



## InterActions in Physical Science Correlation to the Wisconsin Model Academic Standards, Science 5-8

### Standard A: Science Connections

<b>Standards and Expected Performances</b>	<b>Location/Page where Standard is found</b>
A.8.1 Develop their understanding of the science themes by using the themes to frame questions about science-related issues and problems	16-24, 79-82, 87-92, 114-118, 156-158, 168-173, 248-254, 290-294, 313-317, 374-377, 442-445, 446-447, 508-511, 541-545
A.8.2 Describe limitations of science systems and give reasons why specific science themes are included in or excluded from those systems	8-11, 12-15, 16-24, 25-27, 28-34, 615-617, 621-622, 623, 636
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	16-24, 79-82, 87-92, 114-118, 156-158, 168-173, 175-178, 248-254, 290-294, 313-317, 376-377, 444-447, 510-513, 540-542
A.8.4 Collect evidence to show that models developed as explanations for events were (and are) based on the evidence available to scientists at the time	446-458, 497-500, 517-522, 541-545, 546-552, 560-568, 569-576
A.8.5 Show how models and explanations, based on systems, were changed as new evidence accumulated (the effects of constancy, evolution, change, and measurement should all be part of these explanations)	16-24, 79-82, 87-92, 114-118, 156-158, 168-173, 248-254, 290-294, 313-317, 376-379, 444-447, 510-513, 540-542
A.8.6 Use models and explanations to predict actions and events in the natural world	36-40, 56-64, 71-74, 76-78, 83-86, 97-101, 102-106, 114-116, 168-173, 218-224, 248-254, 336-341, 376-379, 380-386, 411-416

A.8.7 Design real or thought investigations to test the usefulness and limitations of a model	430, 446-458, 588-595, 586-587, 569-571, 353-362, 16-24, 25-27, 28-34
A.8.8. Use the themes of evolution, equilibrium, and energy to predict future events or changes in the natural world	112-113, 114-118, 126-132, 133-136, 218-224, 275-282, 308-312, 325-329, 333-334, 353-362, 363-368, 528-534, 577-583, 588-595, 596-600, 601-607

### Standard B: Nature of Science

<b>Standards and Expected Performances</b>	<b>Location/Page where Standard is found</b>
B.8.1 Describe how scientific knowledge and concepts have changed over time in the earth and space, life and environmental, and physical sciences	16-24, 79-82, 87-92, 114-118, 156-158, 168-173, 248-254, 290-294, 313-317, 376-379, 444-447, 510-513, 540-542
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	182-184, 186-187, 211-212, 218-224, 237-239, 253-254, 601-607, 532-533, 588-595, 596-600
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	12-15, 25-27, 28-34, 36-40, 48-55, 102-106, 114-118, 137-143, 174-178, 295-297, 332, 444-447, 590-597
B.8.4 Describe types of reasoning and evidence used outside of science to draw conclusions about the natural world	16-24, 79-82, 87-92, 114-118, 156-158, 168-173, 248-254, 290-294, 313-317, 376-379, 444-447, 510-513, 540-542
B.8.5 Explain ways in which science knowledge is shared, checked, and extended, and show how these processes change over time	-11, 12-15, 16-24, 25-27, 28-34
B.8.6 Explain the ways in which scientific knowledge is useful and also limited when applied to social issues	353-362, 586-587, 528-534, 588-595, 596-600, 601-607

### Standard C: Science Inquiry

<b>Standards and Expected Performances</b>	<b>Location/Page where Standard is found</b>
C.8.1 Identify* questions they can investigate* using resources and equipment they have available	16-24, 79-82, 87-92, 114-118, 156-158, 168-173, 248-254, 290-294, 313-317, 374-377, 442-445, 446-447, 508-511, 541-545
C.8.2 Identify* data and locate sources of information including their own records to answer the questions being investigated	36-40, 56-64, 71-74, 76-78, 83-86, 97-101, 102-106, 114-118, 168-173, 218-224, 248-254, 336-341, 374-377, 378-384, 411-415
C.8.3 Design and safely conduct investigations* that provide reliable quantitative or qualitative data, as appropriate, to answer their questions	79-82, 102-106, 14-118, 168-173, 188-190, 308-312, 374-379, 392-397, 611-614
C.8.4 Use inferences* to help decide possible results of their investigations, use observations to check their inferences	621-622, 16-24, 56-64, 137-143, 149-154, 290-294, 298-301, 308-312, 318-324
C.8.5 Use accepted scientific knowledge, models*, and theories* to explain* their results and to raise further questions about their investigations*	12-15, 25-27, 28-34, 36-40, 48-55, 102-106, 114-118, 137-143, 174-178, 295-297, 332, 446-447, 590-597
C.8.6 State what they have learned from investigations*, relating their inferences* to scientific knowledge and to data they have collected	12-15, 25-27, 28-34, 36-40, 48-55, 102-106, 114-118, 137-143, 174-178, 295-297, 332, 446-447, 590-597
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	12-15, 16-24, 28-34, 79-82, 83-86, 87-92, 149-154
C.8.8 Use computer software and other technologies to organize, process, and present their data	60-61, 203-206, 228-229, 322-324, 386-389, 487-489, 493-496, 628-630, 645-646
C.8.9 Evaluate*, explain*, and defend the validity of questions, hypotheses, and conclusions to their investigations*	623, 636-637, 12-15, 16-24, 25-27, 28-34, 41-47, 56-64, 93-96

C.8.10 Discuss the importance of their results and implications of their work with peers, teachers, and other adults	12-15, 16-24, 28-34, 56-64, 79-82, 83-86, 87-92, 137-143, 149-154, 637
C.8.11 Raise further questions which still need to be answered	16-24, 79-82, 87-92, 114-118, 156-158, 168-173, 248-254, 290-294, 313-317, 374-377, 446-447, 508-511, 541-545

### Standard D: Physical Science

<b>Standards and Expected Performances</b>	<b>Location/Page where Standard is found</b>
<b>PROPERTIES AND CHANGES OF PROPERTIES IN MATTER</b>	
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	442-445, 446-458, 459-463, 464-472, 473-479, 480-489, 490-496, 501-502, 503-507, 508-511, 512-516, 415-420, 421-425, 426-427, 428-430, 431-434, 569-571, 584-585, 435-438, 523-527
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	538-540, 541-545, 546-552, 517-522, 523-527, 586-587, 442-445, 446-458, 459-463, 464-472, 473-479, 480-489, 490-496, 497-500, 501-502, 503-507, 508-511, 512-516, 517-522, 523-527, 390-395, 396-400, 401-408, 409-414, 415-420
D.8.3 Understand how chemical interactions and behaviors lead to new substances with different properties	538-540, 541-545, 546-552, 553-559, 560-568, 569-571, 572-576, 577-583, 584-585, 586-587, 588-595
D.8.4 While conducting investigations, use the science themes to develop explanations of physical and chemical interactions and energy exchanges	490-496, 497-498, 503-507, 512-516, 546-552, 553-559, 577-583

<b>MOTIONS AND FORCES</b>	
D.8.5 While conducting investigations, explain the motion of objects by describing the forces acting on them	<b>186-187, 188-190, 191-192, 193-195, 196-200, 201-202, 203-206, 207-209, 213-217, 243-247,</b>
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	<b>8-15, 28-34, 137-143, 144-148, 149-154, 196-200, 207-210, 240-242, 226-227, 228-229, 230-232, 237-239, 275-282, 218-224</b>
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	<b>36-40, 65-70, 71-74, 114-118, 126-136, 159-167, 210-212, 308-312, 313-317, 325-329, 330-335, 353-362, 514-518, 548-554, 555-561</b>
<b>TRANSFER OF ENERGY</b>	
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	<b>36-37, 65-70, 119-125, 126-132, 144-148, 149-154, 336-341, 342-347, 348-352</b>
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	<b>36-40, 65-70, 71-74, 114-118, 126-136, 159-167, 210-212, 308-312, 313-317, 325-329, 330-335, 353-362, 514-518, 548-554, 555-561,</b>
D.8.10 Explain how models of the atomic structure of matter have changed over time, including historical models and modern atomic theory	<b>517-522, 523-527, 446-458</b>

### Standard G: Science Applications

<b>Standards and Expected Performances</b>	<b>Location/Page where Standard is found</b>
G.8.1 Identify* and investigate* the skills people need for a career in science or technology and identify the academic courses that a person pursuing such a career would need	<b>156-158, 411-416, 430-432, 530-536, 588-589, 598-602</b>
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	<b>183, 230-232, 267, 419, 517-518, 519-522</b>
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	<b>353-362, 596-600, 588-595, 586-587, 16-24, 430-432, 530-536, 598-602</b>

G.8.4 Propose a design (or re-design) of an applied science model or a machine that will have an impact in the community or elsewhere in the world and show* how the design (or re-design) might work, including potential side-effects	12-15, 25-27, 41-47, 56-64, 93-96, 248-254, 621-622, 623
G.8.5 Investigate* a specific local problem to which there has been a scientific or technological solution, including proposals for alternative courses of action, the choices that were made, reasons for the choices, any new problems created, and subsequent community satisfaction	353-362, 586-587, 528-534, , 588-595, 596-600, 601-607
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	621-622, 623, 636-637
G.8.7 Show* evidence* of how science and technology are interdependent, using some examples drawn from personally conducted investigations*	36-40, 56-64, 71-74, 76-78, 83-86, 97-101, 102-106, 114-116, 168-173, 218-224, 248-254, 336-341, 376-379, 380-386, 411-416, 353-362, 586-587, 528-534, , 588-595, 596-600, 601-607

### Standard H: Science in Personal and Social Perspectives

<b>Standards and Expected Performances</b>	<b>Location/Page where Standard is found</b>
H.8.1 Evaluate the scientific evidence used in various media (for example, television, radio, Internet, popular press, and scientific journals) to address a social issue, using criteria of accuracy, logic, bias, relevance of data, and credibility of sources	36-40, 56-64, 71-74, 76-78, 83-86, 97-101, 102-106, 114-116, 168-173, 218-224, 248-254, 336-341, 376-379, 380-386, 411-416, 621-622, 623, 636-637,
H.8.2 Present a scientific solution to a problem involving the earth and space, life and environmental, or physical sciences and participate in a consensus-building discussion to arrive at a group decision	626-627, 353-362, 586-587, 528-534
H.8.3 Understand the consequences of decisions affecting personal health and safety	528-534, 588-595, 596-600, 601-607, 586-587