

Benchmark Results

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Benchmark#	Description	Remarks/Example	Idea/Standard	Subject	Grade	Body Of Knowledge/ Strand	Cognitive Complexity Rating	Da Ad Re
SC.7.E.6.1	Describe the layers of the solid Earth, including the lithosphere, the hot convecting mantle, and the dense metallic liquid and solid cores.		Earth Structures	29	7	Earth and Space Science	Level 2: Basic Application of Skills & Concepts	05/
SC.7.E.6.2	Identify the patterns within the rock cycle and relate them to surface events (weathering and erosion) and sub-surface events (plate tectonics and mountain building).		Earth Structures	29	7	Earth and Space Science	Level 3: Strategic Thinking & Complex Reasoning	05/
SC.7.E.6.3	Identify current methods for measuring the age of Earth and its parts, including the law of superposition and radioactive dating.		Earth Structures	29	7	Earth and Space Science	Level 2: Basic Application of Skills & Concepts	05/
SC.7.E.6.4	Explain and give examples of how physical evidence supports scientific theories that		Earth Structures	29	7	Earth and Space Science	Level 3: Strategic Thinking & Complex Reasoning	05/

	Earth has evolved over geologic time due to natural processes.							
SC.7.E.6.5	Explore the scientific theory of plate tectonics by describing how the movement of Earth's crustal plates causes both slow and rapid changes in Earth's surface, including volcanic eruptions, earthquakes, and mountain building.		Earth Structures	29	7	Earth and Space Science	Level 2: Basic Application of Skills & Concepts	05/
SC.7.E.6.6	Identify the impact that humans have had on Earth, such as deforestation, urbanization, desertification, erosion, air and water quality, changing the flow of water.		Earth Structures	29	7	Earth and Space Science	Level 2: Basic Application of Skills & Concepts	05/
SC.7.E.6.7	Recognize that heat flow and movement of material within Earth causes earthquakes and volcanic eruptions, and creates mountains and ocean basins.		Earth Structures	29	7	Earth and Space Science	Level 2: Basic Application of Skills & Concepts	05/
SC.7.L.15.1	Recognize that		Diversity and	29	7	Life Science	Level 2:	05/

	fossil evidence is consistent with the scientific theory of evolution that living things evolved from earlier species.		Evolution of Living Organisms				Basic Application of Skills & Concepts	
SC.7.L.15.2	Explore the scientific theory of evolution by recognizing and explaining ways in which genetic variation and environmental factors contribute to evolution by natural selection and diversity of organisms.		Diversity and Evolution of Living Organisms	29	7	Life Science	Level 3: Strategic Thinking & Complex Reasoning	05/
SC.7.L.15.3	Explore the scientific theory of evolution by relating how the inability of a species to adapt within a changing environment may contribute to the extinction of that species.		Diversity and Evolution of Living Organisms	29	7	Life Science	Level 3: Strategic Thinking & Complex Reasoning	05/
SC.7.L.16.1	Understand and explain that every organism requires a set of instructions that specifies its traits, that this hereditary information (DNA) contains genes located in the		Heredity and Reproduction	29	7	Life Science	Level 3: Strategic Thinking & Complex Reasoning	05/

	chromosomes of each cell, and that heredity is the passage of these instructions from one generation to another.							
SC.7.L.16.2	Determine the probabilities for genotype and phenotype combinations using Punnett Squares and pedigrees.		Heredity and Reproduction	29	7	Life Science	Level 2: Basic Application of Skills & Concepts	05/
SC.7.L.16.3	Compare and contrast the general processes of sexual reproduction requiring meiosis and asexual reproduction requiring mitosis.		Heredity and Reproduction	29	7	Life Science	Level 2: Basic Application of Skills & Concepts	05/
SC.7.L.16.4	Recognize and explore the impact of biotechnology (cloning, genetic engineering, artificial selection) on the individual, society and the environment.		Heredity and Reproduction	29	7	Life Science	Level 3: Strategic Thinking & Complex Reasoning	05/
SC.7.L.17.1	Explain and illustrate the roles of and relationships among producers,		Interdependence	29	7	Life Science	Level 3: Strategic Thinking & Complex Reasoning	05/

	consumers, and decomposers in the process of energy transfer in a food web.							
SC.7.L.17.2	Compare and contrast the relationships among organisms such as mutualism, predation, parasitism, competition, and commensalism.		Interdependence	29	7	Life Science	Level 2: Basic Application of Skills & Concepts	05/
SC.7.L.17.3	Describe and investigate various limiting factors in the local ecosystem and their impact on native populations, including food, shelter, water, space, disease, parasitism, predation, and nesting sites.		Interdependence	29	7	Life Science	Level 3: Strategic Thinking & Complex Reasoning	05/
SC.7.N.1.1	Define a problem from the seventh grade curriculum, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigation of various types, such as systematic		The Practice of Science	29	7	Nature of Science	Level 3: Strategic Thinking & Complex Reasoning	05/

	observations or experiments, identify variables, collect and organize data, interpret data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.							
SC.7.N.1.2	Differentiate replication (by others) from repetition (multiple trials).		The Practice of Science	29	7	Nature of Science	Level 2: Basic Application of Skills & Concepts	05/
SC.7.N.1.3	Distinguish between an experiment (which must involve the identification and control of variables) and other forms of scientific investigation and explain that not all scientific knowledge is derived from experimentation.		The Practice of Science	29	7	Nature of Science	Level 2: Basic Application of Skills & Concepts	05/
SC.7.N.1.4	Identify test variables (independent variables) and outcome variables (dependent variables) in an experiment.		The Practice of Science	29	7	Nature of Science	Level 1: Recall	05/
SC.7.N.1.5	Describe the		The Practice of	29	7	Nature of	Level 2:	05/

	methods used in the pursuit of a scientific explanation as seen in different fields of science such as biology, geology, and physics.		Science			Science	Basic Application of Skills & Concepts	
SC.7.N.1.6	Explain that empirical evidence is the cumulative body of observations of a natural phenomenon on which scientific explanations are based.		The Practice of Science	29	7	Nature of Science	Level 2: Basic Application of Skills & Concepts	05/
SC.7.N.1.7	Explain that scientific knowledge is the result of a great deal of debate and confirmation within the science community.		The Practice of Science	29	7	Nature of Science	Level 2: Basic Application of Skills & Concepts	05/
SC.7.N.2.1	Identify an instance from the history of science in which scientific knowledge has changed when new evidence or new interpretations are encountered.		The Characteristics of Scientific Knowledge	29	7	Nature of Science	Level 1: Recall	05/
SC.7.N.3.1	Recognize and explain the difference between theories and laws and give several		The Role of Theories, Laws, Hypotheses, and Models	29	7	Nature of Science	Level 3: Strategic Thinking & Complex Reasoning	05/

	examples of scientific theories and the evidence that supports them.							
SC.7.N.3.2	Identify the benefits and limitations of the use of scientific models.		The Role of Theories, Laws, Hypotheses, and Models	29	7	Nature of Science	Level 2: Basic Application of Skills & Concepts	05/
SC.7.P.10.1	Illustrate that the sun's energy arrives as radiation with a wide range of wavelengths, including infrared, visible, and ultraviolet, and that white light is made up of a spectrum of many different colors.		Forms of Energy	29	7	Physical Science	Level 1: Recall	05/
SC.7.P.10.2	Observe and explain that light can be reflected, refracted, and/or absorbed.		Forms of Energy	29	7	Physical Science	Level 3: Strategic Thinking & Complex Reasoning	05/
SC.7.P.10.3	Recognize that light waves, sound waves, and other waves move at different speeds in different materials.		Forms of Energy	29	7	Physical Science	Level 1: Recall	05/
SC.7.P.11.1	Recognize that adding heat to or removing heat from a system may result in a temperature change and		Energy Transfer and Transformations	29	7	Physical Science	Level 1: Recall	05/

	possibly a change of state.							
SC.7.P.11.2	Investigate and describe the transformation of energy from one form to another.		Energy Transfer and Transformations	29	7	Physical Science	Level 2: Basic Application of Skills & Concepts	05/
SC.7.P.11.3	Cite evidence to explain that energy cannot be created nor destroyed, only changed from one form to another.		Energy Transfer and Transformations	29	7	Physical Science	Level 3: Strategic Thinking & Complex Reasoning	05/
SC.7.P.11.4	Observe and describe that heat flows in predictable ways, moving from warmer objects to cooler ones until they reach the same temperature.		Energy Transfer and Transformations	29	7	Physical Science	Level 2: Basic Application of Skills & Concepts	05/