

TITLE	CO STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
All About the Moon ISBN 0022859330 6 PK ISBN 002286654X	4.14, 4.15, 4.17, 5.2, 5.3, 5.5	Z	730	<i>All About the Moon</i> compares and contrasts Earth and the Moon, describes the history of the Moon landings, explains the motion of the Moon, and discusses the phases of the Moon.	crater lunar mare orbit satellite
Alloys ISBN 0022859381 6 PK ISBN 0022866574	2.1, 2.2, 4.17, 5.2, 5.3, 5.5	Y	860	<i>Alloys</i> describes historical uses of metals and alloys, such as bronze and iron. It also describes current applications of alloys and possible future uses of alloys.	alloy bronze corrosion iron steel
Amazing Water ISBN 0022859209 6 PK ISBN 0022866558	2.1, 2.2, 2.5, 3.4, 4.2, 4.12, 5.5	T	560	The unique properties of water, uses of water, the water cycle, water pollution, and the possibility of water on other planets are described in <i>Amazing Water</i> .	condense evaporate precipitation solvent surface tension
Animal Migration ISBN 0022859179 6 PK ISBN 0022866426	3.11	S	670	<i>Animal Migration</i> explores the migration patterns of whales, monarch butterflies, warblers, and sea turtles. The life cycle of the Monarch butterfly is diagrammed, and maps are used to illustrate migration routes.	habitat metamorphosis migration plankton predator
Antarctica: Land of Snow and Ice ISBN 0022847324 6 PK ISBN 0022865179	3.8, 3.11, 4.13, 5.2, 5.3, 5.5	V	900	In <i>Antarctica: Land of Snow and Ice</i> , the terms <i>habitat</i> , <i>biome</i> , and <i>ecosystem</i> are defined. The climate and living things of Antarctica are described.	biome ecosystem glacier habitat microhabitat
Bacteria and Viruses ISBN 0022859292 6 PK ISBN 0022866442	3.1, 3.6, 3.7, 3.8, 3.9, 5.2, 5.3, 5.5	Y	660	<i>Bacteria and Viruses</i> begins with a discussion of early discoveries related to microscopes and microorganisms. Various types of bacteria are discussed and pictured. The role of bacteria in ecosystems and ways that bacteria impact humans are also discussed.	antibiotic microscope pasteurization virus

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Building a Biome * ISBN 0022847332 6 PK ISBN 0022865187	3.8, 5.5	X	910	Construction of the deserts biome in the Indianapolis Zoo is described in <i>Building a Biome</i> . Characteristics of desert biomes are described and career opportunities at zoos are identified.	biome conservation ecosystem precipitation species
Carbon ISBN 0022859217 6 PK ISBN 0022866582	2.5, 2.6, 3.5, 3.8, 3.11, 3.12, 4.2, 4.6, 5.2	S	600	<i>Carbon</i> describes forms of carbon, uses of carbon, the role of carbon in living things, the carbon cycle, fossil fuels, and the greenhouse effect.	Atom compound element organic compound respiration
Changes at Earth's Surface ISBN 0022847421 6 PK ISBN 0022865276	4.3	V	880	<i>Changes at Earth's Surface</i> describes physical and chemical weathering, erosion, deposition, and the changes that result from these processes.	chemical weathering deposition erosion gravity physical weathering
Chemical Changes * ISBN 0022859276 6 PK ISBN 0022866590	2.1, 2.5, 2.6	X	630	<i>Chemical Changes</i> contains a description of the signs that indicate a chemical change has occurred, everyday applications of chemical changes, and chemical changes that occur in organisms.	chemical change combustion compound element reaction
Discovering the Secrets of Cells * ISBN 0022859233 6 PK ISBN 0022866469	3.3, 3.6, 3.10, 5.2, 5.3, 5.5	X	720	<i>Discovering the Secrets of Cells</i> explores careers in cell biology, the function of organelles, and tools such as computers that are used in cell research.	Cell DNA gene neuron nucleus
DNA Fingerprinting ISBN 0022859322 6 PK ISBN 0022866515	3.10, 3.12, 5.2, 5.5	Y	720	<i>DNA Fingerprinting</i> describes applications of DNA technology to solving crimes, tracing ancestry, solving historical mysteries, and tracking genetic diseases.	Base DNA fingerprinting gene inherit mutation

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Do Fossil Fuels Have a Future? * ISBN 0022847499 6 PK ISBN 0022865349	3.8, 3.11, 4.2, 4.8, 5.2, 5.5	X	900	<i>Do Fossil Fuels Have a Future?</i> explains the formation of fossil fuels, methods of mining fossil fuels, consequences of the use of fossil fuels, and possible alternatives to fossil fuels.	acid rain coal decompose fossil fuel petroleum
Earth's Changing Climate * ISBN 002285925X 6 PK ISBN 0022866523	1.4, 3.11, 3.12, 5.3, 5.5	W	740	Climate, climate change, and the science of studying climates are discussed in <i>Earth's Changing Climate</i> .	climate climatologist core drought weather
Ecosystems ISBN 0022847316 6 PK ISBN 0022865160	3.8, 3.11, 5.2, 5.3, 5.5	Y	910	<i>Ecosystems</i> discusses energy flow within ecosystems, human impact on ecosystems, and ways that individuals can have a positive impact on ecosystems.	conservation consumer decomposer ecosystem producer
Einstein, Newton, and Gravity ISBN 0022859489 6 PK ISBN 0022866639	1.4, 5.2, 5.3, 5.5	X	760	<i>Einstein, Newton, and Gravity</i> discusses the development of ideas about gravity and space-time, and highlights the cumulative nature of scientific knowledge.	force gravity inertia mass theory
Energy Hunter * ISBN 0022847367 6 PK ISBN 0022865225	2.8, 3.5, 3.8, 3.11, 4.2, 5.2, 5.5	X	810	<i>Energy Hunter</i> identifies sources of energy including biomass, geothermal, solar, fossil fuels, and nuclear reactions.	biomass geothermal energy nuclear fusion renewable solar energy
Exploring the Ocean Depths * ISBN 0022859268 6 PK ISBN 0022866566	3.8, 4.12, 4.13, 5.2, 5.3, 5.5	X	710	<i>Exploring the Ocean Depths</i> describes how technology is used to advance science by allowing humans to explore the deepest parts of the ocean.	adaptation bioluminescence geyser hydrothermal vent probe

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Finding Our Way ISBN 0022859195 6 PK ISBN 0022866531	4.15, 5.2, 5.3, 5.5	T	640	<i>Finding Our Way</i> describes methods of navigation, longitude and latitude, historic navigation tools, and modern navigation tools such as GPS.	astrolabe compass Global Positioning System (GPS) latitude longitude
Fire in the Sierra Nevada ISBN 0022847340 6 PK ISBN 0022865195	3.8, 3.11	Y	840	<i>Fire in the Sierra Nevada</i> describes the communities of living things found in the Sierra Nevada and the role that fire plays in keeping this ecosystem in balance.	chaparral ecosystem habitat ignite vegetation
Foods that Feed the World * ISBN 0022859225 6 PK ISBN 0022866434	4.1, 5.2, 5.3, 5.5	X	730	<i>Foods That Feed the World</i> describes agriculture, food production, and ways that science has improved agricultural practices over time.	agriculture fertilizer pesticide breeding staple
Greenhouse Effect ISBN 0022847456 6 PK ISBN 0022865306	1.4, 2.8, 3.11, 4.2, 4.8, 5.5	V	820	<i>Greenhouse Effect</i> describes the role of the greenhouse effect in making Earth habitable and describes ways that human activity impacts the greenhouse effect, the ozone layer, and global climate.	atmosphere carbon dioxide deforestation global warming greenhouse effect
Gregor Mendel * ISBN 0022859241 6 PK ISBN 0022866493	1.4, 3.10, 5.2, 5.3, 5.5	W	710	In <i>Gregor Mendel</i> , the experimental methods used by Gregor Mendel are described. This book also describes how Mendel's results used ratios, discusses Mendel's laws, and identifies ways that Mendel's work impacted the work of other scientists.	dominant genetics heredity hybrid recessive
Hidden Life In A Pond ISBN 0022859314 6 PK ISBN 0022866477	3.1, 3.5, 3.8, 5.2, 5.3, 5.4	Y	720	<i>Hidden Life in a Pond</i> identifies microorganisms found in pond water and explains the history of the microscope.	algae bacteria food web habitat protozoa

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How Do Toys Work? * ISBN 0022859284 6 PK ISBN 0022866620	2.7, 2.8	W	710	<i>How Do Toys Work?</i> applies concepts of physics, such as motion, forces, friction, and momentum to toys such as yo-yos and model airplanes.	energy force friction gravity momentum
Microorganisms ISBN 0022859187 6 PK ISBN 0022866450	3.1, 3.5, 3.7, 5.2, 5.3, 5.5	S	570	<i>Microorganisms</i> identifies types of microorganisms, discusses the development of the microscope, and explains the role of microorganisms in disease and in food production.	antibiotic bacteria microbe protist vaccine
Microwaves and Cooking ISBN 0022847480 6 PK ISBN 0022865330	2.8, 5.2, 5.3, 5.5	W	820	<i>Microwaves and Cooking</i> describes the accidental discovery that microwaves cook food, development of the microwave oven over time, and the process of scientific invention.	electron magnetron microwave nonionizing radiation patent
Nuclear Medicine ISBN 0022859349 6 PK ISBN 0022866604	3.7, 5.2, 5.3, 5.5	Y	750	<i>Nuclear Medicine</i> describes the application of radioactive materials in medicine. The book describes X rays, bone scans, MRI, and radiation therapy.	barium CT scan MRI nuclear medicine X ray
Power for Our Future ISBN 0022847375 6 PK ISBN 0022865233	2.8, 3.11, 4.2, 5.2, 5.3, 5.5	Y	940	<i>Power For Our Future</i> describes the need for renewable energy resources such as solar energy, geothermal energy, fuel cells, and biomass fuels.	geothermal energy hydrogen solar power renewable tidal energy
Powered by the Sun ISBN 0022847472 6 PK ISBN 0022865322	2.8, 4.2, 5.2, 5.3, 5.5	Y	890	<i>Powered By the Sun</i> describes nuclear fusion in the Sun and the role of the Sun's energy in the water cycle and fossil fuel formation. It also describes ways that solar energy can be captured and used to make electricity, heat water, heat homes, and power spacecraft.	array insulation nuclear fusion renewable resource solar energy

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Skates Bikes, and Rockets ISBN 0022859470 6 PK ISBN 0022866612	2.7, 4.17, 5.2, 5.3	S	830	<i>Skates, Bikes, and Rockets</i> describes how Newton's laws of motion are demonstrated by inline skates, ice skates, bicycles, and rockets.	force friction gravity inertia newton
Sun Storms * ISBN 0022847464 6 PK ISBN 0022865314	1.4, 4.15, 4.17, 5.2, 5.3, 5.5	X	900	<i>Sun Storms</i> describes solar events such as solar flares and sunspots and the way these events affect Earth. It also describes methods scientists use to study the Sun.	corona magnetic field plasma solar flare sunspot
The Ring of Fire ISBN 0022847413 6 PK ISBN 0022865268	1.4, 4.4, 4.5, 5.5	Z	940	<i>The Ring of Fire</i> describes the most severe earthquakes and volcanic events associated with the Ring of Fire. Tsunamis and tsunami warning systems are also discussed.	aftershock earthquake seismic tsunami volcano
The Story of DNA ISBN 0022859446 6 PK ISBN 0022866485	3.10, 5.2, 5.3, 5.4, 5.5	S	840	<i>The Story of DNA</i> highlights the discoveries of Watson and Crick, Mendel, Wilkins and Franklin, and Francis Collins. It discusses the role of DNA in the inheritance of traits and new developments in DNA technology.	cell DNA gene genetics mutate
Tracing the Food Web ISBN 0022847286 6 PK ISBN 0022865144	3.5, 3.8, 3.11, 5.4	V	860	The flow of energy in a variety of ecosystems is described in <i>Tracing the Food Web</i> . Human impact on the world's ecosystems is also described.	Consumer decomposer ecosystem food chain food web
Tsunami! * ISBN 0022847391 6 PK ISBN 002286525X	1.4, 4.4, 4.5, 5.5	X	880	<i>Tsunami!</i> describes the formation and aftermath of the tsunami of December 26, 2004, as well as ways that tsunamis can be predicted and prepared for.	geologist lithosphere meteorite Richter scale tectonic plate

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Colorado Model Content Standards for Science

Standard 1

Students apply the processes of scientific investigation and design, conduct, communicate about, and evaluate such investigations.

- 1.1 ask questions and state hypotheses that lead to different types of scientific investigations (for example: experimentation, collecting specimens, constructing models, researching scientific literature)
- 1.2 use appropriate tools, technologies and metric measurements to gather and organize data and report results
- 1.3 interpret and evaluate data in order to formulate logical conclusions
- 1.4 demonstrate that scientific ideas are used to explain previous observations and to predict future events (for example: plate tectonics and future earthquake activity)
- 1.5 identify and evaluate alternative explanations and procedures
- 1.6 communicate results of their investigations in appropriate ways (for example: written reports, graphic displays, oral presentations)

Standard 2

Physical Science: Students know and understand common properties, forms, and changes in matter and energy. (Focus: Physics and Chemistry)

- 2.1 physical properties of solids, liquids, gases and the plasma state and their changes can be explained using the particulate nature of matter model
- 2.2 mixtures of substances can be separated based on their properties (for example: solubilities, boiling points, magnetic properties, densities and specific heat)
- 2.3 mass is conserved in a chemical or physical change
- 2.4 mass and weight can be distinguished
- 2.5 all matter is made up of atoms that are comprised of protons, neutrons and electrons and when a substance is made up of only one type of atom it is an element
- 2.6 when two or more elements are combined a compound is formed which is made up of molecules

- 2.7 quantities (for example: time, distance, mass, force) that characterize moving objects and their interactions within a system (for example, force, speed, velocity, potential energy, kinetic energy) can be described, measured and calculated
- 2.8 that there are different forms of energy and those forms of energy can be transferred and stored (for example: kinetic, potential) but total energy is conserved
- 2.9 electric circuits provide a means of transferring electrical energy when heat, light, sound, magnetic effects and chemical changes are produced
- 2.10 white light is made up of different colors that correspond to different wavelengths

Standard 3**Life Science: Students know and understand the characteristics and structure of living things, the processes of life, and how living things interact with each other and their environment. (Focus: Biology-- Anatomy, Physiology, Botany, Zoology, Ecology)**

- 3.1 classification schemes can be used to understand the structure of organisms
- 3.2 human body systems have specific functions and interaction (for example: circulatory and respiratory, muscular and skeletal)
- 3.3 there is a differentiation among levels of organization (cells, tissues, and organs) and their roles within the whole organism
- 3.4 multicellular organisms have a variety of ways to get food and other matter to their cells (for example: digestion, transport of nutrients by circulatory system)
- 3.5 photosynthesis and cellular respiration are basic processes of life (for example, set up a terrarium or aquarium and make changes such as blocking out light)
- 3.6 different types of cells have basic structures, components and functions (for example: cell membrane, nucleus, cytoplasm, chloroplast, single-celled organisms in pond water, Elodea, onion cell, human cheek cell)
- 3.7 there are noncommunicable conditions and communicable diseases (for example: heart disease and chicken pox)
- 3.8 there is a flow of energy and matter in an ecosystem (for example: as modeled in a food chain, web, pyramid, decomposition)
- 3.9 asexual and sexual cell reproduction/division can be differentiated

- 3.10 chromosomes and genes play a role in heredity (for example, genes control traits, while chromosomes are made up of many genes)
- 3.11 changes in environmental conditions can affect the survival of individual organisms, populations, and entire species
- 3.12 changes or constancy in groups of organisms over geologic time can be revealed through evidence
- 3.13 individual organisms with certain traits are more likely than others to survive and have offspring.

Standard 4**Earth and Space Science: Students know and understand the processes and interactions of Earth's systems and the structure and dynamics of Earth and other objects in space. (Focus: Geology, Meteorology, Astronomy, Oceanography)**

- 4.1 inter-relationships exist between minerals, rocks, and soils
- 4.2 humans use renewable and nonrenewable resources (for example: forests and fossil fuels)
- 4.3 natural processes shape the Earth's surface (for example: landslides, weathering, erosion, mountain building, volcanic activity)
- 4.4 major geological events such as earthquakes, volcanic eruptions, and mountain building are
- 4.5 associated with plate boundaries and attributed to plate motions
- 4.6 fossils are formed and used as evidence to indicate that life has changed through time
- 4.7 successive layers of sedimentary rock and the fossils contained within them can be used to confirm age, geologic time, history, and changing life forms of the Earth; this evidence is affected by the folding, breaking and uplifting of layers
- 4.8 the atmosphere has basic composition, properties, and structure (for example: the range and distribution of temperature and pressure in the troposphere and stratosphere)
- 4.9 atmospheric circulation is driven by solar heating (for example: the transfer of energy by radiation, convection, conduction)
- 4.10 there are quantitative changes in weather conditions over time and space (for example: humidity, temperature, air pressure, cloud cover, wind, precipitation)

- 4.11 there are large-scale and local weather systems (for example: fronts, air masses, storms)
- 4.12 the world's water is distributed and circulated through oceans, glaciers, rivers, groundwater, and atmosphere
- 4.13 the ocean has a certain composition and physical characteristics (for example: currents, waves, features of the ocean floor, salinity, and tides)
- 4.14 there are characteristics (components, composition, size) and scientific theories of origin of the solar system
- 4.15 relative motion, axes tilt and positions of the Sun, Earth, and Moon have observable effects (for example: seasons, eclipses, moon phases)
- 4.16 the universe consists of many billions of galaxies (each containing many billions of stars) and that vast distances separate these galaxies and stars from one another and from the Earth
- 4.17 technology is needed to explore space (for example: telescopes, spectrosopes, spacecraft, life support systems)

Standard 5**Students understand that the nature of science involves a particular way of building knowledge and making meaning of the natural world**

- 5.1 a controlled experiment must have comparable results when repeated
- 5.2 scientific knowledge changes as new knowledge is acquired and previous ideas are modified (for example: through space exploration)
- 5.3 contributions to the advancement of science have been made by people in different cultures and at different times in history
- 5.4 models can be used to predict change (for example: computer simulation, video sequence, stream table)
- 5.5 there are interrelationships among science, technology and human activity that affect the world