



STANDARDS	PAGE REFERENCES
<p>Science</p>	
<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>	

STANDARDS	PAGE REFERENCES
Science as Inquiry	
<ul style="list-style-type: none"> ■ Identifies questions and concepts that guide scientific investigations. 	<p>Student Edition: 8, 46-47, 148-149, 314-315, 439, 648-651 <i>Design Your Own Physics Lab</i> 392-393 <i>Extreme Physics</i> 50, 506 <i>Launch Lab</i> 3, 257, 541 <i>Physics Lab</i> 332-333, 364-365, 790-791 <i>Technology and Society</i> 220</p> <p>Teacher Wraparound Edition: AIL 109, 505, 533, 791; CB 9; D 42</p>
<ul style="list-style-type: none"> ■ Designs and conducts scientific investigations. 	<p>Student Edition: 8-10, 11-14, 15-19 <i>Design Your Own Physics Lab</i> 160-161, 392-393, 532-533, 554-555, 660-661, 824-825 <i>Launch Lab</i> 147, 285, 541 <i>MiniLab</i> 46, 345, 755</p> <p>Teacher Wraparound Edition: A 9; AIL 21, 161; BA 15; CB 12; HSS 8; TPK 11</p>
<ul style="list-style-type: none"> ■ Uses technology and mathematics to improve investigations and communications. 	<p>Student Edition: 4-7, 12-14, 15-18 <i>Connecting Math to Physics</i> 175, 468 <i>Extreme Physics</i> 50, 506, 792 <i>Future Technology</i> 476, 768 <i>How It Works</i> 534, 740 <i>Physics Lab</i> 606-607, 790-791 <i>Problem-Solving Strategies</i> 149, 728</p> <p>Teacher Wraparound Edition: CB 12; R 17; UM 4</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> ■ Formulates and revises scientific explanations and models using logic and evidence. 	<p>Student Edition: 9-10, 12-14, 15-19, 439, 760-761, 787, 818-820 <i>Extreme Physics</i> 506, 662 <i>Internet Physics Lab</i> 108-109, 246-247 <i>Physics Lab</i> 186-187, 302-303 <i>Problem-Solving Strategies</i> 295, 466, 629</p> <p>Teacher Wraparound Edition: AML 16; CB 9; TPK 760</p>
<ul style="list-style-type: none"> ■ Recognizes and analyzes alternative explanations and models. 	<p>Student Edition: 9-10, 154-156, 171-176, 184-185, 735-737 <i>Extreme Physics</i> 188, 366, 506 <i>Physics Lab</i> 186-187, 302-303, 420-421 <i>Technology and Society</i> 450, 608</p> <p>Teacher Wraparound Edition: CB 9; CD 172; CT 184; CU 737; UM 298</p>
<ul style="list-style-type: none"> ■ Communicates and defends a scientific argument. 	<p>Student Edition: 9-10, 153-156, 175-176, 184-185, 293-295, 735-737, 775-781 <i>Extreme Physics</i> 78, 506 <i>Share Your Data</i> 21, 77, 109, 247</p> <p>Teacher Wraparound Edition: BA 153, 293; CB 9, 184, 778; CT 175; IM 736</p>
<ul style="list-style-type: none"> ■ Understands about scientific inquiry. 	<p>Student Edition: 8-10, 13-14, 648-649, 748-751, 754-758, 760-761 <i>Extreme Physics</i> 78, 792 <i>Physics Lab</i> 48-49, 136-137, 186-187, 274-275, 420-421, 606-607, 790-791 <i>Problem-Solving Strategies</i> 123, 295, 466, 629</p> <p>Teacher Wraparound Edition: CB 9, 749, 757; D 648; HSS 8</p>

STANDARDS	PAGE REFERENCES
Physical Science	
<ul style="list-style-type: none"> ■ Understands and applies knowledge of the structure of atoms. 	<p>Student Edition: 747-751, 752-759, 760-765, 799-805, 818-819 <i>Applying Physics</i> 764 <i>Future Technology</i> 768 <i>MiniLab</i> 755 <i>Physics Lab</i> 766-767</p> <p>Teacher Wraparound Edition: CB 757, 801, 818; CT 800; CU 759; HSS 748, 754; IM 762; TPK 747, 760</p>
<ul style="list-style-type: none"> ■ Understands and applies knowledge of the structure and properties of matter. 	<p>Student Edition: 175-178, 184-185, 291, 314-315, 317-318, 323-325, 341-347, 349-351, 359-363, 776-783, 787-789, 806-814, 820-823 <i>Extreme Physics</i> 366 <i>Physics Lab</i> 714-715</p> <p>Teacher Wraparound Edition: CB 177, 318, 778; CD 176; CT 184, 781; CU 823; PP 350, 361; RLP 753; TPK 314</p>
<ul style="list-style-type: none"> ■ Understands and applies knowledge of chemical reactions. 	<p>Student Edition: <i>Biology Connection</i> 442</p> <p>Teacher Wraparound Edition: A 781; C 804; CD 807; CU 814; RLC 319; RLP 442</p>
<ul style="list-style-type: none"> ■ Understands and applies knowledge of motions and forces. 	<p>Student Edition: 32-33, 36-37, 43-47, 57-64, 72-75, 87-91, 93-95, 96-101, 122-125, 131-135, 147-156, 172-176, 179-185, 197-200, 258-260 <i>Future Technology</i> 162 <i>Internet Physics Lab</i> 76-77, 108-109 <i>Launch Lab</i> 57 <i>Physics Lab</i> 48-49, 136-137 <i>Technology and Society</i> 138, 220</p> <p>Teacher Wraparound Edition: BA 157; CU 47, 75; D 62, 134; ICE 45; IM 61, 199; RLP 93; TPK 43</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> ■ Understands and applies knowledge of conservation of energy and increase in disorder. 	<p>Student Edition: 293-296, 319-320, 328-331 <i>Physics Lab</i> 302-303 <i>Problem-Solving Strategies</i> 295</p> <p>Teacher Wraparound Edition: A 330; BA 293; CU 331; QD 295; RLP 329</p>
<ul style="list-style-type: none"> ■ Understands and applies knowledge of interactions of energy and matter. 	<p>Student Edition: 258-262, 285-292, 293-296, 313-315, 317-322, 323-331, 404-407, 569-574, 601-603, 648-649, 652-659, 675-678, 726-729, 749-752, 761-763, 781-783, 787, 820 <i>Design Your Own Physics Lab</i> 660-661 <i>Extreme Physics</i> 366 <i>Future Technology</i> 248, 768, 826 <i>How It Works</i> 582 <i>Launch Lab</i> 313 <i>Physics Lab</i> 302-303, 332-333 <i>Technology and Society</i> 304, 394, 450, 608</p> <p>Teacher Wraparound Edition: C 294, 680; CB 409, 649, 656; CD 314; HSS 787; IM 326, 710; QD 315; RLP 260</p>