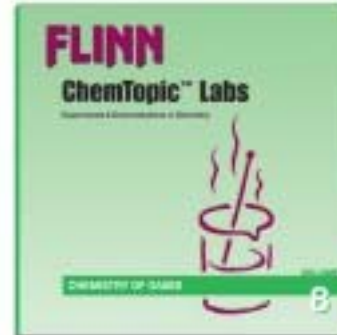


Chemistry of Gases— National Science Education Standards



Experiments and Demonstrations

Content Standards

	Common Gases	Preparing and Testing Hydrogen Gas	Oxygen, What a Flame	Carbon Dioxide, What a Gas	Collecting Gases by Water Displacement	Underwater Fireworks	Flaming Vapor Ramp	The Collapsing Bottle	Solubility of Carbon Dioxide	Solubility of Ammonia
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										

Continued on next page

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Chemistry of Gases— National Science Education Standards



Experiments and Demonstrations

Content Standards (continued)

	Common Gases	Preparing and Testing Hydrogen Gas	Oxygen, What a Flame	Carbon Dioxide, What a Gas	Collecting Gases by Water Displacement	Underwater Fireworks	Flaming Vapor Ramp	The Collapsing Bottle	Solubility of Carbon Dioxide	Solubility of Ammonia
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	✓	✓	✓	✓				✓		

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