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Hawaii

**Content and Performance
Standards III
Grades 6-8**

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Hawaii Content and Performance Standards III
Grade 6

Hawaii HCPSIII Grade 6	Great Source <i>ScienceSaurus</i> ©2006
Strand: The Scientific Process	
Standard 1: The Scientific Process: SCIENTIFIC INVESTIGATION: Discover, invent, and investigate using the skills necessary to engage in the scientific process	
Topic: Scientific Inquiry	
SC.6.1.1 Formulate a testable hypothesis that can be answered through a controlled experiment	SE: 006-016, 017
SC.6.1.2 Use appropriate tools, equipment, and techniques safely to collect, display, and analyze data	SE: 020-026, 027, 028-034, 035-037, 038-042, 043-045, 046-048, 049-052, 051-072
Standard 2: The Scientific Process: NATURE OF SCIENCE: Understand that science, technology, and society are interrelated	
Topic: Science, Technology, and Society	
SC.6.2.1 Explain how technology has an impact on society and science	SE: 354-361, 362-373
SC.6.2.2 Explain how the needs of society have influenced the development and use of technologies	SE: 354-361, 362-373
Strand: Life and Environmental Sciences	
Standard 3: Life and Environmental Sciences: ORGANISMS AND THE ENVIRONMENT: Understand the unity, diversity, and interrelationships of organisms, including their relationship to cycles of matter and energy in the environment	
Topic: Cycles of Matter and Energy	
SC.6.3.1 Describe how matter and energy are transferred within and among living systems and their physical environment	SE: 250-273, 274-298, 299-321

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Standard 4: Life and Environmental Sciences: STRUCTURE AND FUNCTION IN ORGANISMS: Understand the structures and functions of living organisms and how organisms can be compared scientifically		
There are no benchmarks for this standard for this Grade/Course.		
Standard 5: Life and Environmental Sciences: DIVERSITY, GENETICS, AND EVOLUTION: Understand genetics and biological evolution and their impact on the unity and diversity of organisms		
There are no benchmarks for this standard for this Grade/Course.		
Strand: Physical, Earth, and Space Sciences		
Standard 6: Physical, Earth, and Space Sciences: NATURE OF MATTER AND ENERGY: Understand the nature of matter and energy, forms of energy (including waves) and energy transformations, and their significance in understanding the structure of the universe		
Topic: Energy and its Transformation		
SC.6.6.1	Compare how heat energy can be transferred through conduction, convection, and radiation	SE: 304-305
SC.6.6.2	Describe the different types of energy transformations	SE: 299-321
SC.6.6.3	Explain how energy can change forms and is conserved	SE: 300
SC.6.6.4	Describe and give examples of different types of energy waves	SE: 307
Topic: Nature of Matter		
SC.6.6.5	Explain how matter can change physical or chemical forms, but the total amount of matter remains constant	SE: 253-254
SC.6.6.6	Describe and compare the physical and chemical properties of different substances	SE: 251-252
SC.6.6.7	Describe the organization of the periodic table	SE: 265
SC.6.6.8	Recognize changes that indicate that a chemical reaction has taken place	SE: 269
SC.6.6.9	Describe matter using the atomic model	SE: 256

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Topic: Waves		
SC.6.6.10	Explain how vibrations in materials set up wavelike disturbances that spread away from the source	SE: 306-307
Standard 7: Physical, Earth, and Space Sciences: FORCE AND MOTION: Understand the relationship between force, mass, and motion of objects; and know the major natural forces: gravitational, electric, and magnetic		
Topic: Force and Motion		
SC.6.7.1	Describe examples of how forces affect an object's motion	SE: 274-298
Topic: Forces of the Universe		
SC.6.7.2	Explain that electric currents can produce magnetic effects and that magnets can cause electric currents	SE: 321
Standard 8: Physical, Earth, and Space Sciences: EARTH AND SPACE SCIENCE: Understand the Earth and its processes, the solar system, and the universe and its contents		
There are no benchmarks for this standard for this Grade/Course.		



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**Hawaii Content and Performance Standards III
Grade 7**

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Strand: The Scientific Process	
Standard 1: The Scientific Process: SCIENTIFIC INVESTIGATION: Discover, invent, and investigate using the skills necessary to engage in the scientific process	
Topic: Scientific Inquiry	
SC.7.1.1 Design and safely conduct a scientific investigation to answer a question or test a hypothesis	SE: 006-016, 017, 021-042, 044-045, 046-052, 053-072
SC.7.1.2 Explain the importance of replicable trials	The opportunity to address this objective is available. See the following: SE: 009, 387, 409
Topic: Scientific Knowledge	
SC.7.1.3 Explain the need to revise conclusions and explanations based on new scientific evidence	SE: 015, 016
Standard 2: The Scientific Process: NATURE OF SCIENCE: Understand that science, technology, and society are interrelated	
Topic: Science, Technology, and Society	
SC.7.2.1 Explain the use of reliable print and electronic sources to provide scientific information and evidence	SE: 005, 008-009, 420, 421, 422, 423, 424, 425
Strand: Life and Environmental Sciences	
Standard 3: Life and Environmental Sciences: ORGANISMS AND THE ENVIRONMENT: Understand the unity, diversity, and interrelationships of organisms, including their relationship to cycles of matter and energy in the environment	
Topic: Cycles of Matter and Energy	
SC.7.3.1 Explain how energy moves through food webs, including the roles of photosynthesis and cellular respiration	SE: 135, 136, 137-138

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Topic: Interdependence	
SC.7.3.2 Explain the interaction and dependence of organisms on one another	SE: 132-135
SC.7.3.3 Explain how biotic and abiotic factors affect the carrying capacity and sustainability of an ecosystem	SE: 136-139
Standard 4: Life and Environmental Sciences: STRUCTURE AND FUNCTION IN ORGANISMS: Understand the structures and functions of living organisms and how organisms can be compared scientifically	
Topic: Cells, Tissues, Organs, and Organ Systems	
SC.7.4.1 Describe the cell theory	SE: 076
SC.7.4.2 Describe the basic structure and function of various types of cells	SE: 076-079
SC.7.4.3 Describe the levels of organization in organisms	SE: 074-075
Topic: Classification	
SC.7.4.4 Classify organisms according to their degree of relatedness	SE: 150-151, 152-157, 158-162, 163, 164
Standard 5: Life and Environmental Sciences: DIVERSITY, GENETICS, AND EVOLUTION: Understand genetics and biological evolution and their impact on the unity and diversity of organisms	
Topic: Heredity	
SC.7.5.1 Differentiate between sexual and asexual reproduction	SE: 114
SC.7.5.2 Describe how an inherited trait can be determined by one or more genes which are found on chromosomes	SE: 116-118, 121-123
SC.7.5.3 Explain that small differences between parents and offspring could produce descendants that look very different from their ancestors	SE: 122, 123

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Topic: Unity and Diversity	
SC.7.5.4 Analyze how organisms' body structures contribute to their ability to survive and reproduce	SE: 127
Topic: Biological Evolution	
SC.7.5.5 Explain how fossils provide evidence that life and environmental conditions have changed over time	SE: 125, 126, 128
Topic: Unity and Diversity	
SC.7.5.6 Explain why variation(s) in a species' gene pool contributes to its survival in a constantly changing environment	SE: 127
Strand: Physical, Earth, and Space Sciences	
Standard 6: Physical, Earth, and Space Science: NATURE OF MATTER AND ENERGY: Understand the nature of matter and energy, forms of energy (including waves) and energy transformations, and their significance in understanding the structure of the universe	
There are no benchmarks for this standard for this Grade/Course.	
Standard 7: Physical, Earth, and Space Sciences: FORCE AND MOTION: Understand the relationship between force, mass, and motion of objects; and know the major natural forces: gravitational, electric, and magnetic	
There are no benchmarks for this standard for this Grade/Course.	
Standard 8: Physical, Earth, and Space Sciences: EARTH AND SPACE SCIENCE: Understand the Earth and its processes, the solar system, and the universe and its contents	
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Grade 8**

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Strand: The Scientific Process	
Standard 1: The Scientific Process: SCIENTIFIC INVESTIGATION: Discover, invent, and investigate using the skills necessary to engage in the scientific process	
Topic: Scientific Inquiry	
SC.8.1.1 Determine the link(s) between evidence and the conclusion(s) of an investigation	SE: 008-013, 015
SC.8.1.2 Communicate the significant components of the experimental design and results of a scientific investigation	SE: 015
Standard 2: The Scientific Process: NATURE OF SCIENCE: Understand that science, technology, and society are interrelated	
Topic: Science, Technology, and Society	
SC.8.2.1 Describe significant relationships among society, science, and technology and how one impacts the other	SE: 354, 355-356, 357-361, 362-370, 371-373
Topic: Unifying Concepts and Themes	
SC.8.2.2 Describe how scale and mathematical models can be used to support and explain scientific data	SE: 002, 006, 013, 018
Strand: Life and Environmental Sciences	
Standard 3: Life and Environmental Sciences: ORGANISMS AND THE ENVIRONMENT: Understand the unity, diversity, and interrelationships of organisms, including their relationship to cycles of matter and energy in the environment	
There are no benchmarks for this standard for this Grade/Course.	
Standard 4: Life and Environmental Sciences: STRUCTURE AND FUNCTION IN ORGANISMS: Understand the structures and functions of living organisms and how organisms can be compared scientifically	
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Standard 5: Life and Environmental Sciences: DIVERSITY, GENETICS, AND EVOLUTION: Understand genetics and biological evolution and their impact on the unity and diversity of organisms		
Topic: Biological Evolution		
SC.8.5.1	Describe how changes in the physical environment affect the survival of organisms	SE: 340-344, 345-353
Strand: Physical, Earth, and Space Sciences		
Standard 6: Physical, Earth, and Space Science: NATURE OF MATTER AND ENERGY: Understand the nature of matter and energy, forms of energy (including waves) and energy transformations, and their significance in understanding the structure of the universe		
Topic: Waves		
SC.8.6.1	Explain the relationship between the color of light and wavelength within the electromagnetic spectrum	SE: 308-309
SC.8.6.2	Explain how seismic waves provide scientists with information about the structure of Earth's interior	SE: 186
SC.8.6.3	Identify the characteristics and properties of mechanical and electromagnetic waves	SE: 305
Standard 7: Physical, Earth, and Space Sciences: FORCE AND MOTION: Understand the relationship between force, mass, and motion of objects; and know the major natural forces: gravitational, electric, and magnetic		
Topic: Forces of the Universe		
SC.8.7.1	Explain that every object has mass and therefore exerts a gravitational force on other objects	SE: 063, 275, 276

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Standard 8: Physical, Earth, and Space Sciences: EARTH AND SPACE SCIENCE: Understand the Earth and its processes, the solar system, and the universe and its contents	
Topic: Earth Materials	
SC.8.8.1 Compare the characteristics of the three main types of rocks	SE: 180
SC.8.8.2 Illustrate the rock cycle and explain how igneous, metamorphic, and sedimentary rocks are formed	SE: 180
Topic: Earth in the Solar System	
SC.8.8.3 Describe how the Earth's motions and tilt on its axis affect the seasons and weather patterns	SE: 232, 233, 234
Topic: Forces that Shape the Earth	
SC.8.8.4 Explain how the sun is the major source of energy influencing climate and weather on Earth	SE: 228, 233, 234
SC.8.8.5 Explain the concepts of continental drift and plate tectonics	SE: 182, 199
SC.8.8.6 Explain the relationship between density and convection currents in the ocean and atmosphere	SE: 183
SC.8.8.7 Describe the physical characteristics of oceans	SE: 183-185, 202, 203-206, 207-211
Topic: The Universe	
SC.8.8.8 Describe the composition of objects in the galaxy	SE: 247
SC.8.8.9 Explain the predictable motions of the Earth and moon	SE: 232-236
SC.8.8.10 Compare the characteristics and movement patterns of the planets in our solar system	SE: 240
SC.8.8.11 Describe the major components of the universe	SE: 238-248

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SC.8.8.12 Describe the role of gravitational force in the motions of planetary systems	SE: 276, 278



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