

Chart of Science Curriculum Strands - Grade 6 through Grade 8 - Areas of Concentration

Grade 6			Grade 7			
Earth Science	Plate Tectonics	Know and understand that plate tectonics accounts for important features of Earth's surface and major geologic events.	Life Science	Biology	Know and understand that all living organisms are composed of cells, from just one to many trillions, whose details usually are visible only through a microscope. All living things are classified and grouped according to their characteristics and evolutionary relationships. Know and understand the following:	Motion
	Oceanography	Know and understand that oceans are large masses of salt water that cover more than 70% of the Earth's surface, that they retain heat much longer than air or smaller masses of fresh water and that they moisten the air that passes over them. Know and understand that the ocean floor is divided into regional divisions.		Structure on Function in Living Systems	Botany: Plants have shared characteristics, which include: making their own food, have a cuticle, reproduce with spores or sex cells, and have cells with cell walls. Seedless plants include the nonvascular mosses and liverworts and the vascular ferns, horsetails, and club mosses. Plants with seeds include the vascular gymnosperms and angiosperms. The physical structures and functions of a plant's root and shoot system are related.	
	Earth and Life History	Know and understand that evidence from rocks allows us to understand the evolution of life on Earth.			Human Biology: The human body is organized. Cells make up the four tissue types (connective, muscle, cardiac, epithelial, which are organized into organs, which are arranged into 11 systems. The integumentary system includes skin, hair and nails. The skeletal system includes bones, cartilage and special structures. The muscular system is comprised of different types of muscle and connective tissue. The cardiovascular system transports materials to and from your cells. The cardiovascular system is made up of three parts: blood, the heart, and blood vessels. The lymphatic system collects the excess fluid and returns it to your blood. Plants and animals have structures for respiration, waste disposal and transport of materials. The respiratory system consists of the lungs, throat, and passageways that lead to the lungs. The nervous system gathers and interprets information about the body's internal and external environments and responds to	Structure of Matter
	Weathering	Know and understand that topography is reshaped by the weathering of rock and soil and by the transportation and deposition of sediment.		Genetics	Know and understand that a typical cell of any organism contains genetic instructions that specify its traits. Those traits may be modified by environmental influences.	
			Physical Science			

	Astronomy	Know and understand that the structure and composition of the universe can be learned from studying stars and galaxies and their evolution.		Evolution	Know and understand that the theory of Biological evolution accounts for the diversity of species developed through gradual processes over many generations.		Reactions
	Solar Energy	Know and understand that the Sun is a constant, close-to-uniform source of energy that is responsible for the climate and weather, drives the water cycle, and makes life possible on Earth.		Ecology	Know and understand that organisms in ecosystems exchange energy and nutrients among themselves and with the environment.		Chemistry of Living System
	Thermal Energy	Know and understand that heat moves in a predictable flow from warmer objects to cooler objects until all the objects are at the same temperature.		Oceanography	Know and understand that within the ocean are many kinds of ecosystems that can be classified according to depth.		Physical Principles in Living System
	Natural Resources	Know and understand that sources of energy and materials differ in amounts, distribution, usefulness, and the time required for their formation.					Density, Buoyancy, Fluids and Pressures
							Waves
Stewardship/ Environmental Science		Know and understand that all people have a responsibility to use resources in a manner that prevents harm to the environment and provides for those who will need the resources in the future.	Stewardship/ Environmental Science		Know and understand that we are all given the gift of life, and the care of that gift is entrusted to us and nurtured by making positive choices that do not cause our bodies harm.	Stewardship/ Environmental Science	
Health Science		Enhance and maintain their health and well-being.	Health Science		Make healthy life choices in the areas of nutrition, drugs, tobacco, alcohol and sexual behavior. Prevent and control of communicable and non-communicable diseases. Know and understand that with the changes brought by puberty, personal hygiene needs will be different from the needs of childhood.	Health Science	

Investigation and Experimentation		<p>Perform investigations of the concepts listed above and know and understand the following: Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the above standards, develop their own questions and perform investigations. Develop a hypothesis. Select and use appropriate tools and technology (including calculators, computers, balances, spring scales, microscopes, and binoculars) to perform tests, collect data, and accurately create and display data. Read a topographic map and a geologic map for evidence provided on the maps and construct and interpret a simple scale map. Interpret events by sequence and time from natural phenomena (e.g., the relative ages of rocks and intrusions).</p>	Investigation and Experimentation		<p>Perform investigations of the concepts listed above and know and understand the following: Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the above standards, develop their own questions and perform investigations. Know how to use a variety of print and electronic resources (including the World Wide Web) to collect information and evidence as part of a research project. Know to communicate the logical connection among hypotheses, science concepts, tests conducted, data collected, and conclusions drawn from the scientific evidence. Know how to communicate the steps and results from an investigation in written reports and oral presentations. Select and use appropriate tools and technology (including calculators, computers, balances, spring scales, microscopes, and binoculars) to perform tests, collect data, and accurately create and display data. Know how to construct appropriate graphs from data and develop relationships between variables. Create and accurately construct scale models, maps, and appropriately labeled diagrams to communicate scientific knowledge (e.g. cell structure). Draw accurate pictures that portray some features of the object being observed or investigated. Know and understand that scientists are continuing to make major discoveries and breakthroughs in all areas of science."</p>	Investigation and Experimentation	
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