



STANDARDS	PAGE REFERENCES
Science	
<p>The Iowa Science Core Curriculum is a framework of science concepts and skills. This document provides a scaffold upon which each district will develop grade level expectations. The vision is that all Iowa students will have access to this common core and that individual districts will decide how they will extend this core to meet the needs of their students.</p>	
<p>The committee used international, national, and state level documents in this process. The final core concepts and skills are drawn from the respected work of the National Research Council's, (NRC) National Science Education Standards (NSES). This document is framed upon the four content categories (Science as Inquiry; Physical Science; Earth and Space Science; and Life, Science). The remaining categories (Science and Technology; Science in Personal and Social, Perspectives; and The History and Nature of Science) address the application of knowledge and, should be integrated throughout the content categories.</p>	
<p>For this core to become viable, teachers will need to be aware of and effectively use research based, best practice instructional strategies. The Iowa Content Network - , http://www.iowa.gov/educate/prodev/main.html scrutinizes research in instruction and learning. This research base provided the impetus for the Every Learner Inquires (ELI) initiative. The purpose of ELI is to establish a learning community among Iowa teachers as they utilize best practices (such as learning cycles) to help students become more scientifically literate. ELI is a, state-wide teaching and learning initiative that will improve Iowa students' access to this core of, science concepts and skills. These two Department of Education programs should work hand in-hand to help students attain the scientific literacy necessary for success in the 21st century.</p>	

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Science as Inquiry	
<ul style="list-style-type: none"> Identifies questions and concepts that guide scientific investigations. 	<p>Student Edition: <i>Inquiry Extension</i> 99, 135, 171, 235, 267, 545, 721 <i>Launch Lab</i> 83, 117, 337, 553, 703</p> <p>Teacher Wraparound Edition: A 235, 267, 310, 327, 441, 499, 533; D 426-427</p>
<ul style="list-style-type: none"> Designs and conducts scientific investigations. 	<p>Student Edition: <i>Inquiry Extension</i> 327 <i>Launch Lab</i> 255 <i>Mini Lab</i> 408</p> <p>Teacher Wraparound Edition: A 441, 457, 499, 553, 651; CJ 459; E 278, 728</p>
<ul style="list-style-type: none"> Uses technology and mathematics to improve investigations and communications. 	<p>Student Edition: 54-55 <i>CHEMLAB</i> 360-361, 386-387, 674-675, 720-721 <i>Comparing Orbital Size</i> 871 <i>Mini Lab</i> 373</p> <p>Teacher Wraparound Edition: A 165, 561; CJ 459, 770; COS 871</p>
<ul style="list-style-type: none"> Formulates and revises scientific explanations and models using logic and evidence. 	<p>Student Edition: <i>Analyze and Conclude</i> 235, 457 <i>CHEMLAB</i> 675 <i>Inquiry Extension</i> 651 <i>Launch Lab</i> 49 <i>Mini Lab</i> 164, 260, 355</p> <p>Teacher Wraparound Edition: A 239, 637; UA 9</p>
<ul style="list-style-type: none"> Recognizes and analyzes alternative explanations and models. 	<p>Student Edition: <i>Apply and Assess</i> 205, 267 <i>Inquiry Extension</i> 361 <i>Launch Lab</i> 49 <i>Mini Lab</i> 586, 652, 770</p> <p>Teacher Wraparound Edition: A 443, 586, 607, 651, 652, 675</p>

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<ul style="list-style-type: none"> Communicates and defends a scientific argument. 	<p>Student Edition: <i>Apply and Assess</i> 387 <i>CHEMLAB</i> 457 <i>Inquiry Extension</i> 651 <i>Mini Lab</i> 164, 408, 504, 758</p> <p>Teacher Wraparound Edition: A 504, 518; CJ 459</p>
<ul style="list-style-type: none"> Understands about scientific inquiry. 	<p>Student Edition: 9, 57 <i>Figure 2.5</i> 57 <i>Inquiry Extension</i> 19 <i>Launch Lab</i> 49</p> <p>Teacher Wraparound Edition: CD 9; CJ 459; D 56-57, 440-441</p>
Physical Science	
<ul style="list-style-type: none"> Understands and applies knowledge of the structure of atoms. 	<p>Student Edition: 51, 59-63, 67, 75, 228-229 <i>Figure 2.7</i> 60 <i>Figure 2.8</i> 61 <i>Figure 2.10</i> 63 <i>Figure 2.11</i> 64 <i>Figure 2.13</i> 66 <i>Figure 2.22</i> 75 <i>Figure 7.1</i> 228 <i>Figure 7.2</i> 229 <i>Mini Lab</i> 61, 244 <i>Section 2.1 Assessment</i> 66 <i>Table 2.1</i> 65</p> <p>Teacher Wraparound Edition: CD 63; D 58-59, 64-65; DD 48-49; DI 62; Di 67; IM 63; MI 228; UP 48; VL 59</p>

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<ul style="list-style-type: none"> ▪ Understands and applies knowledge of the structure and properties of matter. 	<p>Student Edition: 14-16, 20-25, 28, 32-34, 38, 40-41, 141, 256-259, 280-281 <i>CHEMLAB</i> 18-19 <i>Figure 1.15</i> 24 <i>Figure 1.18</i> 28 <i>Figure 1.24</i> 39 <i>Mini Lab</i> 21, 25, 38 <i>Section 1.2 Assessment</i> 42</p> <p>Teacher Wraparound Edition: A 21, 25, 38; CD 60, 257; Di 15, 39; IM 24; MI 280; TPK 15, 16; VL 39</p>
<ul style="list-style-type: none"> ▪ Understands and applies knowledge of chemical reactions. 	<p>Student Edition: 188, 196-197, 202-203, 206, 516-517 <i>Chapter 6 Assessment</i> 223-224 <i>CHEMLAB</i> 54-55, 204-205, 544-545 <i>Figure 6.2</i> 189 <i>Mini Lab</i> 203 <i>Section 6.2 Assessment</i> 207 <i>Table 6.1</i> 207</p> <p>Teacher Wraparound Edition: D 202-203; QD 196; R 53; Re 207; VL 189</p>
<ul style="list-style-type: none"> ▪ Understands and applies knowledge of motions and forces. 	<p>Student Edition: 67-68, 142-143, 145 <i>Figure 2.15</i> 68 <i>Figure 4.25</i> 142</p> <p>Teacher Wraparound Edition: UA 142</p>

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<ul style="list-style-type: none"> ▪ Understands and applies knowledge of conservation of energy and increase in disorder. 	<p>Student Edition: 349, 707, 712-714, 726-727 <i>Figure 10.14</i> 349 <i>Mini Lab</i> 708 <i>Section 20.1 Assessment</i> 714</p> <p>Teacher Wraparound Edition: CD 52, 713; CJ 711; CU 714; E 713, 714; IM 717; QD 712</p>
<ul style="list-style-type: none"> ▪ Understands and applies knowledge of interactions of energy and matter. 	<p>Student Edition: 69, 72-73, 231, 339-340, 348-350, 691, 722, 756 <i>Chemistry & Technology</i> 724-725 <i>CHEMLAB</i> 360-361, 720-721 <i>Figure 7.5</i> 231 <i>Figure 20.12</i> 722 <i>Figure 20.17</i> 730 <i>Mini Lab</i> 194</p> <p>Teacher Wraparound Edition: A 194; CD 52, 142, 729; CJ 725, 759; D 68-69; DI 70, 72, 230, 340; MI 756; R 68</p>