

TITLE	NY STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
Air Pollution ISBN 0022847170 6 PK ISBN 0022865039	PS Performance Indicator 2.1, LE Performance Indicator 6.1, LE Performance Indicator 7.2	V	800	Causes of air pollution and the impact of air pollution on the atmosphere are described in <i>Air Pollution</i> . Also covered are the ozone layer, global warming, and strategies to prevent air pollution.	acid rain atmosphere chlorofluorocarbon fossil fuel greenhouse effect
Alloys: Metals in the Mix * ISBN 002284726X 6 PK ISBN 0022865128	PS Performance Indicator 3.1; PS Performance Indicator 3.2	U	840	<i>Alloys: Metals In the Mix</i> introduces the definition of the term <i>alloy</i> and provides an in-depth look at the history of alloys. Technological applications of alloys and possible future uses of alloys are also described.	alloy cermet converter cupronickel ore
Amusement Park Rides ISBN 0022859152 6 PK ISBN 0022866361	PS Performance Indicator 5.1; PS Performance Indicator 5.2	W	680	<i>Amusement Park Rides</i> uses descriptions of rides to clarify the relationship between forces (gravity, friction, etc.) and motion (Newton's Laws). Careers that use science and technological design are addressed in Chapter 8, Meet a Roller Coaster Designer.	force friction g-force gravity motion
Animal Adaptations ISBN 0022847111 6 PK ISBN 0022864962	LE Performance Indicator 1.1; LE Performance Indicator 3.1; 3.2 LE Performance Indicator 6.1	V	820	<i>Animal Adaptations</i> describes adaptations that help animals find food, find mates, move, and stay safe. The relationship between adaptations and specific environments is also described.	adaptation camouflage habitat mimicry niche
Can Cells Grow Too Much? ISBN 0022847049 6 PK ISBN 002286489X	LE Performance Indicator 1.1; 1.2 LE Performance Indicator 4.2, LE Key Idea 5.2	V	770	<i>Can Cells Grow Too Much?</i> Gives a brief description of cell structure, chromosomes, and DNA. Normal mitosis and its function in the body is contrasted with uncontrolled cell division. Cancer, metastasis, causes of cancer, cancer prevention, and medical technologies used to treat cancer are also discussed.	cancer cell chemotherapy mitosis tumor
Carbon All Around * ISBN 0022847235 6 PK ISBN 002286508X	PS Performance Indicator 3.3, LE Key Idea 5.2, LE Performance Indicator 6.1; 7.2	U	870	<i>Carbon All Around</i> begins with definitions of the terms element and matter and introduces carbon as one of the most plentiful elements on Earth. Uses of carbon, the carbon cycle, carbon dating, fossil fuels, and other technologies utilizing carbon are also discussed.	carbon carbon cycle carbon dioxide graphite greenhouse effect

- Also available in an English Language Learner version

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Cells ISBN 0022847022 6 PK ISBN 0022864873	LE Performance Indicator 1.1; 1.2 LE Performance Indicator 4.4, LE Performance Indicator 7.1; 7.2	S	780	Cells discusses the structure and function of cells and organelles and describes levels of organization in organisms. Chapter 4 gives an in-depth look at the history of cell research, and Chapter 5 describes applications of cell research.	cell cell membrane cytoplasm mitochondria nucleus
Costa Rican Rain Forests ISBN 0022847081 6 PK ISBN 0022864946	LE Performance Indicator 3.1; 3.2 LE Performance Indicator 4.3, LE Performance Indicator 6.1; 7.2	S	800	Costa Rican Rain Forests explores relationships between living things in the Costa Rican rain forest. Adaptations of plants and animals are discussed. Costa Rica's commitment to conservation is highlighted in Chapter 1.	adaptation life cycle metamorphosis predator vertebrate
Discovering the Elements ISBN 0022847227 6 PK ISBN 0022865071	PS Performance Indicator 3.3, LE Performance Indicator 6.1; 6.2	T	730	Discovering the Elements describes the discovery and uses of some common elements. It also explains the organization of the periodic table, and the contributions of scientists who discovered and studied elements.	atom atomic weight element periodic table property
Earth's Heat ISBN 0022861750 6 PK ISBN 0022866310	PS Performance Indicator 2.1; 2.2 PS Performance Indicator 4.2	W	800	In Earth's Heat , the structure of Earth is described and the relationship of Earth's internal energy to plate tectonics is identified. This book also explains how earthquakes and volcanoes are related to plate motion.	lava lithosphere magma mantle tectonic plates
Earth's Oceans ISBN 0022861742 6 PK ISBN 0022866272	PS Performance Indicator 2.1;3.1 LE Performance Indicator 3.1;3.2 LE Performance Indicator 5.1 LE Performance Indicator 6.1; 6.2 LE Performance Indicator 7.1; 7.2	W	820	Earth's Oceans provides a description of the physical and ecological features of oceans. The distinguishing characteristics of the Pacific, Atlantic, Indian, and Arctic Oceans are identified. The book also includes an in-depth description of coral reef ecosystems.	abyssal plain continental shelf current plankton vent
Earth's Water ISBN 0022861769 6 PK ISBN 0022864997	PS Performance Indicator 2.1;2.2 PS Performance Indicator 3.2, LE Performance Indicator 6.1; 6.2 LE Performance Indicator 7.1	S	860	Earth's Water describes ways that water is used on Earth, as well as water pollution and water treatment. The water cycle is diagramed, and the processes of evaporation, condensation, and precipitation are described.	condensation precipitation reservoir water cycle water treatment

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Genetics ISBN 0022859136 6 PK ISBN 0022866256	LE Performance Indicator 1.1, LE Performance Indicator 2.1; 2.2 LE Performance Indicator 3,1, LE Performance Indicator 4.1; 4.4	W	780	Genetics includes a description of Mendel's work and the history of genetics. It also covers cells and DNA, as well as applications of DNA technology.	chromosome DNA gene genetics heredity
Global Weather ISBN 0022859144 6 PK ISBN 0022866337	PS Performance Indicator 1.1; PS Performance Indicator 2.1; 2.2 LE Performance Indicator 7.2	W	670	Global Weather identifies the factors that make up weather, the role of the water cycle in weather, forms of severe weather, and human impact on weather. It also includes information about careers in meteorology.	air pressure drought global wind patterns meteorologist troposphere
Hurricanes and Tornadoes ISBN 0022847154 6 PK ISBN 0022865012	PS Performance Indicator 2.1, PS Performance Indicator 2.2,	T	830	Hurricanes and Tornadoes explains how hurricanes and tornadoes form, locations where they commonly occur, and types of damage they cause.	air pressure cyclone hurricane thunderstorm typhoon
Life Goes On * ISBN 0022847219 6 PK ISBN 0022865063	LE Performance Indicator 2.1; 2.2 LE Performance Indicator 3.1; 3.2 LE Performance Indicator 4.1; 4.2	U	690	Sexual and asexual reproduction are compared and contrasted in Life Goes On . This book also discusses diversity among individuals, and adaptations that help young organisms survive in different environments.	asexual reproduction fertilization pollination sexual reproduction species
Life on a Space Station ISBN 0022847219 6 PK ISBN 0022865063	PS Performance Indicator 5.1; 5.2 LE Performance Indicator 5.1,	V	900	Students explore everyday life on a space station, the history of the space station, and careers in space exploration in Life On a Space Station .	atmosphere microgravity mission orbit radiation
Looking to the Sky ISBN 0022847189 6 PK ISBN 0022865047	PS Performance Indicator 1.1 PS Performance Indicator 2.1,	T	820	Looking to the Sky highlights the cumulative nature of scientific knowledge, discusses the development of the sciences of astronomy and rocketry, and describes the future of space exploration.	astronomy comet galaxy rocketry telescope

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Magnetism ISBN 0022859071 6 PK ISBN 0022866388	PS Performance Indicator 3.1, PS Performance Indicator 4.1, PS Performance Indicator 4.3; 4.4 PS Performance Indicator 5.2	P	620	The force of magnetism and Earth's magnetic field are described in <i>Magnetism</i> . This book also explains the relationship between magnetism and electricity and applications of electromagnets and motors.	compass electromagnet magnet magnetic field pole
Mission: Green Earth * ISBN 0022859101 6 PK ISBN 0022866329	PS Performance Indicator 2.2 PS Performance Indicator 4.1 LE Performance Indicator 6.1; 6.2 LE Performance Indicator 7.1; 7.2	U	650	The term natural resources is defined in <i>Mission: Green Earth</i> . This book also describes how Earth's resources can be used in sustainable ways and describes the negative impact of fossil fuel use and clear cutting.	environment global warming natural resource nonrenewable renewable
Mixtures and Solutions ISBN 0022859373 6 PK ISBN 0022866345	PS Performance Indicator 3.1; PS Performance Indicator 3.2 PS Performance Indicator 3.3	Q	590	In <i>Mixtures and Solutions</i> students are introduced to the differences between mixtures and solutions and methods that can be used to separate mixtures and solutions. This book also describes the difference between chemical change and physical change.	chemical change mixture physical change solution suspension
Motion and Energy at Play * ISBN 002285911X 6 PK ISBN 002286637X	PS Performance Indicator 5.1, PS Performance Indicator 5.2	T	800	<i>Motion and Energy at Play</i> explains how the science of physics is applied in bicycling, skateboarding, and inline skating. Simple machines are discussed, and the force of friction is defined and discussed.	accelerate friction gravity inertia physics
Nature's Partners ISBN 0022859047 6 PK ISBN 0022866264	LE Performance Indicator 3.1 LE Performance Indicator 6.1 LE Performance Indicator 7.1	P	530	<i>Nature's Partners</i> describes and gives examples of symbiosis, mutualism, and commensalism. Examples of each type of relationship are pictured and described. For example, the relationship between sea anemone and clownfish is used to illustrate mutualism.	commensalism mutualism organism parasitism symbiosis
One-Celled Organisms * ISBN 0022847030 6 PK ISBN 0022864881	LE Performance Indicator 1.1, LE Performance Indicator 3.1; LE Performance Indicator 4.1; 4.4	U	730	<i>One-Celled Organisms</i> discusses cells and microscopes. It also explores classification and gives a description of various types of one-celled organisms, including Monera, Protists, and Fungi.	bacteria cell fungi/fungus microbe protest

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Periodic Table Families ISBN 0022847243 6 PK ISBN 0022865098	PS Performance Indicator 3.2, PS Performance Indicator 3.3	V	840	Periodic Table Families defines the term matter and describes the structure of the atom. It also explains how the periodic table was developed, describes states of matter, and discusses the properties of metals, nonmetals, and gases	atom element matter metal metalloid
Plastics ISBN 0022847278 6 PK ISBN 0022865136	PS Performance Indicator 3.1; PS Performance Indicator 3.3	W	890	Plastics explains how various plastics are made, describes uses and properties of different types of plastics, and emphasizes the importance of recycling plastics.	compound molecule plastic polymer synthetic
Seeds and Spores ISBN 0022861734 6 PK ISBN 0022864938	LE Performance Indicator 2.1;2.2, LE Performance Indicator 3.1, LE Performance Indicator 4.1, LE Performance Indicator 6.2	O	770	Seeds and Spores explains how plants are classified based on their method of reproduction, describes the life cycle of plants, and identifies the roles played by animals in the fertilization of plants.	fertilization pollination reproduce seed spores
Shake, Rattle, and Explode * ISBN 0022859098 6 PK ISBN 0022866299	PS Performance Indicator 2.1, PS Performance Indicator 2.2	U	660	Volcanoes are the focus of Shake, Rattle, and Explode! Earthquakes, tsunamis, and plate tectonics are also discussed. Significant historical eruptions, such as Krakatau, are described and the December 24, 2004 tsunami is discussed.	erupt lava magma seismograph tsunami
Sir Isaac Newton ISBN 0022859063 6 PK ISBN 0022866353	PS Performance Indicator 5.1, PS Performance Indicator 5.2	P	510	Sir Isaac Newton describes Newton's life, his major discoveries, and Newton's three laws of motion. Newton's work on the topic of gravity is also discussed. Each of the three laws of motion is clarified with photos, and experiments to demonstrate the laws of motion are included.	experiment force gravity mass motion
Sonar, Radar, and Lasers ISBN 0022859160 6 PK ISBN 0022863418	PS Performance Indicator 4.1; 4.3 PS Performance Indicator 4.4	W	830	Sonar, Radar, and Lasers gives an overview of how these three technologies work and their current and possible future applications.	laser optic fiber radar sonar transmitter

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The Sun and Other Stars * ISBN 0022847197 6 PK ISBN 0022865055	PS Performance Indicator 1.1, PS Performance Indicator 4.1,	U	770	<i>The Sun and Other Stars</i> compares the Sun to other stars, describes eclipses, the life cycle of stars, constellations, galaxies, and the history of astronomy.	astronomer galaxy light year solar system supernova
The Water Cycle * ISBN 0022847138 6 PK ISBN 0022864989	PS Performance Indicator 2.1, LE Performance Indicator 6.1; 6.2 LE Performance Indicator 7.1	U	900	The importance of water on Earth, the water cycle, aquifers, glaciers, wetlands, and water use management are discussed in <i>The Water Cycle</i> .	aquifer condense evaporate groundwater precipitation
The Weather Detectives * ISBN 0022847162 6 PK ISBN 0022865020	PS Performance Indicator 2.1, PS Performance Indicator 2.2	U	840	<i>The Weather Detectives</i> describes historic and current methods and tools used for weather forecasting. Clouds, air pressure, and humidity are characteristics of weather that are defined and discussed in this book.	air pressure barometer front humidity meteorology
Weird and Wonderful Plants * ISBN 0022847065 6 PK ISBN 002286492X	LE Performance Indicator 1.1; LE Performance Indicator 4.3; 5.1 LE Performance Indicator 6.1; 6.2	U	830	<i>Weird and Wonderful Plants</i> explains the process of photosynthesis. It also describes parasitic plants, semi-parasitic plants, epiphytes, and insect-eating plants.	chlorophyll epiphyte nitrogen parasite photosynthesis
What is GPS? ISBN 0022859055 6 PK ISBN 0022866280	PS Performance Indicator 1.1	Q	610	<i>What is GPS?</i> describes historic methods of navigation and explains how Global Position Systems work and are used. The role of satellites in the function of Global Position Systems is described, and causes of errors in GPS readings are discussed.	GPS (Global Positioning System) latitude longitude orbit satellite
When Energy Changes * ISBN 0022859128 6 PK ISBN 0022866396	PS Performance Indicator 1.1, PS Performance Indicator 4.1; 4.3 PS Performance Indicator 4.5; 5.2	T	660	Forms of energy and changes in energy are described in <i>When Energy Changes</i> . This book also describes uses of solar energy, the history of electricity, how an electric circuit works, and how sound is heard.	circuit electric current energy force solar energy

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New York Science Performance Indicators

Standard 4

Science

Physical Setting

PS Key Idea 1

The Earth and celestial phenomena can be described by principles of relative motion and perspective.

PS Performance Indicator 1.1

Explain daily, monthly, and seasonal changes on Earth

PS Key Idea 2

Many of the phenomena that we observe on Earth involve interactions among components of air, water, and land.

PS Performance Indicator 2.1

Explain how the atmosphere (air), hydrosphere (water), and lithosphere (land) interact, evolve, and change.

PS Performance Indicator 2.2

Describe volcano and earthquake patterns, the rock cycle, and weather and climate changes.

PS Key Idea 3

Matter is made up of particles whose properties determine the observable characteristics of matter and its reactivity.

PS Performance Indicator 3.1

Observe and describe properties of materials such as density, conductivity, and solubility.

PS Performance Indicator 3.2

Distinguish between chemical and physical changes.

PS Performance Indicator 3.3

Develop mental models to explain common chemical reactions and changes in states of matter.

PS Key Idea 4

Energy exists in many forms, and when these forms change energy is conserved.

PS Performance Indicator 4.1

Describe the sources and identify the transformations of energy observed in everyday life.

PS Performance Indicator 4.2

Observe and describe heating and cooling events.

PS Performance Indicator 4.3

Observe and describe energy changes as related to chemical reactions.

PS Performance
Indicator 4.4

Observe and describe the properties of sound, light, magnetism, and electricity.

PS Performance
Indicator 4.5

Describe situations that support the principles of conservation of energy.

PS Key Idea 5

Energy and matter interact through forces that result in changes in motion.

PS Performance
Indicator 5.1

Describe different patterns of motion of objects.

PS Performance
Indicator 5.2

Observe, describe, and compare effects of forces (gravity, electric current, and magnetism) on the motion of objects.

The Living Environment

LE Key Idea 1

Living things are both similar to and different from each other and nonliving things.

LE Performance
Indicator 1.1

Compare and contrast the parts of plants, animals and one-celled organisms.

LE Performance
Indicator 1.2

Explain the functioning of the major human organ systems and their interactions.

LE Key Idea 2

Organisms inherit genetic information in a variety of ways that result in continuity of structure and function between parents and offspring.

LE Performance
Indicator 2.1

Describe sexual and asexual mechanisms for passing genetic materials from generation to generation.

LE Performance
Indicator 2.2

Describe simple mechanisms related to the inheritance of some physical traits in offspring.

LE Key Idea 3

Individual organisms and species change over time.

LE Performance
Indicator 3.1

Describe sources of variations in organisms and their structures and relate the variations to survival.

LE Performance
Indicator 3.2

Describe factors responsible for competition within species and the significance of that competition.

LE Key Idea 4

The continuity of life is sustained through reproduction and development.

LE Performance
Indicator 4.1

Observe and describe the variations in reproductive patterns of organisms, including asexual and sexual reproduction.

LE Performance
Indicator 4.2

Explain the role of sperm and egg cells in reproduction.

LE Performance
Indicator 4.3

Observe and describe developmental patterns in selected plants and animals (eg. Insects, frogs, humans, seed-bearing plants).

LE Performance
Indicator 4.4

Observe and describe cell division in the microscopic level and its macroscopic effects.

LE Key Idea 5

Organisms maintain a dynamic equilibrium that sustains life.

LE Performance
Indicator 5.1

Compare the way a variety of living specimens carry out basic life functions and maintain dynamic equilibrium.

LE Performance
Indicator 5.2

Describe the importance of major nutrients, vitamins, and minerals in maintaining health, and promoting growth, and explain the need for a constant input of energy for living organisms.

LE Key Idea 6

Plants and animals depend on each other and their physical environment.

LE Performance
Indicator 6.1

Describe the flow of energy and matter through food chains and food webs.

LE Performance
Indicator 6.2

Provide evidence that green plants make food and explain the significance of this process to other organisms.

LE Key Idea 7

Human decisions and activities have had a profound impact on the physical and living environment.

LE Performance
Indicator 7.1

Describe how living things, including humans, depend upon the living and nonliving environment for their survival.

LE Performance
Indicator 7.2

Describe the effects of environmental changes on humans and other populations.