Introductory Physical Science (7th and 8th editions) & _Force, Motion, and Energy_ – Alignment with South Carolina Science Curriculum Standards
Grade 7 – November 2005

Standard	Indicators	IPS7 IPS8 Ch. 1	IPS7 IPS8 Ch. 2	IPS7 IPS8 Ch. 3	IPS7 IPS8 Ch. 4	IPS7 IPS8 Ch. 5	IPS7 IPS8 Ch. 6	IPS7 IPS8 Ch. 7	IPS7 IPS8 Ch. 8	IPS7 IPS8 Ch. 9	IPS7 IPS8 Ch. 10	IPS7 Ch. 11	IPS7 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
Scientific Inquiry 7-1: The student will demonstrate an understanding of technological design and scientific inquiry, including process skills, mathematical thinking, controlled investigative design and analysis, and problem solving.	1. Use appropriate tools and instruments safely and accurately when conducting a controlled scientific investigation.		X X	X X	X X	X X	X X	X X	X X	X X	X	X	X	X	X	X	X	X	X	X
	2. Generate questions that can be answered through scientific investigation.	X X	X X	X X	X X	X X	X X	X X	X X	X X	X	X	X	X	X	X	X	X	X	X
	3. Explain the reasons for testing one independent variable at a time in a controlled scientific investigation.		X X	X X	X X	X X	X X	X X	X X	X X	X	X	X	X	X	X	X	X	X	X
	4. Explain the importance of that repeated trials and a well-chosen sample size have with regard to the validity of a controlled scientific investigation.		X X	X X	X X	X X	X X	X X	X X	X X	X	X	X	X	X	X	X	X	X	X
	5. Explain the relationships between independent and dependent variables in a controlled scientific investigation through the use of graphs, tables and charts.		X X	X X	X X	X X	X X	X X	X X	X X	X	X	X	X	X	X	X	X	X	X

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	6. Critique a conclusion drawn from a scientific investigation.	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X	X	X	X	X	X	X	X	X
	7. Use appropriate safety procedures when conducting investigations.	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X	X	X	X	X	X	X	X	X
Chemical Nature of Matter 7-5: The student will demonstrate an understanding of the classification and properties of matter and the changes that matter undergoes.	1. Recognize that matter is composed of extremely small particles called atoms.								X X											
	2. Classify matter as element, compound, or mixture on the basis of its composition.						X X													
	3. Compare the physical properties of metals and non metals.																			
	4. Use the periodic table to identify the basic organization of elements and groups of elements.										X									
	5. Translate chemical symbols and the chemical formulas of common substances to the component parts of the substance.										X									
	6. Distinguish between acids and basis and use indicators to determine their relative pH.																			
	7. Identify the reactants and products in chemical equations.	X X	X X	X X	X X	X X	X X					X X	X X							

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	8. Explain how a balance chemical equation supports the law of conservation of matter.																			
	9. Compare the physical properties of matter to the chemical property of reactivity with a certain substance.																			
	10. Compare physical change to chemical changes that are the result of chemical reactions.																			

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Scientific Inquiry 8-1: The student will demonstrate an understanding of technological design and scientific inquiry	1. Design a controlled scientific investigation		X X	X X	X X	X X	X X	X X				X	X	X	X	X	X	X	X	X
	2. Recognize the importance of a systematic process for safely and accurately conducting investigations.	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X	X	X	X	X	X	X	X	X
	3. Construct explanations and conclusions from interpretations of data obtained during a controlled scientific investigation.	X X	X X	X X	X X	X X	X X	X X				X	X	X	X	X	X	X	X	X
	4. Generate questions for further study on the basis of prior investigations	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X	X	X	X	X	X	X	X	X
	5. Explain the importance of and requirements for replication of scientific investigations.	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X	X	X	X	X	X	X	X	X
	6. Use appropriate tools and instruments safely and accurately when conducting a controlled scientific investigation.	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X	X	X	X	X	X	X	X	X
	7. Use appropriate safety procedures when conducting investigations.	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X	X	X	X	X	X	X	X	X

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Forces and Motion 8-5: The student will demonstrate an under-standing of the effects of forces on the motion of an object.	1. Use measurement and time-distance graphs to represent the motion of an object in terms of its position, direction, or speed.																X			
	2. Use the formula for average speed, v=d/t, to solve real-world problems.																X			
	3. Analyze the effects of forces on the speed and direction of an object.													X		X				
	4. Predict how varying the amount of force or mass will affect the motion of an object.															X				
	5. Analyze the resulting effect of balanced and unbalanced forces on an object's motion in terms magnitude and direction.													X		X				
	6. Summarize and illustrate the concept of inertia.															X				
Waves 8-6: The student will demonstrate an understanding of the	1. Recall that waves transmit energy but not matter.																	X		
	2. Distinguish between mechanical and electromagnetic waves.																	X		
	3. Summarize factors that influence the basic properties of waves.																	X		
	4. Summarize factors the behaviors of waves.																	X		
	5. Explain hearing in terms of the relationship between sound and the ear.																			

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	6. Explain sight in terms of the relationship between the eye and the light waves emitted or reflected by an object.																			
	7. Explain how the absorption and reflection of light waves by various materials result in the human perception of color.																			
	8. Compare the wavelength and energy of waves in various parts of the electromagnetic spectrum.																			