

# Polymers— National Science Education Standards



## Experiments and Demonstrations

### Content Standards

	<i>Let's Make Slime</i>	<i>Structures and Properties of Polymers</i>	<i>Properties of a Natural Polymer</i>	<i>Sorting Plastics by Density</i>	<i>Small-Scale Synthesis of Polymers</i>	<i>Designer Gluep</i>	<i>Preparation of Nylon</i>	<i>Polyurethane Foam</i>	<i>Properties of a Super-absorbent Polymer</i>	<i>Oh, the Memories!</i>	<i>Polymethyl Methacrylate</i>
<b>Unifying Concepts and Processes</b>											
Systems, order, and organization											
Evidence, models, and explanation		✓	✓			✓			✓		
Constancy, change, and measurement	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Evolution and equilibrium											
Form and function		✓	✓			✓	✓	✓	✓	✓	✓
<b>Science as Inquiry</b>											
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		✓	✓	✓		✓					
<b>Physical Science</b>											
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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<b>Science and Technology</b>											
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		✓	✓	✓							
<b>Science in Personal and Social Perspectives</b>											
Personal and community health											
Population growth											
Natural resources											
Environmental quality				✓							
Natural and human-induced hazards											
Science and technology in local, national, and global challenges				✓							
<b>History and Nature of Science</b>											
Science as a human endeavor				✓							
Nature of scientific knowledge		✓				✓					
Historical perspectives			✓	✓			✓				