UTAH EDITION

Inspire Science

Teacher Edition

Mc Graw Hill

Correlations by Lesson to the UTAH Academic Standards for Science Grade 6

Standard 6.1.1 Develop and use a model of the Sun-Earth-Moon system to describe the cyclic patterns of lunar phases, eclipses of the Sun and Moon, and seasons. Examples of models could be physical, graphical, or conceptual.	Student Edition: 2-37 Encounter/Explain the Phenomenon 1, 16, 27 Investigations 18-19, 33 Labs 22, 29, 31 STEM Project: Patterns in the Sky 38-40
Standard 6.1.2 Develop and use a model to describe the role of gravity and inertia in orbital motions of objects in our solar system.	Student Edition: 44-55 Encounter/Explain the Phenomenon 45 Investigations 46, 50 Labs 48 STEM Project: Wanted: Space Investigator 72-74
Standard 6.1.3 Use computational thinking to analyze data and determine the scale and properties of objects in the solar system. Examples of scale could include size and distance. Examples of properties could include layers, temperature, surface features, and orbital radius. Data sources could include Earth and space-based instruments such as telescopes and satellites. Types of data could include graphs, data tables, drawings, photographs, and models.	Student Edition: 57-71 Encounter/Explain the Phenomenon 57 Investigations 59-60, 65, 68 Labs 61-63 STEM Project: Wanted: Space Investigator 72-74
Standard 6.2.1 Develop models to show that molecules are made of different kinds, proportions and quantities of atoms. Emphasize understanding that there are differences between atoms and molecules, and that certain combinations of atoms form specific molecules. Examples of simple molecules could include water (H_2O), atmospheric oxygen (O_2), and carbon dioxide (CO_2).	Student Edition: 88-95, 124-139 Encounter/Explain the Phenomenon 125 Investigations 91, 93, 130, 132, 133 Labs 131 STEM Project: Cycling Across the States 140-144
Standard 6.2.2 Develop a model to predict the effect of heat energy on states of matter and density. Emphasize the arrangement of particles in states of matter (solid, liquid, or gas) and during phase changes (melting, freezing, condensing, and evaporating).	Student Edition: 79-87, 96-111, 148-165, 177-179, 186-193, 199-200 Encounter/Explain the Phenomenon 79, 97, 149, 167 Investigations 84, 101, 104, 155, 178 Labs 99 STEM Project: Cycling Across the States 140-144, Cookin' with the Sun 208-210
Standard 6.2.3 Plan and carry out an investigation to determine the relationship between temperature, the amount of heat transferred, and the change of average particle motion in various types or amounts of matter. Emphasize recording and evaluating data, and communicating the results of the investigation	Student Edition: 168-176, 180-181 Investigations 152, 157, 158, 170, 172, 176, 199 Labs 150, 160-161, 168-169, 185, 187, 189, 203 STEM Project: Cookin' with the Sun 208-210

Standard 6.2.4 Design an object, tool, or process that minimizes or maximizes heat energy transfer. Identify criteria and constraints, develop a prototype for iterative testing, analyze data from testing, and propose modifications for optimizing the design solution. Emphasize demonstrating how the structure of differing materials allows them to function as either conductors or insulators.	Student Edition: 198-207 Labs 198, 203
Standard 6.3.1 Develop a model to describe how the cycling of water through Earth's systems is driven by energy from the Sun, gravitational forces, and density.	Student Edition: 214-237 Encounter/Explain the Phenomenon 215, 227, 235 Investigations 231 Labs 218, 221, 228 STEM Project: Dinosaurs and Dew 238-240
Standard 6.3.2 Investigate the interactions between air masses that cause changes in weather conditions. Collect and analyze weather data to provide evidence for how air masses flow from regions of high pressure to low pressure causing a change in weather. Examples of data collection could include field observations, laboratory experiments, weather maps, or diagrams.	Student Edition: 280-299 Encounter/Explain the Phenomenon 281 Investigations 285, 287, 288, 289, 292 Labs 284, 294-295 STEM Project:
Standard 6.3.3 Develop and use a model to show how unequal heating of the Earth's systems causes patterns of atmospheric and oceanic circulation that determine regional climates. Emphasize how warm water and air move from the equator toward the poles. Examples of models could include Utah regional weather patterns such as lake-effect snow and wintertime temperature inversions.	Student Edition: 248-249, 264-274, 301-305 Encounter/Explain the Phenomenon 265 Investigations 267, 268, 269, 303 Labs 248, 266, 272 STEM Project: As the Water Churns 318-320
Standard 6.3.4 Construct an explanation supported by evidence for the role of the natural greenhouse effect in Earth's energy balance, and how it enables life to exist on Earth. Examples could include comparisons between Earth and other planets such as Venus and Mars	Student Edition: 257-258 Investigations Labs 259-260
Standard 6.4.1 Analyze data to provide evidence for the effects of resource availability on organisms and populations in an ecosystem. Ask questions to predict how changes in resource availability affects organisms in those ecosystems. Examples could include water, food, and living space in Utah environments.	Student Edition: 374-381 Encounter/Explain the Phenomenon 371 Investigations 376 Labs 374 STEM Project: The Fox and the Hare 408-410
Standard 6.4.2 Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems. Emphasize consistent interactions in different environments, such as competition, predation, and mutualism.	Student Edition: 382-393 Encounter/Explain the Phenomenon 383 Investigations 384, 385, 389 Labs 387 STEM Project: The Fox and the Hare 408-410

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Standard 6.4.3 Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem. Emphasize food webs and the role of producers, consumers, and decomposers in various ecosystems. Examples could include Utah ecosystems such as mountains, Great Salt Lake, wetlands, and deserts.	Student Edition: 324-325, 329, 335, 338-363 Encounter/Explain the Phenomenon 325, 339, 353 Investigations 340, 342 Labs 344, 347, 355, 358 STEM Project: Sun Block 364-366
Standard 6.4.4 Construct an argument supported by evidence that the stability of populations is affected by changes to an ecosystem. Emphasize how changes to living and nonliving components in an ecosystem affect populations in that ecosystem. Examples could include Utah ecosystems such as mountains, Great Salt Lake, wetlands, and deserts.	Student Edition: 394-407 Encounter/Explain the Phenomenon 395 Investigations 396, 399, 402, 404 Labs 400 STEM Project: The Fox and the Hare 408-410
Standard 6.4.5 Evaluate competing design solutions for preserving ecosystem services that protect resources and biodiversity based on how well the solutions maintain stability within the ecosystem. Emphasize obtaining, evaluating, and communicating information of differing design solutions. Examples could include policies affecting ecosystems, responding to invasive species or solutions for the preservation of ecosystem resources specific to Utah, such as air and water quality and prevention of soil erosion.	Student Edition: 438-451 Encounter/Explain the Phenomenon 439 Investigations 445 Labs 444 STEM Project: Good “greef”! The corals are dying 451-453