

Introductory Physical Science (7th and 8th editions) & Force, Motion, and Energy – Alignment with Massachusetts Science Learning Standards
 Grades 6-8 – October, 2006

Topic	Learning Standard	IPS7	IPS7	IPS7	IPS7	IPS7	IPS7	IPS7	IPS7	IPS7	IPS7	IPS7	IPS7	FM	FM	FM	FM	FM	FM	FM		
		IPS8 Ch. 1	IPS8 Ch. 2	IPS8 Ch. 3	IPS8 Ch. 4	IPS8 Ch. 5	IPS8 Ch. 6	IPS8 Ch. 7	IPS8 Ch. 8	IPS8 Ch. 9	IPS8 Ch. 10	Ch. 11	Ch. 12	Ch. 1	Ch. 2	Ch. 3	Ch. 4	Ch. 5	Ch. 6	Ch. 7		
Properties of Matter	1. Differentiate between weight and mass, recognizing that weight is the amount of gravitational pull on an object.													X								
	2. Differentiate between volume and mass. Define density.	X X	X X	X X																		
	3. Recognize that the measurement of volume and mass requires understanding of the sensitivity of measurement tools (e.g., rulers, graduated cylinders, balances) and knowledge and appropriate use of significant digits.	X X	X X	X X																		
	4. Explain and give examples of how mass is conserved in a closed system.		X X	X X		X X	X X		X X													
Elements, Compounds and Mixtures	5. Recognize that there are more than 100 elements that combine in a multitude of ways to produce compounds that make up all of the living and nonliving that we encounter.							X X		X X	X X											
	6. Differentiate between an atom (the smallest unit of an element that maintains the characteristics of that element) and a molecule (the smallest unit of a compound that maintains the characteristics of that compound).									X X	X X											
	7. Give basic examples of elements and compounds.						X X		X X													
	8. Differentiate between mixtures and pure substances			X X	X X	X X																

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Elements, Compounds and Mixtures (continued)	9. Recognize that a substance (element or compound) has a melting point, both of which are independent of the amount of the sample.			X	X	X														
	10. Differentiate between physical changes and chemical changes.		X	X	X	X	X													
Motion of Objects	11. Explain and give examples of how the motion of an object can be described by its position, direction of motion and speed.															X	X	X		
	12. Graph and interpret distance vs. time graphs for constant speed.																X			
Forms of Energy	13. Differentiate between potential and kinetic energy. Identify situations where kinetic energy is transformed into potential energy and vice versa.																			X
Heat Energy	14. Recognize that heat is a form of energy and that temperature change results from adding or taking away heat.																		X	X
	15. Explain the effect of heat on particle motion through a description of what happens to particles during a change in phase.																			
	16. Give examples of how heat moves in predictable ways, moving from warmer objects to cooler ones until they reach equilibrium.																		X	