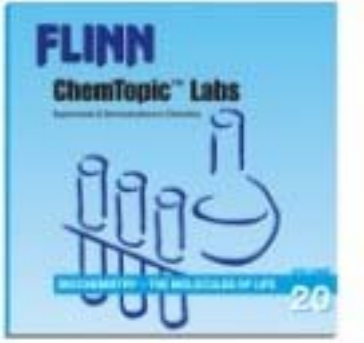
Biochemistry–The Molecules of Life—
National Science Education Standards



Experiments and Demonstrations

Content Standards	Introduction to Carbohydrates	Identifying Proteins and Amino Acids	Physical Properties of Proteins	Properties of Lipids	Membrane Diffusion	Glucose Fermentation	Lactose Intolerance	Amino Acid Fingerprints	pH and Protein Solubility
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									
Understanding 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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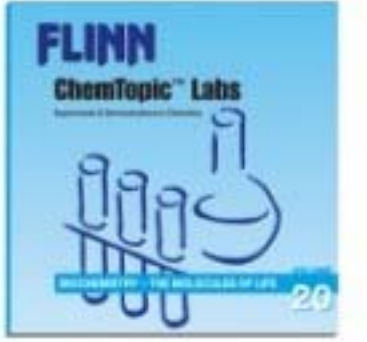

Experiments and Demonstrations

Content Standards *(continued)*

	Introduction to Carbohydrates	Identifying Proteins and Amino Acids	Physical Properties of Proteins	Properties of Lipids	Membrane Diffusion	Glucose Fermentation	Lactose Intolerance	Amino Acid Fingerprints	pH and Protein Solubility
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	✓	✓	✓	✓		✓			