

Course Syllabus McDougall-Littell (2006)

Chapter	Objective(s)	Labs
1 Introduction to Matter	2: Investigate how a pure substance can be distinguished from another based on characteristic properties.	Mixtures, Compounds & Elements (MCE) 1.1 Finding the Conductor 1.4 Separating Mixtures
2 Properties of Matter	3: Conduct investigations to differentiate among compounds, mixtures, and solutions. 5: Observe and analyze characteristic properties of substances before & after substances combine to determine if a chemical or physical reaction has occurred	MCE 1.2 Filtering a Mixture 1.8 Mixing Solutions
3 Energy	13: Create and analyze displays of data illustrating the relationships of kinetic energy to the mass & speed of an object. 14: Use models to explain how a system of objects may contain	GPE/KE Lab

	<p>varying types and amounts of potential energy.</p> <p>16: Apply the Law of Conservation of Energy to develop arguments supporting the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.</p>	
4 Temperature & Heat	<p>15: Analyze & interpret data to determine how various factors affect energy transfer as measured by temperature.</p> <p>4: Investigate & determine changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.</p>	<p>Make a thermometer lab or teacher demonstration</p> <p>MCE 5.1 Changing Mixtures</p>
5 Atomic Structure & the Periodic Table	<p>1: Analyze patterns within the periodic table to construct models.</p>	Atomic Bohr Models

6 Chemical Bonds & Compounds	1: Analyze patterns within the periodic table to construct models.	Electron Dot Diagrams & Atomic Molecular Models
7 Chemical Reactions	6: Create a model diagram or simulation to describe the Law of Conservation of Mass in chemical reactions and explain the resulting differences between products & reactants	Electrolysis Balance Chemical Reactions
8 Solutions	5: Observe and analyze characteristic properties of substances before & after substances combine to determine if a chemical or physical reaction has occurred 7: Design, construct, & test a device that either releases or absorbs thermal energy by chemical reactions.	MCE 5.1 Changing Mixtures 5.3 Solid Solutions
10 Motion	9: Use Newton's 2 nd Law of Motion to explain how changes in an object's motion depend on the sum of the external forces on	

	the object and the mass of the object.	
11 Forces	<p>8: Use Newton's 1st Law of Motion to demonstrate that an object is either at rest or moves at a constant velocity unless acted upon by an external force.</p> <p>9: Use Newton's 2nd Law of Motion to explain how changes in an object's motion depend on the sum of the external forces on the object and the mass of the object.</p> <p>10: Use Newton's 3rd Law of Motion to design a model to demonstrate and explain the resulting motion of two colliding forces.</p> <p>16: Apply the Law of Conservation of Energy to develop arguments supporting the claim that when the kinetic</p>	<p>Simulations in the classroom</p> <p>Experimenting with Forces & Motion (EFM)</p> <p>10.1 Mousetrap Car</p>

	energy of an object changes, energy is transferred to or from the object.	
15 Waves 16 Sound 18 Light & Optics	17: Create and manipulate a model of a simple wave to predict and describe the relationships between wave properties and energy. 18: Use models to demonstrate how light and sound waves differ in how they are absorbed, reflected, and transmitted through different types of media. 19: Integrate qualitative information to explain that common communication devices use electromagnetic waves to encode and transmit information.	Spring Manipulations
21 Magnetism	11: Plan & carry out investigations to evaluate how various factors affect the	

	<p>strength of electric and magnetic forces.</p> <p>12: Construct an argument from evidence explaining that fields exist between objects exerting forces on each other even when the objects are not in contact.</p>	
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