

TITLE	NJ STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
All About the Moon ISBN 0022859330 6 PK ISBN 002286654X	5.2.8.A.1.a., 5.2.8.A.1.b., 5.2.8.A.2., 5.2.8.A.3., 5.2.8.B.1., 5.2.8.B.2., 5.9.8.A.1.b., 5.9.8.B.2.	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	5.2.8.A.3., 5.2.8.B.2., 5.4.8.A.1., 5.6.8.A.4.	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	5.5.8.A.2., 5.6.8.A.4., 5.8.8.B.1., 5.8.8.B.2., 5.10.8.A.1., 5.10.8.B.1., 5.10.8.B.2.	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	5.5.8.C.1., 5.10.8.A.1.	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	5.8.8.D.1., 5.10.8.A.1., 5.10.8.A.2., 5.10.8.B.1.	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	5.2.8.A.2., 5.2.8.A.3., 5.2.8.B.1., 5.2.8.B.2., 5.5.8.A.2., 5.5.8.B.1., 5.10.8.A.1.	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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TITLE	NJ STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
Building a Biome * ISBN 0022847332 6 PK ISBN 0022865187	5.5.8.B.1., 5.8.8.D.1., 5.10.8.A.1.	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	5.6.8.A.1., 5.6.8.A.4., 5.10.8.B.1.	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	5.7.8.A.3., 5.8.8.B.1.	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	5.6.8.A.1., 5.6.8.B.1.	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	5.2.8.B.1., 5.2.8.B.2., 5.5.8.A.2., 5.5.8.B.2.	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	5.2.8.B.2., 5.5.8.A.2.	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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TITLE	NJ STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
Do Fossil Fuels Have a Future? * ISBN 0022847499 6 PK ISBN 0022865349	5.2.8.A.3., 5.2.8.A.3., 5.2.8.B.1., 5.2.8.B.2., 5.10.8.A.1., 5.10.8.A.2., 5.10.8.B.1., 5.10.8.B.2.	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	5.2.8.B.2., 5.10.8.A.2., 5.10.8.B.1., 5.10.8.B.2.	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	5.8.8.D.1., 5.10.8.A.1., 5.10.8.B.1., 5.10.8.B.2.	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	5.2.8.A.1.a., 5.2.8.A.1.b., 5.2.8.A.1.c., 5.2.8.A.2., 5.2.8.A.3., 5.2.8.B.1., 5.2.8.B.2., 5.7.8.A.3., 5.9.8.B.1., 5.9.8.B.2.	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	5.4.8.C.2.a., 5.4.8.C.2.b., 5.4.8.C.2.c., 5.10.8.B.1., 5.10.8.B.2.	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

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TITLE	NJ STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
Exploring the Ocean Depths * ISBN 0022859268 6 PK ISBN 0022866566	5.2.8.B.1., 5.2.8.B.2., 5.8.8.B.1., 5.8.8.D.1., 5.10.8.A.1., 5.10.8.A.2.	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
Finding Our Way ISBN 0022859195 6 PK ISBN 0022866531	5.2.8.B.1., 5.2.8.B.2., 5.8.8.D.1.	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	5.8.8.D.1., 5.10.8.A.1., 5.10.8.A.2., 5.10.8.B.1., 5.10.8.B.2.	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	5.2.8.A.3., 5.2.8.B.2.	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	5.10.8.B.1., 5.10.8.B.2.	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	5.1.8.A.1., 5.1.8.A.3., 5.1.8.A.4., 5.2.8.A.2., 5.2.8.A.3., 5.2.8.B.1., 5.2.8.B.2.	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

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TITLE	NJ STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
Hidden Life In A Pond ISBN 0022859314 6 PK ISBN 0022866477	5.2.8.B.1., 5.5.8.B.1., 5.10.8.A.1.	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
How Do Toys Work? * ISBN 0022859284 6 PK ISBN 0022866620	5.2.8.A.3., 5.4.8.C.1., 5.7.8.A.1., 5.7.8.A.2., 5.7.8.A.3., 5.9.8.B.1.	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	5.2.8.A.2., 5.2.8.A.3., 5.2.8.B.1., 5.2.8.B.2., 5.5.8.A.2., 5.5.8.B.1., 5.10.8.A.1.	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	5.2.8.A.3., 5.2.8.B.2	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	5.2.8.A.2., 5.2.8.A.3., 5.2.8.B.1., 5.2.8.B.2., 5.5.8.A.1.	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

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TITLE	NJ STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
Power for Our Future ISBN 0022847375 6 PK ISBN 0022865233	5.2.8.A.3., 5.2.8.B.1., 5.2.8.B.2., 5.4.8.C.2.a., 5.2.8.C.2.c., 5.7.8.B.1., 5.10.8.B.1., 5.10.8.B.2.	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	5.2.8.A.2.,5.2.8.A.3., 5.2.8.B.1.,5.2.8.B.2., 5.4.8.C.2.a., 5.2.8.C.2.c., 5.9.8.A.2., 5.10.8.B.1., 5.10.8.B.2.	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
Skates Bikes, and Rockets ISBN 0022859470 6 PK ISBN 0022866612	5.2.8.A.3., 5.2.8.B.1., 5.7.8.A.1., 5.7.8.A.2., 5.7.8.A.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	5.2.8.A.2., 5.2.8.A.3., 5.2.8.B.1., 5.2.8.B.2.	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	5.2.8.B.2., 5.8.8.D.1.	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

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The Story of DNA ISBN 0022859446 6 PK ISBN 0022866485	5.2.8.A.2., 5.2.8.A.3., 5.2.8.B.1., 5.2.8.B.2., 5.5.8.A.2., 5.5.8.B.2.	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	5.5.8.B.1., 5.8.8.D.1., 5.10.8.A.1.	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	5.2.8.B.2., 5.8.8.B.1., 5.8.8.D.1.	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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New Jersey Core Curriculum Standards for Science

STANDARD 5.1

(Scientific Processes) All students will develop problem-solving, decision-making and inquiry skills, reflected by formulating usable questions and hypotheses, planning experiments, conducting systematic observations, interpreting and analyzing data, drawing conclusions, and communicating results.

5.1.8.A.**Habits of Mind**

5.1.8.A.1.

Evaluate the strengths and weaknesses of data, claims, and arguments.

5.1.8.A.2.

Communicate experimental findings to others.

5.1.8.A.3.

Recognize that the results of scientific investigations are seldom exactly the same and that replication is often necessary.

5.1.8.A.4.

Recognize that curiosity, skepticism, open-mindedness, and honesty are attributes of scientists.

5.1.8.B.**Inquiry and Problem Solving**

5.1.8.B.1.

Identify questions and make predictions that can be addressed by conducting investigations.

5.1.8.B.2.

Design and conduct investigations incorporating the use of a control.

5.1.8.B.3.

Collect, organize, and interpret the data that result from experiments.

5.1.8.C.**Safety**

5.1.8.C.1.

Know when and how to use appropriate safety equipment with all classroom materials.

5.1.8.C.2.

Understand and practice safety procedures for conducting science investigations.

STANDARD 5.2

(Science and Society) All students will develop an understanding of how people of various cultures have contributed to the advancement of science and technology, and how major discoveries and events have advanced science and technology.

5.2.8.A.**Cultural Contributions**

5.2.8.A.1.

Recognize that scientific theories:

5.2.8.A.1.a.

develop over time,

5.2.8.A.1.b.

depend on the contributions of many people, and

5.2.8.A.1.c.

reflect the social and political climate of their time.

5.2.8.A.2.

Know that scientists are men and women of many cultures who often work together to solve scientific and technological problems.

5.2.8.A.3.

Describe how different people in different cultures have made and continue to make contributions to science and technology.

5.2.8.B.**Historical Perspectives**

5.2.8.B.1.

Describe the impact of major events and people in the history of science and technology, in conjunction with other world events.

5.2.8.B.2.

Describe the development and exponential growth of scientific knowledge and technological innovations.

STANDARD 5.3

(Mathematical Applications) All students will integrate mathematics as a tool for problem-solving in science, and as a means of expressing and/or modeling scientific theories.

5.3.8.A.**Numerical Operations**

5.3.8.A.1.

Express quantities using appropriate number formats, such as:

5.3.8.A.1.a.

decimals.

5.3.8.A.1.b.

percents.

5.3.8.A.1.c.

scientific notation.

5.3.8.B.

Geometry and Measurement

5.3.8.B.1.

Perform mathematical computations using labeled quantities and express answers in correctly derived units.

5.3.8.C.

Patterns and Algebra

5.3.8.C.1.

Express physical relationships in terms of mathematical equations derived from collected data.

5.3.8.D.

Data Analysis and Probability

5.3.8.D.1.

Represent and describe mathematical relationships among variables using:

5.3.8.D.1.a.

graphs.

5.3.8.D.1.b.

tables.

5.3.8.D.2.

Analyze experimental data sets using measures of central tendency:

5.3.8.D.2.a.

mean.

5.3.8.D.2.b.

mode.

5.3.8.D.2.c.

median.

5.3.8.D.3.

Construct and use a graph of experimental data to draw a line of best fit and identify a linear relationship between variables.

5.3.8.D.4.

Use computer spreadsheets, graphing and database applications to assist in quantitative analysis of data.

STANDARD 5.4

(Nature and Process of Technology) All students will understand the interrelationships between science and technology and develop a conceptual understanding of the nature and process of technology.

5.4.8.A.

Science and Technology

5.4.8.A.1. Reinforce indicators from previous grade level.

5.4.8.B.

Nature of Technology

5.4.8.B.1. Reinforce indicators from previous grade level.

5.4.8.C.

Technological Design

5.4.8.C.1. Select a technological problem and describe the criteria and constraints that are addressed in solving the problem.

5.4.8.C.2. Identify the basic components of a technological system:

5.4.8.C.2.a. input.

5.4.8.C.2.b. process.

5.4.8.C.2.c. output.

5.4.8.C.2.d. feedback.

STANDARD 5.5

(Characteristics of Life) All students will gain an understanding of the structure, characteristics, and basic needs of organisms and will investigate the diversity of life.

5.5.8.A.

Matter, Energy, and Organization in Living Systems

5.5.8.A.1. Explain how systems of the human body are interrelated and regulate the body's internal environment.

5.5.8.A.2. Identify and describe the structure and function of cells and cell parts.

5.5.8.B.

Diversity and Biological Evolution

5.5.8.B.1. Describe and give examples of the major categories of organisms and of the characteristics shared by organisms.

5.5.8.B.2. Compare and contrast acquired and inherited characteristics in human and other species

5.5.8.C.

5.5.8.C.1.

Reproduction and Heredity

Describe life cycles of humans and other organisms.

STANDARD 5.6**(Chemistry) All students will gain an understanding of the structure and behavior of matter.****5.6.8.A.****Structure and Properties of Matter**

5.6.8.A.1.

Recognize that about 100 different elements have been identified and most materials on Earth are made of a few of them.

5.6.8.A.2.

Show that equal volumes of different substances usually have different masses.

5.6.8.A.3.

Describe the properties of mixtures and solutions, including concentration and saturation.

5.6.8.A.4.

Describe characteristic physical properties such as boiling point, melting point, and solubility, and recognize that the property is independent of the amount of sample.

5.6.8.B.**Chemical Reactions**

5.6.8.B.1.

Recognize evidence of a chemical change.

STANDARD 5.7**(Physics) All students will gain an understanding of natural laws as they apply to motion, forces, and energy transformations.****5.7.8.A.****Motion and Forces**

5.7.8.A.1.

Recognize that an object at rest will remain at rest and an object moving in a straight line at a steady speed will continue to move in a straight line at a steady speed unless a net (unbalanced) force acts on it.

5.7.8.A.2.

Recognize that motion can be retarded by forces such as friction and air resistance.

5.7.8.A.3.

Recognize that everything on or near the earth is pulled toward the earth's center by gravitational force.

5.7.8.B.**Energy Transformations**

5.7.8.B.1.

Recognize that heat flows through materials or across space from warmer objects to cooler ones.

5.7.8.B.2. Show that vibrations in materials can generate waves that can transfer energy from one place to another.

5.7.8.B.3. Design an electric circuit to investigate the behavior of a system.

STANDARD 5.8

(Earth Science) All students will gain an understanding of the structure, dynamics, and geophysical systems of the earth.

5.8.8.A.

Earth's Properties and Materials

5.8.8.A.1. Reinforce indicators from previous grade level.

5.8.8.B.

Atmosphere and Weather

5.8.8.B.1. Describe the composition, circulation, and distribution of the world's oceans, estuaries, and marine environments.

5.8.8.B.2. Describe and illustrate the water cycle.

5.8.8.C.

Processes that Shape the Earth

5.8.8.C.1. Summarize the process involved in the rock cycle and describe the characteristics of the rocks involved.

5.8.8.D.

How We Study the Earth

5.8.8.D.1. Utilize various tools such as map projections and topographical maps to interpret features of Earth's surface.

STANDARD 5.9

(Astronomy & Space Science) All students will gain an understanding of the origin, evolution, and structure of the universe.

5.9.8.A.

Earth, Moon, Sun System

5.9.8.A.1. Explain how the motions of the Earth, sun, and moon, define units of time including:

5.9.8.A.1.a. days

5.9.8.A.1.b. months

5.9.8.A.1.c.

years

5.9.8.A.2.

Recognize that changes in the Earth's position relative to the sun produces differing amounts of daylight seasonally.

5.9.8.B.**Solar System**

5.9.8.B.1.

Using models, demonstrate an understanding of the scale of the solar system that shows distance and size relationships among the sun and planets.

5.9.8.B.2.

Recognize that the sun's gravitational pull holds the planets in their orbits and that the planets' gravitational pull holds their moons in their orbits.

5.9.8.C.**Stars**

5.9.8.C.1.

Observe and record short-term and long-term changes in the positions of the constellations in the night sky.

5.9.8.C.2.

Observe that the planets appear to change their position against the background of stars.

5.9.8.D.**Galaxies and Universe**

5.9.8.D.1.

Reinforce indicators from previous grade level.

STANDARD 5.10**(Environmental Studies) All students will develop an understanding of the environment as a system of interdependent components affected by human activity and natural phenomena.****5.10.8.A.****Natural Systems and Interactions**

5.10.8.A.1.

Explain how organisms interact with other components of an ecosystem.

5.10.8.A.2.

Describe the natural processes that occur over time in places where direct human impact is minimal.

5.10.8.B.**Human Interactions and Impact**

5.10.8.B.1.

Describe the effect of human activities on various ecosystems.

5.10.8.B.2.

Evaluate the impact of personal activities on the local environment.