz: Population Interactions
		Producers and Photosynthesis	Students will be able to describe how radiant energy from the Sun drives much of the flow of energy throughout living systems due to the process of photosynthesis in organisms described as producers.		
				MSSC187	Producers and Photosynthesis
					Lesson Quiz: Producers and Photosynthesis

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		Consumers	Students will be able to distinguish consumers from other organisms.		
				MSSC188	Consumers
				MSSC462	Odyssey Community: Examples of Consumers
					Lesson Quiz: Consumers
		Decomposers	Students will be able to distinguish decomposers from other organisms.		
				MSSC189	Decomposers
					Lesson Quiz: Decomposers
		Energy in Ecosystems	Students will be able to analyze the flow of energy through an ecosystem by creating food webs, food chains, and energy pyramids.		
				MSSC190	Energy in Ecosystems
				MSSC568	Odyssey Writer: Describing the Energy Flow in an Ecosystem
					Lesson Quiz: Energy in Ecosystems

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		Matter in Ecosystems	Students will be able to diagram the flow of matter through ecosystems, including the carbon cycle, nitrogen cycle, and exchange of oxygen and carbon dioxide with the atmosphere.		
				MSSC191	Matter in Ecosystems
				MSSC463	Odyssey Community: How Do We Know Matter Moves Through Ecosystems?
					Lesson Quiz: Matter in Ecosystems
		Ecological Succession	Students will be able to define ecological succession and sequence the process of succession in a given ecosystem.		
				MSSC192	Ecological Succession
				MSSC569	Odyssey Writer: The Changing Face of the Forest
					Lesson Quiz: Ecological Succession

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Genetics	Students will investigate how organisms pass on their genes. Topics include reproduction, mitosis and meiosis, genotypes and phenotypes, Punnett squares, genetic disorders, and selective breeding.				
		Sexual and Asexual Reproduction	Students will be able to compare and contrast asexual and sexual reproduction.		
				MSSC193	Sexual and Asexual Reproduction
				MSSC736	Authentic Task: Engineering and Technology: Cloning
					Lesson Quiz: Sexual and Asexual Reproduction
		Heredity, Genes, and Chromosomes	Students will be able to define heredity and explain the role of genes and chromosomes in the process of inheriting a specific trait.		
				MSSC464	Odyssey Community: Where Do You Get Your Traits From?

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				MSSC194	Heredity, Genes, and Chromosomes
				MSSC737	Authentic Task: STEM Careers: Forensic Scientist
					Lesson Quiz: Heredity, Genes, and Chromosomes
		Mitosis	Students will be able to describe how cells divide to increase their numbers through the process of mitosis, and sequence the steps of mitosis.		
				MSSC195	Mitosis
				MSSC738	Authentic Task: Cell Cultures - HeLa and Henrietta Lacks
					Lesson Quiz: Cell Reproduction
		Meiosis	Students will be able to contrast the processes of mitosis and meiosis in relation to growth, repair, reproduction, and heredity.		
				MSSC196	Meiosis
				MSSC570	Odyssey Writer: Summarizing Meiosis

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				MSSC465	Odyssey Community: What Happens if There Is an Error in Meiosis?
					Lesson Quiz: Meiosis
		Genotypes and Phenotypes	Students will be able to identify the phenotype of an organism based on its genotype.		
				MSSC197	Genotypes and Phenotypes
				MSSC739	Authentic Task: Gregor Mendel
					Lesson Quiz: Genotypes and Phenotypes
		Predicting Inheritance	Students will be able to use a monohybrid Punnett square to predict the probability of traits passed from parents to offspring.		
				MSSC198	Punnett Squares and Genetic Crosses
				MSSC518	Odyssey Writer: Completing a Punnett Square
					Lesson Quiz: Predicting Inheritance

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		Genetic Disorders	Students will be able to distinguish between genetic disorders due to errors in meiosis and those due to combinations of genes from each parent.		
				MSSC199	Genetic Disorders
					Lesson Quiz: Genetic Disorders
		DNA	Students will be able to compare and contrast DNA and RNA.		
				MSSC200	DNA
				MSSC635	Authentic Task: Discovery of DNA
					Lesson Quiz: DNA
		Selective Breeding	Students will be able to describe how organisms can be selectively bred for particular traits.		
				MSSC201	Selective Breeding
				MSSC571	Odyssey Writer: Selection of Plants for Food
				MSSC636	Authentic Task: Genetic Engineering
					Lesson Quiz: Selective Breeding

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Evolution	Students will explore the theory of evolution. Topics include the diversity of life, mutation, variation, adaptation, natural selection, evidence for evolution, tree diagrams, and extinction.				
		Evolution and Diversity	Students will be able to describe how organisms can change over time in response to environmental factors.		
				MSSC466	Odyssey Community: What Have You Heard About Evolution?
				MSSC202	Evolution and Diversity
				MSSC740	Authentic Task: Tree of Life
					Lesson Quiz: Evolution and Diversity

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		Mutation and Variation	Students will be able to describe how mutation causes variation in a population, and how species vary based on factors such as climate, changing landforms, interspecies interaction, and genetic mutation.		
				MSSC203	Mutation and Variation
				MSSC467	Odyssey Community: How Are Humans Varied?
				MSSC572	Odyssey Writer: Consequences of Isolated Populations
					Lesson Quiz: Mutation and Variation
		Adaptation	Students will be able to differentiate between physical and behavioral adaptations in a variety of organisms.		
				MSSC468	Odyssey Community: What Makes This Animal Adapted to Its Environment?
				MSSC204	Adaptation

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				MSSC573	Odyssey Writer: How Are Organisms Adapted to Their Environments?
					Lesson Quiz: Adaptation
		Natural Selection	Students will be able to explain how reproductive success coupled with advantageous traits over many generations contributes to natural selection.		
				MSSC741	Authentic Task: Darwin's Theory of Evolution Through Natural Selection
				MSSC469	Odyssey Community: Darwin and Wallace: Who Should Get the Credit?
				MSSC205	Natural Selection
				MSSC742	Authentic Task: Natural Selection Activity
				MSSC470	Odyssey Community: What Happens to a Species When the Environment Changes?
				MSSC471	Odyssey Community: Island Organisms

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					Lesson Quiz: Natural Selection
		Evidence for Evolution	Students will be able to describe how fossil evidence and comparative anatomy provide evidence for evolution.		
				MSSC206	Evidence for Evolution
				MSSC743	Authentic Task: STEM Careers: Evolutionary Biologist
					Lesson Quiz: Evidence for Evolution
		Evolutionary Trees	Students will be able to construct a simple branching diagram to classify living groups of organisms by shared derived characteristics and expand the diagram to include fossil organisms.		
				MSSC207	Evolutionary Trees
				MSSC744	Authentic Task: Human Evolutionary Tree

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				MSSC472	Odyssey Community: Why Is it Misleading to Say That Humans Evolved from Chimpanzees?
					Lesson Quiz: Evolutionary Trees
		Extinction	Students will be able to explain why the extinction of a species may occur when the environment changes.		
				MSSC208	Extinction
				MSSC745	Authentic Task: Death of the Dinosaurs
					Lesson Quiz: Extinction
Classification	Students will explore how organisms can be classified. Topics include domains and kingdoms and dichotomous keys.				
		Domains and Kingdoms	Students will be able to describe how living things are classified into domains and kingdoms.		
				MSSC420	Odyssey Community: Why Classify?
				MSSC209	Domains and Kingdoms
				MSSC746	Authentic Task: Bizarre Bacteria

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				MSSC637	Authentic Task: Domains of Life
				MSSC519	Odyssey Writer: Kingdoms vs. Domains?
					Lesson Quiz: Domains and Kingdoms
		Classification of Life	Students will be able to analyze how organisms can be classified by family, genus, and species.		
				MSSC210	Classification of Life
					Lesson Quiz: Classification of Life
		Dichotomous Keys	Students will be able to classify an organism based on its physical characteristics using a dichotomous key.		
				MSSC211	Dichotomous Keys
				MSSC473	Odyssey Community: Practice With Classification
				MSSC574	Odyssey Writer: Describe a Classification System
					Lesson Quiz: Dichotomous Keys

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Organs and Organ Systems	Students will explore the levels of organization within living things with special focus on human body systems.				
		Levels of Organization in Living Things	Students will be able to distinguish between cells, tissues, organs, and organ systems.		
				MSSC212	Levels of Organization in Living Things
					Lesson Quiz: Organization in Living Things
		Integumentary System	Students will be able to relate the structure and function of the integumentary system.		
				MSSC474	Odyssey Community: Why Are Muscles, Skin, and Bones Important?
				MSSC213	Integumentary System
				MSSC575	Odyssey Writer: Skin Cancer
					Lesson Quiz: Integumentary System
		Skeletal and Muscular Systems	Students will be able to relate the structure and function of the skeletal and muscular systems.		

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				MSSC214	Skeletal and Muscular Systems
				MSSC638	Authentic Task: Joints
					Lesson Quiz: Skeletal and Muscular Systems
		Circulatory System	Students will be able to relate the structure and function of the circulatory system.		
				MSSC215	Circulatory System
				MSSC747	Authentic Task: STEM Careers: Heart Surgeon
					Lesson Quiz: Circulatory System
		Respiratory System	Students will be able to relate the structure and function of the respiratory system.		
				MSSC216	Respiratory System
				MSSC576	Odyssey Writer: Smoking
					Lesson Quiz: Respiratory System
		Digestive System	Students will be able to relate the structure and function of the digestive system.		
				MSSC217	Digestive System
				MSSC748	Authentic Task: Gut Bacteria!
					Lesson Quiz: Digestive System

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		Excretory System	Students will be able to relate the structure and function of the excretory system.		
				MSSC218	Excretory System
					Lesson Quiz: Excretory System
		Nervous System	Students will be able to relate the structure and function of the nervous system.		
				MSSC219	Nervous System
				MSSC749	Authentic Task: The Human Brain
					Lesson Quiz: Nervous System
		Endocrine System	Students will be able to relate the structure and function of the endocrine system.		
				MSSC220	Endocrine System
					Lesson Quiz: Endocrine System
		Reproductive Systems	Students will be able to relate the structure and function of the reproductive system.		
				MSSC221	Reproductive Systems

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				MSSC750	Authentic Task: Engineering and Technology: In Vitro Fertilization
					Lesson Quiz: Reproductive Systems
		Disease and the Immune System	Students will be able to relate the structure and function of the immune system.		
				MSSC475	Odyssey Community: A Time When You Were Sick
				MSSC222	Disease and the Immune System
				MSSC751	Authentic Task: HIV/AIDS
					Lesson Quiz: Disease and the Immune System
Human Health	Students will explore what factors impact human health, and how to stay healthy.				

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		Staying Healthy	Students will be able to distinguish between communicable and noncommunicable diseases, and describe factors that affect the length and quality of human life.		
				MSSC752	Authentic Task: Nutrition
Plants	Students will explore plant structures, life functions, and how plants reproduce.				
		Plant Structures	Students will be able to relate the structure and function of leaves, stems, and roots.		
				MSSC224	Plant Structures
				MSSC753	Authentic Task: Amazing Plants
				MSSC520	Odyssey Writer: Vegetable Function and Structure
					Lesson Quiz: Plant Structures
		Plant Reproduction	Students will be able to describe how flowering plants reproduce and how tropism effects the growth of seedlings.		

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				MSSC225	Plant Reproduction
				MSSC754	Authentic Task: Pollination
					Lesson Quiz: Plant Reproduction