

Domain	Content Standard	Performance Benchmark	IPS Ch 1	IPS Ch. 2	IPS Ch. 3	IPS Ch. 4	IPS Ch5	IPS Ch6	IPS Ch. 7	IPS Ch. 8	IPS Ch. 9	IPS Ch. 10	IPS Ch. 11	IPS Ch. 12	FM&E Ch. 1	FM&E Ch. 2	FM&E Ch. 3	FM&E Ch. 4	FM&E Ch. 5	FM&E Ch. 6	FM&E Ch. 7
		PO 2. Compare the goals of science and the goals of technology																			
		PO 3. Describe the impact of technology on the life, physical, earth and space sciences				X			X											X	
	* 3SC-P4. Identify and describe the basic processes of the natural ecosystems and how these processes affect, and are affected by, humans	PO 1. Describe the basic processes of the natural ecosystems (e.g., water cycle, nutrient cycles)																			
		PO 2. Explain how these processes affect, and are affected by, humans																			
	* 3SC-P5. Describe and explain factors that affect population size and growth (e.g., birth and death rates, quality of environment, disease, education)	PO 1. Describe biotic and abiotic factors that affect populations																			
		PO 2. Predict the effect of a change in a specific factor on a population																			
Standard 5 : Physical Science	ESSENTIALS (Grades 4-8) Students know and are able to do all of the above and the following:	PO 1. Classify objects and mixtures of substances based on physical and chemical properties																			
Students understand the nature of matter and energy including their forms, the changes they undergo and their interactions.	* 5SC-E1. Examine, describe, compare, measure, and classify objects and mixtures of substances based on common physical and chemical properties (e.g., states of matter, mass, volume, electrical charge, density, boiling points, pH, magnetism, solubility)				X																
		PO 2. Analyze physical and chemical properties of objects and mixtures			X	X	X	X													
	* 5SC-E2. Classify and describe matter in terms of elements, compounds, mixtures, atoms and molecules	PO 1. Classify matter in terms of elements, compounds, mixtures, atoms and molecules					X	X		X	X		X	X							
		PO 2. Describe elements, compounds, mixtures, atoms and molecules as they relate to matter					X	X		X	X		X	X							
	* 5SC-E3. Show that energy exists in many forms and can be transferred in many ways	PO 1. Define the law of conservation of energy																			X
		PO 2. Describe how energy is a property of a substance																		X	X
		PO 3. Explain ways in which energy is transferred																	X	X	X

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		PO 2. Predict the outcome when matter experiences an external force or energy change																		X	X	X
	* 5SC-E5. Describe, measure and calculate characteristics (e.g., speed, distance, mass, force, gravity) of moving objects and their interactions (e.g., force, velocity, acceleration, potential energy, and kinetic energy) within a system	PO 1. Analyze moving objects within a system using Newton's laws of motion													X		X					
	PROFICIENCY (Grades 9-12) <i>Students know and are able to do all of the above and the following:</i> * 5SC-P1. Predict chemical and physical properties of substances (e.g., color, solubility, chemical reactivity, melting point, boiling point)	PO 1. Describe physical and chemical properties that are used to characterize substances		X	X			X														
		PO 2. Determine physical and chemical properties of a substance through observation, measurement and experimentation		X	X	X	X	X														
		PO 3. Separate mixtures of substances based on their physical and chemical properties					X															
	* 5SC-P2. Describe and explain properties and composition of samples of matter, using models (including atomic and molecular structure and the periodic table)	PO 1. Use models of atomic and molecular structure to explain properties of matter								X	X		X	X								
		PO 2. Use the periodic table to predict properties of elements and compounds																				
		PO 3. Predict the properties of substances based upon ionic, covalent, or hydrogen bonding												X								
	* 5SC-P3. Identify, measure, calculate, and analyze qualitative and quantitative relationships associated with energy forms and energy transfer or transformation (e.g., changes in temperature, velocity, potential energy, kinetic energy, conduction, convection, radiation)	PO 1. Identify qualitative and quantitative relationships associated with energy (e.g., heat, mechanical, electrical)																		X	X	X
		PO 2. Measure quantitative (e.g., heat, mechanical, electrical) relationships associated with energy																		X	X	X

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		PO 2. Describe a sequence of events that illustrates the 2nd Law of Thermodynamics																			