



## InterActions in Physical Science Correlation to the Oregon Science Standards, Grades 6-8

Content Standards/Performance Expecations	Location/Page where Standard is found
<b>6.1 <u>Structure and Function</u>: Living and non-living systems are organized groups of related parts that function together and have characteristics and properties.</b>	
6.1P.1 Describe physical and chemical properties of matter and how they can be measured.	<b>545-551, 540-544, 552-561, 562-567, 568-572, 573-582-, 583-590, 591-592, 370-374, 375-379, 380-386, 506-510, 523-524</b>
6.1P.2 Compare and contrast the characteristic properties of forms of energy.	<b>182-184, 185-187, 188-193, 194-199, 200-204, 205-208, 301-304, 481-485, 583-590, 380-387, 387-391</b>
<b>6.2 <u>Interaction and Change</u>: The related parts within a system interact and change.</b>	
6.2P.1 Describe and compare types and properties of waves and explain how they interact with matter.	<b>148-154, 171-176</b>
6.2P.2 Describe the relationships between: electricity and magnetism, static and current electricity, and series and parallel electrical circuits.	<b>60-68, 69-74, 53-59, 75-78</b>
<b>6.3 <u>Scientific Inquiry</u>: Scientific inquiry is the investigation of the natural world based on observation and science principles that includes proposing questions or hypotheses, and developing procedures for questioning, collecting, analyzing, and interpreting accurate and relevant data to produce justifiable evidence-based explanations.</b>	
6.3S.1 Based on observation and science principles propose questions or hypotheses that can be examined through scientific investigation. Design and conduct an investigation that uses appropriate tools and techniques to collect relevant data.	<b>16-24, 91-94, 99-104, 136-140, 182-184, 194-199, 295-300, 346-350, 375-379, 450-451, 540-544, 473-477, 552-561</b>

6.3S.2 Organize and display relevant data, construct an evidence-based explanation of the results of an investigation, and communicate the conclusions.	12-15, 16-24, 28-34, 60-68, 91-94, 95-98, 99-104, 159-165, 171-176
6.3S.3 Explain why if more than one variable changes at the same time in an investigation, the outcome of the investigation may not be clearly attributable to any one variable.	8-11, 12-15, 25-27, 28-34, 42-46, 53-59, 114-118, 155-158, 351-353, 394, 552-561, 657-661, 205-208, 431-434, 504-505
<b>6.4 <u>Engineering Design</u>: Engineering design is a process of identifying needs, defining problems, developing solutions, and evaluating proposed solutions.</b>	
6.4D.1 Define a problem that addresses a need and identify science principles that may be related to possible solutions.	16-24, 91-94, 99-104, 136-140, 182-184, 194-199, 295-300, 346-350, 375-379, 450-451, 473-477
6.4D.2 Design, construct, and test a possible solution to a defined problem using appropriate tools and materials. Evaluate proposed engineering design solutions to the defined problem.	692-696, 12-15, 25-27, 47-52, 60-68, 105-108, 295-300
6.4D.3 Describe examples of how engineers have created inventions that address human needs and aspirations.	597-601, 511-516, 305-315, 277-279, 618, 549, 313, 517-518, 598

## Grade 7

Content Standards/Performance Expecations	Location/Page where Standard is found
<b>7.1 <u>Structure and Function</u>: Living and non-living systems are composed of components which affect the characteristics and properties of the system.</b>	
7.1P.1 Explain that all matter is made of atoms, elements are composed of a single kind of atom, and compounds are composed of two or more elements.	597-601, 540-544, 602-605, 606-610, 511-516, 506-510, 626-629, 647-653, 478-480, 654-656
<b>7.2 <u>Interaction and Change</u>: The components and processes within a system interact.</b>	
7.2P.1 Identify and describe types of motion and forces and relate forces qualitatively to the laws of motion and gravitation.	42-46, 47-52, 53-59, 60-68, 69-74, 75-78, 134-135, 136-140-141-147, 148-154, 155-158, 159-165, 166-170, 172-176, 182-184, 185-187, 188-193, 194-199, 200-204, 05-208, 224-225, 226-228, 229-230, 231-233, 234-237,

	238-239, 240-243, 244-246, 247-249, 250-253, 254-260
<b>7.3 <u>Scientific Inquiry</u>: Scientific inquiry is the investigation of the natural world based on observation and science principles that includes proposing questions or hypotheses, designing procedures for questioning, collecting, analyzing, and interpreting multiple forms of accurate and relevant data to produce justifiable evidence-based explanations.</b>	
7.3S.1 Based on observations and science principles propose questions or hypotheses that can be examined through scientific investigation. Design and conduct a scientific investigation that uses appropriate tools and techniques to collect relevant data.	12-15, 16-24, 25-27, 28-34, 47-52, 60-68, 105-108
7.3S.2 Organize, display, and analyze relevant data, construct an evidence-based explanation of the results of an investigation, and communicate the conclusions including possible sources of error.	12-15, 16-24, 25-27, 28-34, 91-94, 95-98, 99-104, 171-176, 346-350, 370-374, 380-386,
7.3S.3 Evaluate the validity of scientific explanations and conclusions based on the amount and quality of the evidence cited.	691, 12-15, 25-27, 28-34, 42-46, 53-59, 114-118, 136-140, 159-165, 200, 351-353, 394, 552-561
<b>7.4 <u>Engineering Design</u>: Engineering design is a process of identifying needs, defining problems, identifying constraints, developing solutions, and evaluating proposed solutions.</b>	
7.4D.1 Define a problem that addresses a need and identify constraints that may be related to possible solutions.	16-24, 91-94, 99-104, 136-140, 182-184, 194-199, 295-300, 346-350, 375-379, 450-451, 473-477, 12-15, 16-24, 25-27, 28-34, 91-94, 95-98, 99-104, 171-176
7.4D.2 Design, construct, and test a possible solution using appropriate tools and materials. Evaluate the proposed solutions to identify how design constraints are addressed.	717-720, 155-158, 274-276
7.4D.3 Explain how new scientific knowledge can be used to develop new technologies and how new technologies can be used to generate new scientific knowledge.	647-653, 657-661, 662-667, 606-611

## Grade 8

Content Standards/Performance Expecations	Location/Page where Standard is found
8.1 <u>Structure and Function</u> : Systems and their components function at various levels of complexity.	

8.1P.1 Describe the atomic model and explain how the types and arrangements of atoms determine the physical and chemical properties of elements and compounds.	597-601, 540-544, 602-605, 606-610, 511-516, 506-510
8.1P.2 Explain how the Periodic Table is an organization of elements based on their physical and chemical properties.	606-610, 597-605, 657-661, 726-727
8.1P.3 Explain how the motion and spacing of particles determines states of matter.	545-551, 562-567, 568-572, 573-582, 583-590, 370-374, 375-379
<b>8.2 <u>Interaction and Change</u>: Systems interact with other systems.</b>	
8.2P.1 Compare and contrast physical and chemical changes and describe how the law of conservation of mass applies to these changes.	105-108, 109-113, 114-118, 380-386, 523, 506-510, 506-510, 523, 545-551, 562-567, 568-572, 573-582, 583-590
8.2P.2 Explain how energy is transferred, transformed, and conserved.	182-184, 185-187, 188-193, 194-199, 200-204, 205-208, 301-304, 481-485, 583-590, 380-387, 387-391
<b>8.3 <u>Scientific Inquiry</u>: Scientific inquiry is the investigation of the natural world based on observations and science principles that includes proposing questions or hypotheses and designing procedures for questioning, collecting, analyzing, and interpreting multiple forms of accurate and relevant data to produce justifiable evidence-based explanations and new explorations.</b>	
8.3S.1 Based on observations and science principles propose questions or hypotheses that can be examined through scientific investigation. Design and conduct a scientific investigation that uses appropriate tools, techniques, independent and dependent variables, and controls to collect relevant data.	8-11, 12-15, 16-24, 25-27, 28-34, 42-46, 60-68, 88-90, 95-98, 109-113, 136-140, 194-199, 254-260, 295-300, 398-403, 450-451, 499-503
8.3S.2 Organize, display, and analyze relevant data, construct an evidence-based explanation of the results of a scientific investigation, and communicate the conclusions including possible sources of error. Suggest new investigations based on analysis of results.	12-15, 25-27, 28-34, 42-46, 53-59, 114-118, 155-158, 351-353, 394, 552-561, 657-661, 205-208, 431-434, 504-505
8.3S.3 Explain how scientific explanations and theories evolve as new information becomes available.	16-24, 91-94, 99-104, 136-140, 182-184, 194-199, 295-300, 346-350, 375-379, 552-561, 597-601, 602-605, 606-610
<b>8.4 <u>Engineering Design</u>: Engineering design is a process of identifying needs, defining problems, identifying design criteria and constraints, developing solutions, and evaluating proposed solutions.</b>	

<p>8.4D.1 Define a problem that addresses a need, and using relevant science principles investigate possible solutions given specified criteria, constraints, priorities, and trade-offs.</p>	<p><b>717-720, 155-158, 274-276</b></p>
<p>8.4D.2 Design, construct, and test a proposed engineering design solution and collect relevant data. Evaluate a proposed design solution in terms of design and performance criteria, constraints, priorities, and trade-offs. Identify possible design improvements.</p>	<p><b>691, 12-15, 25-27, 28-34, 42-46, 53-59, 114-118, 136-140, 159-165, 200, 351-353, 394, 552-561</b></p>
<p>8.4D.3 Explain how creating a new technology requires considering societal goals, costs, priorities, and trade-offs.</p>	<p><b>16-24, 465-472, 606-610, 647-653, 657-661</b></p>