Snapshot
Grade 6 Science

We Transform the World! CATHOLIC SCHOOLS

Catholic Identity Standards		
6.1	**Catholic identity standards.** The student understands and integrates the content of what is learned into their faith and daily life.*	
Ways to Grow	6.1(VL) S.K6 DSI(CNS)	display a deep sense of wonder and delight about the natural universe *
	6.1(VL) S.K6 GS2(CNS)	describe the unity of faith and reason *
	6.1(VL) S.K6 IS2(CNS)	describe relationships, elements, underlying order, harmony, and meaning *
	6.1(VL) S.K6 DS2(CNS)	share concern and care for the environment as part of God's creation *

Learning Process Standards			
6.2	**Learning process standards.** The student uses scientific practices during laboratory and scientific investigations and uses critical thinking and scientific problem solving to make informed decisions. The student will explain how science limits its focus to "how" things physically exist and is not designed to answer issues of meaning, the value of things, or the mysteries of the human person.* The student will list the basic contributions of significant Catholics to science.*		
Tools to Know		**Ways to Show**	
6.2A	plan and conduct investigations	6.2C	record and organize data and observations
6.2B	collect information using appropriate scientific tools	6.2D	communicate observations about investigations
		6.2E	represent the natural world using models

Elements and Compounds			
6.3i	**Matter and energy.** The student knows the differences between elements and compounds.		
Applied Standards		**Supporting Standards**	
6.3A	know that an element is a pure substance represented by a chemical symbol and that a compound is a pure substance represented by a chemical formula	6.3A.1	recognize that a limited number of the many known elements comprise the largest portion of solid Earth, living matter, oceans, and the atmosphere
6.3B	identify the formation of a new substance by using the evidence of a possible chemical change such as production of a gas, change in temperature, production of a precipitate, or color change		

Physical Properties of Matter			
6.3ii	**Matter and energy.** The student knows matter has physical properties that can be used for classification.		
6.3C	compare metals, nonmetals, and metalloids using physical properties such as luster, conductivity, or malleability	6.3C.1	test the physical properties of minerals, including hardness, color, luster, and streak
6.3D	calculate density to identify an unknown substance		

Earth's Resources			
6.3iii	**Matter and energy.** The student knows that some of Earth's energy resources are available on a nearly perpetual basis, while others can be renewed over a relatively short period of time. Some energy resources, once depleted, are essentially nonrenewable.		
6.3E	research and discuss the advantages and disadvantages of using coal, oil, natural gas, nuclear power, biomass, wind, hydropower, geothermal, and solar resources	6.3E.1	explain the processes of conservation, preservation, overconsumption, and stewardship in relation to caring for that which God has given us*

Force, Motion, Potential Energy, and Kinetic Energy			
6.4i	**Force, motion, and energy.** The student knows force and motion are related to potential and kinetic energy.		
6.4A	compare and contrast potential and kinetic energy		
6.4B	calculate average speed using distance and time measurements	6.4B.1	identify and describe the changes in position, direction, and speed of an object when acted upon by unbalanced forces

		6.4B.2	measure and graph changes in motion
		6.4B.3	investigate how inclined planes can be used to change the amount of force to move an object

Law of Conservation of Energy			
6.4ii	**Force, motion, and energy.** The student knows that the Law of Conservation of Energy states that energy can neither be created nor destroyed, it just changes form.		
6.4C	investigate methods of thermal energy transfer, including conduction, convection, and radiation	6.4C.1	verify through investigations that thermal energy moves in a predictable pattern from warmer to cooler until all the substances attain the same temperature such as an ice cube melting
6.4D	demonstrate energy transformations such as energy in a flashlight battery changes from chemical energy to electrical energy to light energy		

Structure of Earth			
6.5i	**Earth and space.** The student understands the structure of Earth, the rock cycle, and plate tectonics. The student will explain what it means to say that God created the world, and all matter out of nothing at a certain point in time; how it manifests His wisdom, glory, and purpose; and how He holds everything in existence according to His plan.*		
6.5A	classify rocks as metamorphic, igneous, or sedimentary by the processes of their formation		
6.5B	build a model to illustrate the compositional and mechanical layers of Earth, including the inner core, outer core, mantle, crust, asthenosphere, and lithosphere		
6.5C	describe and relate how plate tectonics causes major geological events such as ocean basin formation, earthquakes, volcanic eruptions, and mountain building	6.5C.1	identify the major tectonic plates, including Eurasian, African, Indo-Australian, Pacific, North American, and South American

Organization of the Solar System			
6.5ii	**Earth and space.** The student understands the organization of our solar system and the relationships among the various bodies that comprise it. The student displays a sense of wonder and delight about the natural universe and its beauty.*		
6.5D	describe the physical properties, locations, and movements of the Sun, planets, moons, meteors, asteroids, and comets	6.5D.1	understand that gravity is the force that governs the motion of our solar system
6.5E	describe the history and future of space exploration, including the types of equipment and transportation needed for space travel		

Classifications of Organisms			
6.6	**Organisms and environments.** The student knows all organisms are classified into domains and kingdoms. Organisms within these taxonomic groups share similar characteristics that allow them to interact with the living and nonliving parts of their ecosystem.		
6.6A	identify the basic characteristics of organisms, including prokaryotic or eukaryotic, unicellular or multicellular, autotrophic or heterotrophic, and mode of reproduction, that further classify them in the currently recognized kingdoms	6.6A.1 6.6A.2 6.6A.3	understand that all organisms are composed of one or more cells recognize that the presence of a nucleus is a key factor used to determine whether a cell is prokaryotic or eukaryotic recognize that the broadest taxonomic classification of living organisms is divided into currently recognized domains
6.6B	diagram the levels of organization within an ecosystem, including organism, population, community, and ecosystem	6.6B.1	describe biotic and abiotic parts of an ecosystem in which organisms interact