

Chemistry of Organic Compounds— National Science Education Standards



Experiments and Demonstrations

Content Standards

	Models of Organic Compounds	Making Soap	Preparation of Esters	Synthesis of Aspirin	Steam Distillation of Cinnaron	Cleaning with Charcoal	The Carbon Soufflé	Feeling Blue	Kaleidoscope Optical Activity	Salt-Out the Red, White, and Blue
Unifying Concepts and Processes										
Systems, order, and organization	✓									
Evidence, models, and explanation	✓								✓	
Constancy, change, and measurement		✓	✓	✓						
Evolution and equilibrium										
Form and function										
Science as Inquiry										
Identify questions and concepts that guide scientific investigation										
Design and conduct scientific investigations										
Use technology and mathematics to improve scientific investigations	✓		✓							
Formulate and revise scientific explanations and models using logic and evidence										
Recognize and analyze alternative explanations and models										
Communicate and defend a scientific argument										
Understand scientific inquiry			✓							
Physical Science										
Structure of atoms										
Structure and properties of matter	✓	✓	✓	✓	✓	✓			✓	✓
Chemical reactions		✓	✓	✓			✓	✓		
Motions and forces										
Conservation of energy and the increase in disorder										
Interactions of energy and matter										

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Content Standards (continued)

	Models of Organic Compounds	Making Soap	Preparation of Esters	Synthesis of Aspirin	Steam Distillation of Cinnamon	Cleaning with Charcoal	The Carbon Soufflé	Feeling Blue	Kaleidoscope Optical Activity	Salt-Out the Red, White, and Blue
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Science and Technology										
Identify a problem or design an opportunity										
Propose designs and choose between alternative solutions										
Implement a proposed solution										
Evaluate the solution and its consequences										
Communicate the problem, process, and solution										
Understand science and technology		✓		✓						
Science in Personal and Social Perspectives										
Personal and community health										
Population growth										
Natural resources						✓				
Environmental quality										
Natural and human-induced hazards										
Science and technology in local, national, and global challenges										
History and Nature of Science										
Science as a human endeavor		✓		✓						
Nature of scientific knowledge		✓	✓	✓	✓					
Historical perspectives		✓		✓	✓					