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correlated to

Wisconsin's

**Model Academic Standards for
Science
Grade 8**



EDUCATION GROUP



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YOUR WISCONSIN GREAT SOURCE REPRESENTATIVE

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Wisconsin's Model Academic Standards for Science Grade 8

Standard A: Science Connections

Students in Wisconsin will understand that there are unifying themes: systems, order, organization, and interactions; evidence, models, and explanations; constancy, change, and measurement; evolution, equilibrium, and energy; form and function among scientific disciplines.

Performance Standards, Grade 8	ACCESS Science
<p>By the end of grade eight, students will:</p> <p>A.8.1 Develop their understanding of the science themes by using the themes to frame questions about science-related issues and problems</p>	<p>Student Book: 26, 27, 38, 39, 50, 51, 62, 63, 74, 75, 86, 87, 98, 99, 110, 111, 122, 123, 134, 135, 146, 147, 158, 159, 170, 171, 182, 183, 194, 195, 206, 207, 218, 219, 230, 231, 242, 243, 254, 255, 266, 267, 271, 278, 279, 283, 290, 291, 295, 302, 303</p> <p>Teacher's Edition: 26, 27, 38, 39, 50, 51, 62, 63, 74, 75, 86, 87, 98, 99, 110, 111, 122, 123, 134, 135, 146, 147, 158, 159, 170, 171, 182, 183, 194, 195, 206, 207, 218, 219, 230, 231, 242, 243, 254, 255, 266, 267, 271, 278, 279, 283, 290, 291, 295, 302, 303</p>
<p>A.8.3 Defend explanations and models by collecting and organizing evidence that supports them and critique explanations and models by collecting and organizing evidence that conflicts with them</p>	<p>Student Book: 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 79, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p> <p>Teacher's Edition: 18, 19, 20, 21, 22, 23, 24, 25, 29, 30, 33, 34, 35, 36, 37, 55, 79, 91, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p>A.8.6 Use models and explanations to predict actions and events in the natural world</p>	<p>Student Book: 29, 30, 33, 34, 35, 36, 37, 55, 79, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p> <p>Teacher's Edition: 29, 30, 33, 34, 35, 36, 37, 55, 79, 120, 121, 151, 211, 212, 213, 214, 215, 216, 217, 218</p>
<p>A.8.8 Use the themes of evolution, equilibrium, and energy to predict future events or changes in the natural world</p>	<p>Student Book: 36, 68, 89, 92, 94, 95, 96, 97, 173, 174, 175, 176, 222, 253, 262, 264</p> <p>Teacher's Edition: 36, 68, 89, 92, 94, 95, 96, 97, 173, 174, 175, 176, 222, 253, 262, 264</p>

Standard B: Nature of Science

Students in Wisconsin will understand that science is ongoing and inventive, and that scientific understandings have changed over time as new evidence is found.

Performance Standards, Grade 8	ACCESS Science
<p>By the end of grade eight, students will:</p> <p>B.8.1 Describe how scientific knowledge and concepts have changed over time in the earth and space, life and environmental, and physical sciences</p>	<p>Student Book: 30, 31, 33, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207</p> <p>Teacher's Edition: 30, 31, 33, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207</p>
<p>B.8.2 Identify and describe major changes that have occurred over in conceptual models and explanations in the earth and space, life and environmental, and physical sciences and identify the people, cultures, and conditions that led to these developments</p>	<p>Student Book: 30, 31, 33, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207</p> <p>Teacher's Edition: 30, 31, 33, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207</p>
<p>B.8.3 Explain how the general rules of science apply to the development and use of evidence in science investigations, model-making, and applications</p>	<p>Student Book: 22, 24, 26, 31, 24, 25, 28, 29, 79, 103, 110, 199, 206, 247</p> <p>Teacher's Edition: 22, 24, 26, 31, 24, 25, 28, 29, 79, 103, 110, 199, 206, 247</p>
<p>B.8.4 Describe types of reasoning and evidence used outside of science to draw conclusions about the natural world</p>	<p>Student Book: 25, 26</p> <p>Teacher's Edition: 25, 26</p>
<p>B.8.5 Explain ways in which science knowledge is shared, checked, and extended, and show how these processes change over time</p>	<p>Student Book: 25, 26, 38, 50, 98, 158, 206</p> <p>Teacher's Edition: 25, 26, 38, 50, 98, 158, 206</p>

Performance Standards, Grade 8	ACCESS Science
<p>B.8.6 Explain the ways in which scientific knowledge is useful and also limited when applied to social issues</p>	<p>Student Book: 36, 37, 48, 49, 57, 58, 59, 60, 61, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 81, 82, 83, 84, 85, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 102, 104, 105, 106, 107, 108, 109, 114, 115, 116, 117, 118, 119, 120, 121, 132, 144, 152, 153, 154, 155, 156, 157, 162, 163, 164, 165, 166, 167, 168, 169, 176, 177, 178, 179, 180, 181, 192, 202, 214, 252, 264, 277, 287</p> <p>Teacher’s Edition: 6, 37, 48, 49, 57, 58, 59, 60, 61, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 81, 82, 83, 84, 85, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 102, 104, 105, 106, 107, 108, 109, 114, 115, 116, 117, 118, 119, 120, 121, 132, 144, 152, 153, 154, 155, 156, 157, 162, 163, 164, 165, 166, 167, 168, 169, 176, 177, 178, 179, 180, 181, 192, 202, 214, 252, 264, 277, 287</p>

Standard C: Science Inquiry

Students in Wisconsin will investigate questions using scientific methods and tools, revise their personal understanding to accommodate knowledge, and communicate these understandings to others.

Performance Standards, Grade 8	ACCESS Science
<p>By the end of grade eight, students will:</p> <p>C.8.1 Identify questions they can investigate using resources and equipment they have available</p>	<p>Student Book: 19, 27, 38, 39, 50-51, 62, 63, 74, 75, 86, 87, 91, 98, 99, 110, 111, 122, 123, 134, 135, 146, 147, 158, 159, 163, 170, 171, 182, 183, 194, 195, 202, 206, 207, 218, 219, 230, 231, 242, 243, 254, 255, 266, 267, 271, 278, 279, 283, 290, 291, 295, 296, 302, 303</p> <p>Teacher’s Edition: 19, 27, 38, 39, 50-51, 62, 63, 74, 75, 86, 87, 91, 98, 99, 110, 111, 122, 123, 134, 135, 146, 147, 158, 159, 163, 170, 171, 182, 183, 194, 195, 202, 206, 207, 218, 219, 230, 231, 242, 243, 254, 255, 266, 267, 271, 278, 279, 283, 290, 291, 295, 296, 302, 303</p>
<p>C.8.2 Identify data and locate sources of information including their own records to answer the questions being investigated</p>	<p>Student Book: 26, 43, 50, 62, 74, 134, 170, 283, 284, 288, 291, 302, 303</p> <p>Teacher’s Edition: 26, 43, 50, 62, 74, 134, 170, 283, 284, 288, 291, 302, 303</p>
<p>C.8.3 Design and safely conduct investigations that provide reliable quantitative or qualitative data, as appropriate, to answer their questions</p>	<p>Student Book: 26, 43, 50, 62, 74, 134, 170, 283, 284, 288, 291, 302, 303</p> <p>Teacher’s Edition: 26, 43, 50, 62, 74, 134, 170, 283, 284, 288, 291, 302, 303</p>

Performance Standards, Grade 8	ACCESS Science
C.8.4 Use inferences to help decide possible results of their investigations, use observations to check their inferences	<p>Student Book: 51, 63, 110, 111, 135, 183, 247, 255</p> <p>Teacher's Edition: 51, 63, 110, 111, 135, 183, 247, 255</p>
C.8.5 Use accepted scientific knowledge, models, and theories to explain their results and to raise further questions about their investigations	<p>Student Book: 26, 43, 50, 62, 74, 134, 170, 283, 284, 288, 291, 302, 303</p> <p>Teacher's Edition: 26, 43, 50, 62, 74, 134, 170, 283, 284, 288, 291, 302, 303</p>
C.8.6 State what they have learned from investigations, relating their inferences to scientific knowledge and to data they have collected	<p>Student Book: 27, 39, 51, 63, 75, 86, 87, 99, 111, 123, 147, 159, 171, 183, 195, 219, 231, 243, 255, 267, 291, 303</p> <p>Teacher's Edition: 27, 39, 51, 63, 75, 86, 87, 99, 111, 123, 147, 159, 171, 183, 195, 219, 231, 243, 255, 267, 291, 303</p>
C.8.7 Explain their data and conclusions in ways that allow an audience to understand the questions they selected for investigation and the answers they have developed	<p>Student Book: 26, 38, 50, 62, 86, 98, 110, 122, 135, 146, 158, 194, 206, 218, 230, 254, 290</p> <p>Teacher's Edition: 26, 38, 50, 62, 86, 98, 110, 122, 135, 146, 158, 194, 206, 218, 230, 254, 290</p>
C.8.9 Evaluate, explain, and defend the validity of questions, hypotheses, and conclusions to their investigations	<p>Student Book: 26, 43, 50, 62, 74, 134, 170, 283, 284, 288, 291, 302, 303</p> <p>Teacher's Edition: 26, 43, 50, 62, 74, 134, 170, 283, 284, 288, 291, 302, 303</p>
C.8.10 Discuss the importance of their results and implications of their work with peers, teachers, and other adults	<p>Student Book: 27, 39, 51, 63, 75, 86, 87, 99, 111, 123, 147, 159, 171, 183, 195, 219, 231, 243, 255, 267, 291, 303</p> <p>Teacher's Edition: 27, 39, 51, 63, 75, 86, 87, 99, 111, 123, 147, 159, 171, 183, 195, 219, 231, 243, 255, 267, 291, 303</p>
C.8.11 Raise further questions which still need to be answered	<p>Student Book: 25</p> <p>Teacher's Edition: 25</p>

Standard D: Physical Science

Students in Wisconsin will demonstrate an understanding of the physical and chemical properties of matter, the forms and properties of energy, and the ways in which matter and energy interact.

Performance Standards, Grade 8	ACCESS Science
<p>By the end of grade eight, students will:</p> <p>PROPERTIES AND CHANGES OF PROPERTIES OF MATTER</p> <p>D.8.1 Observe, describe, and measure physical and chemical properties of elements and other substances to identify and group them according to properties such as density, melting points, boiling points, conductivity, magnetic attraction, solubility, and reactions to common physical and chemical tests</p>	<p>Student Book: 217, 221, 224, 225, 226, 227, 228, 231, 236, 237, 238, 239, 242, 245, 265, 289</p> <p>Teacher's Edition: 217, 221, 224, 225, 226, 227, 228, 231, 236, 237, 238, 239, 242, 245, 265, 289</p>
<p>D.8.2 Use the major ideas of atomic theory and molecular theory to describe physical and chemical interactions among substances, including solids, liquids, and gases</p>	<p>Student Book: 213, 214, 215, 220, 221, 222, 223, 224, 225, 226, 227</p> <p>Teacher's Edition: 213, 214, 215, 220, 221, 222, 223, 224, 225, 226, 227</p>
<p>D.8.3 Understand how chemical interactions and behaviors lead to new substances with different properties</p>	<p>Student Book: 217, 245, 250, 251, 252, 253, 254, 255</p> <p>Teacher's Edition: 217, 245, 250, 251, 252, 253, 254, 255</p>
<p>D.8.4 While conducting investigations, use the science themes to develop explanations of physical and chemical interactions and energy exchanges</p>	<p>Student Book: 254, 255, 257, 258, 265</p> <p>Teacher's Edition: 254, 255, 257, 258, 265</p>
<p>MOTIONS AND FORCES</p> <p>D.8.5 While conducting investigations, explain the motion of objects by describing the forces acting on them</p>	<p>Student Book: 269, 273</p> <p>Teacher's Edition: 269, 273</p>
<p>D.8.6 While conducting investigations, explain the motion of objects using concepts of speed, velocity, acceleration, friction, momentum, and changes over time, among others, and apply these concepts and explanations to real-life situations outside the classroom</p>	<p>Student Book: 269, 273, 274, 275, 276, 278, 279</p> <p>Teacher's Edition: 269, 273, 274, 275, 276, 278, 279</p>

Performance Standards, Grade 8	ACCESS Science
D.8.7 While conducting investigations of common physical and chemical interactions occurring in the laboratory and the outside world, use commonly accepted definitions of energy and the idea of energy conservation	Student Book: 217, 222, 226, 245, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261 Teacher's Edition: 217, 222, 226, 245, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261
TRANSFER OF ENERGY D.8.8 Describe and investigate the properties of light, heat, gravity, radio waves, magnetic fields, electrical fields, and sound waves as they interact with material objects in common situations	Student Book: 222, 225, 263, 264, 265, 269, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291 Teacher's Edition: 222, 225, 263, 264, 265, 269, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291
D.8.9 Explain the behaviors of various forms of energy by using the models of energy transmission, both in the laboratory and in real-life situations in the outside world	Student Book: 246, 247, 248, 249, 250, 255 Teacher's Edition: 246, 247, 248, 249, 250, 255

Standard E: Earth and Space Science
Students in Wisconsin will demonstrate an understanding of the structure and systems of earth and other bodies in the universe and of their interactions.

Performance Standards, Grade 8	ACCESS Science
By the end of grade eight, students will: STRUCTURE OF THE EARTH SYSTEM E.8.1 Using the science themes, explain and predict changes in major features of land, water, and atmospheric systems	Student Book: 32, 33 Teacher's Edition: 32, 33
E.8.2 Describe underlying structures of the earth that cause changes in the earth's surface	Student Book: 34, 35, 36, 37 Teacher's Edition: 34, 35, 36, 37
E.8.3 Using the science themes during the process of investigation, describe climate, weather, ocean currents, soil movements and changes in the forces acting on the earth	Student Book: 53, 54, 55, 56, 57, 58, 59, 60, 61 Teacher's Edition: 53, 54, 55, 56, 57, 58, 59, 60, 61
E.8.4 Using the science themes, analyze the influence living organisms have had on the earth's systems, including their impact on the composition of the atmosphere and the weathering of rocks	Student Book: 49, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109 Teacher's Edition: 49, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109

Performance Standards, Grade 8	ACCESS Science
<p>EARTH'S HISTORY</p> <p>E.8.5 Analyze the geologic and life history of the earth, including change over time, using various forms of scientific evidence</p>	<p>Student Book: 30, 31</p> <p>Teacher's Edition: 30, 31</p>
<p>E.8.6 Describe through investigations the use of the earth's resources by humans in both past and current cultures, particularly how changes in the resources used for the past 100 years are the basis for efforts to conserve and recycle renewable and non-renewable resources</p>	<p>Student Book: 88, 89, 90, 91, 92, 93, 94, 95, 96, 97</p> <p>Teacher's Edition: 88, 89, 90, 91, 92, 93, 94, 95, 96, 97</p>
<p>EARTH IN THE SOLAR SYSTEM</p> <p>E.8.7 Describe the general structure of the solar system, galaxies, and the universe, explaining the nature of the evidence used to develop current models of the universe</p>	<p>Student Book: 78, 79, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301</p> <p>Teacher's Edition: 78, 79, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301</p>
<p>E.8.8 Using past and current models of the structure of the solar system, explain the daily, monthly, yearly, and long-term cycles of the earth, citing evidence gained from personal observation as well as evidence used by scientists</p>	<p>Student Book: 78, 80, 82, 83, 87</p> <p>Teacher's Edition: 78, 80, 82, 83, 87</p>

Standard F: Life and Environmental Science

Students in Wisconsin will demonstrate an understanding of the characteristics and structures of living things, the processes of life, and how living things interact with one another and their environment.

Performance Standards, Grade 8	ACCESS Science
<p>By the end of grade eight, students will:</p> <p>STRUCTURE AND FUNCTION OF LIVING THINGS</p> <p>F.8.1 Understand the structure and function of cells, organs, tissues, organ systems, and whole organisms</p>	<p>Student Book: 126, 129, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 179</p> <p>Teacher's Edition: 126, 129, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 179</p>
<p>F.8.2 Show how organisms have adapted structures to match their functions, providing means of encouraging individual and group survival within specific environments</p>	<p>Student Book: 196, 197, 198, 199, 200, 201, 202, 203, 204, 205</p> <p>Teacher's Edition: 196, 197, 198, 199, 200, 201, 202, 203, 204, 205</p>
<p>F.8.3 Differentiate between single-celled and multiple-celled organisms (humans) through investigation, comparing the cell functions of specialized cells for each type of organism</p>	<p>Student Book: 131, 132, 133, 136, 137, 138, 139, 140, 141, 142, 143</p> <p>Teacher's Edition: 131, 132, 133, 136, 137, 138, 139, 140, 141, 142, 143</p>
<p>REPRODUCTION AND HEREDITY</p> <p>F.8.4 Investigate and explain that heredity is comprised of the characteristic traits found in genes within the cell of an organism</p>	<p>Student Book: 139, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195</p> <p>Teacher's Edition: 139, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195</p>
<p>F.8.5 Show how different structures both reproduce and pass on characteristics of their group</p>	<p>Student Book: 139, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195</p> <p>Teacher's Edition: 139, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195</p>
<p>REGULATION AND BEHAVIOR</p> <p>F.8.6 Understand that an organism is regulated both internally and externally</p>	<p>Student Book: 178</p> <p>Teacher's Edition: 178</p>
<p>F.8.7 Understand that an organism's behavior evolves through adaptation to its environment</p>	<p>Student Book: 172, 173, 174, 175, 176, 177, 178, 179</p> <p>Teacher's Edition: 172, 173, 174, 175, 176, 177, 178, 179</p>

Performance Standards, Grade 8	ACCESS Science
<p>POPULATIONS AND ECOSYSTEMS</p> <p>F.8.8 Show through investigations how organisms both depend on and contribute to the balance or imbalance of populations and/or ecosystems, which in turn contribute to the total system of life on the planet</p>	<p>Student Book: 113, 114, 116, 117, 118, 119, 120, 121, 122, 123</p> <p>Teacher's Edition: 113, 114, 116, 117, 118, 119, 120, 121, 122, 123</p>
<p>DIVERSITY AND ADAPTATIONS OF ORGANISMS</p> <p>F.8.9 Explain how some of the changes on the earth are contributing to changes in the balance of life and affecting the survival or population growth of certain species</p>	<p>Student Book: 197, 200, 203, 204, 205</p> <p>Teacher's Edition: 197, 200, 203, 204, 205</p>
<p>F.8.10 Project how current trends in human resource use and population growth will influence the natural environment, and show how current policies affect those trends.</p>	<p>Student Book: 89, 90, 91, 92, 96, 97</p> <p>Teacher's Edition: 89, 90, 91, 92, 96, 97</p>

Standard G: Science Applications

Students in Wisconsin will demonstrate an understanding of the relationship between science and technology and the ways in which that relationship influences human activities.

Performance Standards, Grade 8	ACCESS Science
<p>By the end of grade eight, students will:</p> <p>G.8.2 Explain how current scientific and technological discoveries have an influence on the work people do and how some of these discoveries also lead to new careers</p>	<p>Student Book: 94, 106, 117, 132, 144, 156, 168, 180, 192, 202, 214, 264, 277, 287</p> <p>Teacher's Edition: 94, 106, 117, 132, 144, 156, 168, 180, 192, 202, 214, 264, 277, 287</p>
<p>G.8.3 Illustrate the impact that science and technology have had, both good and bad, on careers, systems, society, environment, and quality of life</p>	<p>Student Book: 94, 106, 117, 132, 144, 156, 168, 180, 192, 202, 214, 264, 277, 287</p> <p>Teacher's Edition: 94, 106, 117, 132, 144, 156, 168, 180, 192, 202, 214, 264, 277, 287</p>
<p>G.8.6 Use current texts, encyclopedias, source books, computers, experts, the popular press, or other relevant sources to identify examples of how scientific discoveries have resulted in new technology</p>	<p>Student Book: 94, 132, 144, 156, 180, 192, 202, 214, 264, 277, 287</p> <p>Teacher's Edition: 94, 132, 144, 156, 180, 192, 202, 214, 264, 277, 287</p>

Performance Standards, Grade 8	ACCESS Science
G.8.7 Show evidence of how science and technology are interdependent, using some examples drawn from personally conducted investigations	<p>Student Book: 22, 36, 48, 57, 68, 83, 94, 106, 117, 132, 144, 156, 168, 180, 192, 202, 214, 229, 240, 252, 264, 277, 287, 297</p> <p>Teacher's Edition: 22, 36, 48, 57, 68, 83, 94, 106, 117, 132, 144, 156, 168, 180, 192, 202, 214, 229, 240, 252, 264, 277, 287, 297</p>

**S t a n d a r d H : S c i e n c e i n P e r s o n a l a n d
S o c i a l P e r s p e c t i v e s**

Students in Wisconsin will use scientific information and skills to make decisions about themselves, Wisconsin, and the world in which they live.

Performance Standards, Grade 8	ACCESS Science
By the end of grade eight, students will: H.8.3 Understand the consequences of decisions affecting personal health and safety	<p>Student Book: 163, 167, 168, 180</p> <p>Teacher's Edition: 163, 167, 168, 180</p>



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