Florida Science

Environmental Science (2024)

Analyze past, present, and potential future consequences to the environment resulting from various energy production technologies. SC.912.E.6.6	1 Analyze past, present, and potential future consequences to the environment resulting from various energy production technologies. SC.912.E.6.6
Identify, analyze, and relate the internal (Earth system) and external (astronomical) conditions that contribute to global climate change. SC.912.E.7.7	2 Identify, analyze, and relate the internal (Earth system) and external (astronomical) conditions that contribute to global climate change. SC.912.E.7.7
Explain how various atmospheric, oceanic, and hydrologic conditions in Florida have influenced and can influence human behavior, both individually and collectively. SC.912.E.7.8	3 Explain how various atmospheric, oceanic, and hydrologic conditions in Florida have influenced and can influence human behavior, both individually and collectively. SC.912.E.7.8
Cite evidence that the ocean has had a significant influence on climate change by absorbing, storing, and moving heat, carbon, and water. SC.912.E.7.9	4 Cite evidence that the ocean has had a significant influence on climate change by absorbing, storing, and moving heat, carbon, and water. SC.912.E.7.9
Explain the significance of genetic factors, environmental factors, an to perspectives of both	5 Explain the significance of genetic factors, environmental factors, and pathogenic agents to health from the perspectives of both individual and public health. SC.912.L.14.6

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individual and public health. SC.912.L.14.6	
Describe how biological diversity is increased by the origin of new species and how it is decreased by the natural process of extinction. SC.912.L.15.3	6 Describe how biological diversity is increased by the origin of new species and how it is decreased by the natural process of extinction. SC.912.L.15.3
Describe the conditions required for natural selection, including: overproduction of offspring, inherited variation, and the struggle to survive, which result in differential reproductive success. SC.912.L.15.13	7 Describe the conditions required for natural selection, including: overproduction of offspring, inherited variation, and the struggle to survive, which result in differential reproductive success. SC.912.L.15.13
Evaluate the impact of biotechnology on the individual, society and the environment, including medical and ethical issues. SC.912.L.16.10	8 Evaluate the impact of biotechnology on the individual, society and the environment, including medical and ethical issues. SC.912.L.16.10
Discuss the characteristics of populations, such as number of individuals, age structure, density, and pattern of distribution. SC.912.L.17.1	9 Discuss the characteristics of populations, such as number of individuals, age structure, density, and pattern of distribution. SC.912.L.17.1
Describe changes in ecosystems resulting from seasonal variations, climate change and succession. SC.912.L.17.4	10 Describe changes in ecosystems resulting from seasonal variations, climate change and succession. SC.912.L.17.4
Analyze how population size is determined by bir im emigration, and limiting	11 Analyze how population size is determined by births, deaths, immigration, emigration, and limiting factors (biotic and abiotic) that determine carrying capacity. SC.912.L.17.5

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factors (biotic and abiotic) that determine carrying capacity. SC.912.L.17.5	
Compare and contrast the relationships among organisms, including predation, parasitism, competition, commensalism, and mutualism. SC.912.L.17.6	12 Compare and contrast the relationships among organisms, including predation, parasitism, competition, commensalism, and mutualism. SC.912.L.17.6
Characterize the biotic and abiotic components that define freshwater systems, marine systems and terrestrial systems. SC.912.L.17.7	13 Characterize the biotic and abiotic components that define freshwater systems, marine systems and terrestrial systems. SC.912.L.17.7
Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species. SC.912.L.17.8	14 Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species. SC.912.L.17.8
Use a food web to identify and distinguish producers, consumers, and decomposers. Explain the pathway of energy transfer through trophic levels and the reduction of available energy at successive trophic levels. SC.912.L.17.9	15 Use a food web to identify and distinguish producers, consumers, and decomposers. Explain the pathway of energy transfer through trophic levels and the reduction of available energy at successive trophic levels. SC.912.L.17.9
Diagram and explain the biogeochemical cycles of an ecosystem, including water, carbon, an cy	16 Diagram and explain the biogeochemical cycles of an ecosystem, including water, carbon, and nitrogen cycle. SC.912.L.17.10

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Evaluate the costs and benefits of renewable and nonrenewable resources, such as water, energy, fossil fuels, wildlife, and forests. SC.912.L.17.11	**17** **Evaluate the costs and benefits of renewable and nonrenewable resources, such as water, energy, fossil fuels, wildlife, and forests.** SC.912.L.17.11
Discuss the political, social, and environmental consequences of sustainable use of land. SC.912.L.17.12	**18** **Discuss the political, social, and environmental consequences of sustainable use of land.** SC.912.L.17.12
Discuss the need for adequate monitoring of environmental parameters when making policy decisions. SC.912.L.17.13	**19** **Discuss the need for adequate monitoring of environmental parameters when making policy decisions.** SC.912.L.17.13
Assess the need for adequate waste management strategies. SC.912.L.17.14	**20** **Assess the need for adequate waste management strategies.** SC.912.L.17.14
Discuss the effects of technology on environmental quality. SC.912.L.17.15	**21** **Discuss the effects of technology on environmental quality.** SC.912.L.17.15
Discuss the large-scale environmental impacts resulting from human activity, including waste spills, oil spills, runoff, greenhouse gases, ozone depletion, and surface and groundwater pollution. SC.912.L.17.16	**22** **Discuss the large-scale environmental impacts resulting from human activity, including waste spills, oil spills, runoff, greenhouse gases, ozone depletion, and surface and groundwater pollution.** SC.912.L.17.16
Describe how human population size and resource use relate to en qu	**23** **Describe how human population size and resource use relate to environmental quality.** SC.912.L.17.18

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Describe how different natural resources are produced and how their rates of use and renewal limit availability. SC.912.L.17.19	**24** Describe how different natural resources are produced and how their rates of use and renewal limit availability. SC.912.L.17.19
Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability. SC.912.L.17.20	**25** Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability. SC.912.L.17.20
Define a problem based on a specific body of knowledge, for example: biology, chemistry, physics, and earth/space science, and do the following: SC.912.N.1.1	**1** Pose questions about the natural world, (Articulate the purpose of the investigation and identify the relevant scientific concepts). SC.912.N.1.1.1
	2 Conduct systematic observations, (Write procedures that are clear and replicable. Identify observables and examine relationships between test (independent) variable and outcome (dependent) variable. Employ appropriate methods for accurate and consistent observations; conduct and record measurements at appropriate levels of precision. Follow safety guidelines). SC.912.N.1.1.2
	3 Examine books and other sources of information to see what is already known, SC.912.N.1.1.3
	4 Review what is known in light of empirical evidence, (Examine whether available empirical evidence can be interpreted in terms of existing knowledge and models, and if not, modify or develop new models). SC.912.N.1.1.4
	5 Plan investigations, (Design and evaluate a scientific investigation). SC.912.N.1.1.5
	6 Use tools to gather, analyze, and interpret data (this includes the use of measurement in metric and other systems, and also the generation and interpretation of graphical representations of data, including data tables and graphs), (Collect data or evidence in an organized way. Properly use instruments, equipment, and materials (e.g., scales, probeware, meter sticks, microscopes, computers) including set-up, calibration, technique, maintenance, and storage). SC.912.N.1.1.6
	7 Pose answers, explanations, or descriptions of events, SC.912.N.1.1.7
	8 Generate explanations that explicate or describe natural phenomena (inferences), SC.912.N.1.1.8
	9 Use appropriate evidence and reasoning to justify these explanations to others, SC.912.N.1.1.9

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	10 Communicate results of scientific investigations, and SC.912.N.1.1.10
	11 Evaluate the merits of the explanations produced by others. SC.912.N.1.1.11
Describe and explain what characterizes science and its methods. SC.912.N.1.2	**27** Describe and explain what characterizes science and its methods. SC.912.N.1.2
Recognize that the strength or usefulness of a scientific claim is evaluated through scientific argumentation, which depends on critical and logical thinking, and the active consideration of alternative scientific explanations to explain the data presented. SC.912.N.1.3	**28** Recognize that the strength or usefulness of a scientific claim is evaluated through scientific argumentation, which depends on critical and logical thinking, and the active consideration of alternative scientific explanations to explain the data presented. SC.912.N.1.3
Identify sources of information and assess their reliability according to the strict standards of scientific investigation. SC.912.N.1.4	**29** Identify sources of information and assess their reliability according to the strict standards of scientific investigation. SC.912.N.1.4
Describe and provide examples of how similar investigations conducted in many parts of the world result in the same outcome. SC.912.N.1.5	**30** Describe and provide examples of how similar investigations conducted in many parts of the world result in the same outcome. SC.912.N.1.5
Describe how scientific inferences are drawn from scientific observations and provide examples from the content being studied. SC.912.N.1.6	**31** Describe how scientific inferences are drawn from scientific observations and provide examples from the content being studied. SC.912.N.1.6

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Identify what is science, what clearly is not science, and what superficially resembles science (but fails to meet the criteria for science). SC.912.N.2.1	**32 Identify what is science, what clearly is not science, and what superficially resembles science (but fails to meet the criteria for science).** SC.912.N.2.1
Identify which questions can be answered through science and which questions are outside the boundaries of scientific investigation, such as questions addressed by other ways of knowing, such as art, philosophy, and religion. SC.912.N.2.2	**33 Identify which questions can be answered through science and which questions are outside the boundaries of scientific investigation, such as questions addressed by other ways of knowing, such as art, philosophy, and religion.** SC.912.N.2.2
Explain that scientific knowledge is both durable and robust and open to change. Scientific knowledge can change because it is often examined and re-examined by new investigations and scientific argumentation. Because of these frequent examinations, scientific knowledge becomes stronger, leading to its durability. SC.912.N.2.4	**34 Explain that scientific knowledge is both durable and robust and open to change. Scientific knowledge can change because it is often examined and re-examined by new investigations and scientific argumentation. Because of these frequent examinations, scientific knowledge becomes stronger, leading to its durability.** SC.912.N.2.4
Explain that a scientific theory is the culmination of many scientific investigations drawing together all the current evidence concerning a substantial range of phenomena; thus, a scientific theory rep po	**35 Explain that a scientific theory is the culmination of many scientific investigations drawing together all the current evidence concerning a substantial range of phenomena; thus, a scientific theory represents the most powerful explanation scientists have to offer.** SC.912.N.3.1

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scientists have to offer. SC.912.N.3.1	
Describe the function of models in science, and identify the wide range of models used in science. SC.912.N.3.5	36 Describe the function of models in science, and identify the wide range of models used in science. SC.912.N.3.5
Explain how scientific knowledge and reasoning provide an empirically-based perspective to inform society's decision making. SC.912.N.4.1	37 Explain how scientific knowledge and reasoning provide an empirically-based perspective to inform society's decision making. SC.912.N.4.1
Differentiate among the various forms of energy and recognize that they can be transformed from one form to others. SC.912.P.10.1	38 Differentiate among the various forms of energy and recognize that they can be transformed from one form to others. SC.912.P.10.1
Explore the Law of Conservation of Energy by differentiating among open, closed, and isolated systems and explain that the total energy in an isolated system is a conserved quantity. SC.912.P.10.2	39 Explore the Law of Conservation of Energy by differentiating among open, closed, and isolated systems and explain that the total energy in an isolated system is a conserved quantity. SC.912.P.10.2
Actively participate in effortful learning both individually and collectively. MA.K12.MTR.1.1	40 Actively participate in effortful learning both individually and collectively. MA.K12.MTR.1.1
Demonstrate understanding by representing problems in multiple ways. MA.K12.MTR.2.1	41 Demonstrate understanding by representing problems in multiple ways. MA.K12.MTR.2.1
Co Skip to main content ma	Complete tasks with mathematical fluency. MA.K12.MTR.3.1

fluency. MA.K12.MTR.3.1

Engage in discussions that reflect on the mathematical thinking of self and others. MA.K12.MTR.4.1	43 Engage in discussions that reflect on the mathematical thinking of self and others. MA.K12.MTR.4.1
Use patterns and structure to help understand and connect mathematical concepts. MA.K12.MTR.5.1	44 Use patterns and structure to help understand and connect mathematical concepts. MA.K12.MTR.5.1
Assess the reasonableness of solutions. MA.K12.MTR.6.1	45 Assess the reasonableness of solutions. MA.K12.MTR.6.1
Apply mathematics to real-world contexts. MA.K12.MTR.7.1	46 Apply mathematics to real-world contexts. MA.K12.MTR.7.1
Cite evidence to explain and justify reasoning. ELA.K12.EE.1.1	47 Cite evidence to explain and justify reasoning. ELA.K12.EE.1.1
Read and comprehend grade-level complex texts proficiently. ELA.K12.EE.2.1	48 Read and comprehend grade-level complex texts proficiently. ELA.K12.EE.2.1
Make inferences to support comprehension. ELA.K12.EE.3.1	49 Make inferences to support comprehension. ELA.K12.EE.3.1
Use appropriate collaborative techniques and active listening skills when engaging in discussions in a variety of situations. ELA.K12.EE.4.1	50 Use appropriate collaborative techniques and active listening skills when engaging in discussions in a variety of situations. ELA.K12.EE.4.1
Use the accepted rules go for wo	51 Use the accepted rules governing a specific format to create quality work. ELA.K12.EE.5.1

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Use appropriate voice and tone when speaking or writing. ELA.K12.EE.6.1	**52** **Use appropriate voice and tone when speaking or writing.** ELA.K12.EE.6.1
English language learners communicate information, ideas and concepts necessary for academic success in the content area of Science. ELD.K12.ELL.SC.1	**53** **English language learners communicate information, ideas and concepts necessary for academic success in the content area of Science.** ELD.K12.ELL.SC.1
English language learners communicate for social and instructional purposes within the school setting. ELD.K12.ELL.SI.1	**54** **English language learners communicate for social and instructional purposes within the school setting.** ELD.K12.ELL.SI.1
(Archived Standard): Evaluate how environment and personal health are interrelated. HE.912.C.1.3	**55** **(Archived Standard): Evaluate how environment and personal health are interrelated.** HE.912.C.1.3
(Archived Standard): Analyze how heredity and family history can impact personal health. HE.912.C.1.7	**56** **(Archived Standard): Analyze how heredity and family history can impact personal health.** HE.912.C.1.7