

TITLE	NJ STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>A Trip Through the Solar System *</b>  ISBN 0022846662 6 PK ISBN 0022864539	5.2.4.A.1., 5.9.4.B.1.	N	730	<i>A Trip Through the Solar System</i> describes the characteristics of each planet in the solar system, describes the conditions that allow life to flourish on Earth, and mentions that humans have observed the planets for thousands of years.	orbit planet solar system
<b>Amazing Earth</b>  ISBN 0022846654 6 PK ISBN 0022864520	5.8.4.B.1., 5.8.4.B.2.a., 5.8.4.B.2.b., 5.8.4.B.2.c., 5.8.4.B.2.d., 5.8.4.B.2.e., 5.8.4.C.1., 5.8.4.D.1., 5.10.4.B.1.	L	620	<i>Amazing Earth</i> describes Earth's lithosphere, explains that the lithosphere is divided into plates that move, and compares Earth's lithosphere to that of other planets. The hydrosphere and atmosphere are also discussed in this book.	atmosphere hydrosphere lithosphere
<b>Amazing Invertebrates *</b>  ISBN 0022858784 6 PK ISBN 0022865837	5.5.4.A.3., 5.3.4.A.4.b., 5.5.4.A.4.e., 5.5.4.B.1.	N	520	<i>Amazing Invertebrates</i> distinguishes vertebrates and invertebrates and describes in detail many kinds of invertebrates. Invertebrate adaptations for movement, finding food, and staying safe are discussed.	invertebrate mollusk vertebrate
<b>Animal Life Cycles *</b>  ISBN 0022858792 6 PK ISBN 0022865861	5.3.4.C.1., 5.5.4.C.1.	N	450	<i>Animal Life Cycles</i> defines the terms life span and metamorphosis. It describes the life cycle of various animals, including mammals, birds, butterflies, and amphibians.	chrysalis larva life cycle
<b>Bad Weather</b>  ISBN 0022858768 6 PK ISBN 0022865942	5.8.4.B.3., 5.8.4.B.4., 5.8.4.B.5., 5.8.4.B.6.	J	430	<i>Bad Weather</i> defines weather and uses a diagram to illustrate the water cycle. It also describes in detail many forms of severe weather including thunderstorms, lightning, tornadoes, and hurricanes.	hurricane tornado weather

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TITLE	NJ STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>California Condor</b> ISBN 0022846581 6 PK ISBN 0022864458	5.5.4.A.1., 5.5.4.C.1., 5.10.4.B.1.	L	640	<b>California Condor</b> identifies the factors that led to the decline of the California condor population. It also describes measures that are being taken to save the condor from extinction.	extinct habitat wilderness
<b>Chocolate</b> ISBN 0022846719 6 PK ISBN 0022864571	5.2.4.A.1.	O	700	<b>Chocolate</b> explores the history of chocolate, resources required to make chocolate commercially, and the manufacturing process used to make chocolate.	liquid mixture solid
<b>Claws and Wings and Other Neat Things</b> ISBN 0022859438 6 PK ISBN 0022865845	5.1.4.B.1., 5.5.4.A.3.	Q	620	<b>Claws and Wings and Other Neat Things</b> describes adaptations that help living things survive. Examples include a falcon's wings, a wolf's fur, and a badger's claws.	environment peregrine falcon survive
<b>Cool Cats</b> ISBN 0022846522 6 PK ISBN 0022864393	5.5.4.A.1., 5.5.4.A.3.	L	510	<b>Cool Cats</b> describes the characteristics of different members of the cat family. Similarities and difference between different types of cats are discussed.	domestic: predator savanna
<b>Coral Reefs *</b> ISBN 0022846565 6 PK ISBN 0022864431	5.8.4.D.1., 5.10.4.B.1.	N	750	<b>Coral Reefs</b> identifies locations where coral reefs are found, explains how coral reefs are formed, and describes the great variety of living things found in a coral reef environment. It also describes ways that human activity threatens coral reefs and ways that coral reefs can be protected.	coral polyp coral reef limestone
<b>Electrical Inventions</b> ISBN 002285939X 6 PK ISBN 0022866019	5.1.4.B.1., 5.2.4.A.1., 5.2.4.B.1., 5.4.4.C.1., 5.7.4.B.3.	P	700	<b>Electrical Inventions</b> describes inventions, such as the electric light and the electric motor. Information about inventors and current electrical innovations are also included.	circuit conductor invention

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TITLE	NJ STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>Energy for Your Body *</b> ISBN 0022846735 6 PK ISBN 0022864598	5.5.4.A.4.a.	N	780	<b>Energy for Your Body</b> explains why the human body needs energy, identifies that food is the energy source used by humans, and describes how the digestive system changes food to a form the body can use.	<b>carbohydrate mineral protein</b>
<b>Exploring Mars</b> ISBN 0022846670 6 PK ISBN 0022864547	5.2.4.B.1., 5.9.4.D.1.	P	730	<b>Exploring Mars</b> explains how humans have learned about Mars throughout history. Technology, such as orbiters and landers, which advance science are also described.	<b>astronomer lander orbiter</b>
<b>Fossil Hunters</b> ISBN 0022861696 6 PK ISBN 0022865926	5.2.4.A.1., 5.8.4.A.3.	I	610	<b>Fossil Hunters</b> describes how fossils are formed, what paleontologists can learn by studying fossils, and tools that fossil hunters use.	<b>dinosaur fossil paleontologist</b>
<b>Gems *</b> ISBN 0022858814 6 PK ISBN 0022865934	5.1.4.C.1., 5.1.4.C.2.	N	540	<b>Gems</b> describes gems and minerals, describes how to grow crystals, and identifies the many uses of diamonds.	<b>crystal mineral precious</b>
<b>Glassmaking</b> ISBN 0022846689 6 PK ISBN 0022864555	5.2.4.A.1., 5.4.4.C.1., 5.6.4.A.3.	M	670	<b>Glassmaking</b> identifies the resources used to produce glass, describes the process of manufacturing glass, and includes a timeline of the history of glass.	<b>heat hollow solid</b>
<b>Growing a Garden</b> ISBN 0022858741 6 PK ISBN 0022865853	5.1.4.A.1., 5.1.4.A.2., 5.5.4.A.2., 5.5.4.A.3., 5.8.4.A.2.	I	400	<b>Growing a Garden</b> explains that humans use gardens to produce food and describes the function of a plant's parts. The basic needs of plants are identified and photosynthesis is defined.	<b>bulb fertilizer photosynthesis</b>

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TITLE	NJ STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>How Earthquakes &amp; Volcanoes Shape the Earth *</b>  ISBN 0022858806 6 PK ISBN 002286590X	5.8.4.C.1., 5.8.4.D.1.	N	580	<i>How Earthquakes and Volcanoes Shape Earth</i> describes tectonic plates, illustrates how volcanoes and earthquakes change Earth's surface, and explains how scientists help people stay safe in the event of a volcanic eruption or earthquake.	<b>earthquake</b> <b>fault</b> <b>volcano</b>
<b>Living Communities</b>  ISBN 002285875X 6 PK ISBN 0022865888	5.5.4.A.1., 5.8.4.D.1.	J	460	<i>Living Communities</i> identifies the components of an ecosystem, explains the interactions that occur in ecosystems, and describes in detail ecosystems found in hot deserts, cold deserts, grasslands, tundra, and rain forests.	<b>community</b> <b>ecosystem</b> <b>food web</b>
<b>Machines That Build</b>  ISBN 0022859454 6 PK ISBN 0022866000	5.4.4.C.1.	P	690	<i>Machines That Build</i> defines the scientific meaning of the word work, illustrates examples of simple machines, and shows how simple machines are combined in machines used in construction.	<b>compound</b> <b>machine</b> <b>simple machine</b> <b>work</b>
<b>Mighty Metals</b>  ISBN 0022858776 6 PK ISBN 0022865969	5.6.4.A.4., 5.6.4.B.1.	J	430	<i>Mighty Metals</i> describes how metals are used and how metals are mined. The properties of particular metals that makes them well-suited for certain applications are described.	<b>alloy</b> <b>metal</b> <b>ore</b>
<b>Moving Fast</b>  ISBN 0022861718 6 PK ISBN 0022865993	5.3.4.A.3.a., 5.7.4.A.2.b.	J	700	<i>Moving Fast</i> describes and compares the speeds of the fastest-moving animals, cars, trains, planes and people.	<b>distance</b> <b>measure</b> <b>speed</b>
<b>Natural Defenses *</b>  ISBN 0022846530 6 PK ISBN 0022864407	5.5.4.A.3.	N	740	<i>Natural Defenses</i> describes adaptations that plants and animals use to stay safe. Examples of adaptations described include thorns, quills, poisons, and bad smells.	<b>defense</b> <b>poison</b> <b>spines</b>

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TITLE	NJ STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>Predator and Prey</b> ISBN 002286167X 6 PK ISBN 0022865896	5.5.4.A.1., 5.5.4.A.3.	O	680	<b>Predators and Prey</b> describes the predator/prey relationship, and identifies adaptations that enhance predators' ability to hunt and preys' ability to stay safe.	<b>camouflage</b> <b>defense</b> <b>predator</b>
<b>Sun Stories</b> ISBN 002284662x 6 PK ISBN 0022864482	5.2.4.A.1., 5.9.4.A.1.	L	540	<b>Sun Stories</b> describes the importance of the Sun. It also explores ways that ancient cultures, such as the Egyptians, Greeks, Maya, and Aztecs, explained the Sun.	<b>solar eclipse</b> <b>solar system</b> <b>star</b>
<b>The Sounds of Music</b> ISBN 0022846727 6 PK ISBN 002286458X	5.7.4.B.4.	L	780	<b>The Sounds of Music</b> explains that sound is generated by vibrating objects and describes how the ear hears sounds. It gives a detailed description of each family of musical instruments.	<b>percussion</b> <b>sound waves</b> <b>vibration</b>
<b>The Way Eyes See It *</b> ISBN 002284676X 6 PK ISBN 0022864636	5.5.4.A.1., 5.5.4.A.3.	N	690	<b>The Way Eyes See It</b> describes the human eye and compares it to several kinds of animal eyes.	<b>cornea</b> <b>iris</b> <b>lens</b>
<b>Volcano!</b> ISBN 0022861688 6 PK ISBN 0022865918	5.8.4.C.1., 5.8.4.D.1.	O	650	<b>Volcano!</b> describes volcanic eruptions in detail. It explains the cause of eruptions, the effects of eruption, and methods scientists use to predict eruptions.	<b>ash</b> <b>erupt</b> <b>magma</b>
<b>Watching the Weather *</b> ISBN 0022858822 6 PK ISBN 0022865950	5.1.4.A.1., 5.1.4.A.2., 5.1.4.B.1., 5.1.4.B.2., 5.2.4.B.1., 5.3.4.B.2., 5.3.4.D.1. 5.8.4.B.1., 5.8.4.B.3. 5.8.4.B.5., 5.8.4.B.6.	M	510	<b>Watching the Weather</b> defines weather, describes tools used to track weather, and includes instructions for setting up a weather station.	<b>air pressure</b> <b>meteorologist</b> <b>rain gauge</b>

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TITLE	NJ STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>Water, Water Everywhere *</b> ISBN 0022846697 6 PK ISBN 0022864563	5.6.4.A.2., 5.6.4.A.3., 5.8.4.B.4., 5.8.4.B.5., 5.8.4.B.6.	N	730	<i>Water, Water, Everywhere</i> describes the three states in which water exists on Earth, explains the properties of water molecules, and describes the water cycle.	gas matter water cycle
<b>Wetlands</b> ISBN 0022846611 6 PK ISBN 0022864474	5.2.4.A.1., 5.8.4.D.1., 5.10.4.B.1.	O	670	<i>Wetlands</i> describes different types of wetlands, identifies some living things found in wetlands, explains the ecological and economic importance of wetlands, and describes measures that can be taken to save wetlands.	ecosystem marsh swamp
<b>What Makes You Special?</b> ISBN 0022858849 6 PK ISBN 002286587X	5.5.4.B.2.	P	510	<i>What Makes You Special?</i> describes genetic traits, explains how traits are passed from parent to offspring, and illustrates the structure of DNA.	DNA heredity trait
<b>What Sinks and Floats</b> ISBN 0022858857 6 PK ISBN 0022865985	5.1.4.A.1., 5.1.4.B.1.	P	490	<i>What Sinks and Floats</i> defines matter and density. It also describes experiments about sinking and floating that students can carry out.	density mass volume
<b>What Your Body is Made Of *</b> ISBN 0022858830 6 PK ISBN 0022865977	5.5.4.A.4.b., 5.5.4.A.4.e.	N	540	<i>What Your Body Is Made Of</i> identifies the most common elements in the human body, describes the role of water in the body, and explains how food is used to supply nutrients to the body.	cell element nutrient

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TITLE	NJ STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>Why We Need the Sun</b> ISBN 0022846646 6 PK ISBN 0022864512	5.9.4.B.1., 5.10.4.A.1., 5.10.4.B.1.	O	630	<i>Why We Need the Sun</i> describes how the Sun impacts Earth's weather and how fossil fuels form. It also describes Sun safety tips.	<b>fossil fuel</b> <b>solar energy</b> <b>water cycle</b>
<b>Wind Energy</b> ISBN 0022846743 6 PK ISBN 002286461X	5.1.4.B.1., 5.2.4.A.1., 5.4.4.C.1., 5.8.4.B.1., 5.10.4.A.1., 5.10.4.B.1.	P	730	<i>Wind Energy</i> explains how wind energy has been used in the past and present. It also offers predictions about ways that wind energy may be used in the future.	<b>generator</b> <b>wind</b> <b>wind farm</b>

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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.**

### **5.1.4.A.**

#### **Habits of Mind**

5.1.4.A.1.

Raise questions about the world around them and be willing to seek answers through making careful observations and experimentation.

5.1.4.A.2.

Keep records that describe observations, carefully distinguish actual observations from ideas and speculations, and are understandable weeks and months later.

5.1.4.A.3.

Recognize that when a science investigation is replicated, very similar results are expected.

5.1.4.A.4.

Know that when solving a problem it is important to plan and get ideas and help from other people.

### **5.1.4.B.**

#### **Inquiry and Problem Solving**

5.1.4.B.1.

Develop strategies and skills for information-gathering and problem-solving, using appropriate tools and technologies.

5.1.4.B.2.

Identify the evidence used in an explanation.

### **5.1.4.C.**

#### **Safety**

5.1.4.C.1.

Recognize that conducting science activities requires an awareness of potential hazards and the need for safe practices.

5.1.4.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.**

**5.2.4.A.****Cultural Contributions**

5.2.4.A.1.

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

**5.2.4.B.****Historical Perspectives**

5.2.4.B.1.

Hear, read, write, and talk about scientists and inventors in historical context.

**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.**

**5.3.4.A.****Numerical Operations**

5.3.4.A.1.

Determine the reasonableness of estimates, measurements, and computations of quantities when doing science.

5.3.4.A.2.

Recognize and comprehend the orders of magnitude associated with large and small physical quantities.

5.3.4.A.3.

Express quantities using appropriate number formats, such as:

5.3.4.A.3.a.

Integers.

5.3.4.A.3.b.

Fractions.

**5.3.4.B.****Geometry and Measurement**

5.3.4.B.1.

Select appropriate measuring instruments based on the degree of precision required.

5.3.4.B.2.

Use a variety of measuring instruments and record measured quantities using the appropriate units.

**5.3.4.C.****Patterns and Algebra**

5.3.4.C.1. Identify patterns when observing the natural and constructed world.

**5.3.4.D. Data Analysis and Probability**

5.3.4.D.1. Use tables and graphs to represent and interpret 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.**

**5.4.4.A. Science and Technology**

5.4.4.A.1. Distinguish between things that occur in nature and those that have been designed to solve human problems.

**5.4.4.B. Nature of Technology**

5.4.4.B.1. Demonstrate how measuring instruments are used to gather information in order to design things that work properly.

**5.4.4.C. Technological Design**

5.4.4.C.1. Describe a product or device in terms of the problem it solves or the need it meets.

5.4.4.C.2. Choose materials most suitable to make simple mechanical constructions.

5.4.4.C.3. Use the design process to identify a problem, look for ideas, and develop and share solutions with others.

**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.**

**5.5.4.A. Matter, Energy, and Organization in Living Systems**

5.5.4.A.1. Identify the roles that organisms may serve in a food chain.

5.5.4.A.2. Differentiate between the needs of plants and those of animals.

- 5.5.4.A.3. Recognize that plants and animals are composed of different parts performing different functions and working together for the well being of the organism.
- 5.5.4.A.4. Describe the basic functions of the major systems of the human body including, but not limited to:
- 5.5.4.A.4.a. digestive system.
  - 5.5.4.A.4.b. circulatory system.
  - 5.5.4.A.4.c. respiratory system.
  - 5.5.4.A.4.d. nervous system.
  - 5.5.4.A.4.e. skeletal system.
  - 5.5.4.A.4.f. muscular system.
  - 5.5.4.A.4.g. reproductive system.

**5.5.4.B. Diversity and Biological Evolution**

- 5.5.4.B.1. Develop a simple classification scheme for grouping organisms.
- 5.5.4.B.2. Recognize that individuals vary within every species, including humans.

**5.5.4.C. Reproduction and Heredity**

- 5.5.4.C.1. Identify different stages in the lives of various organisms.

**STANDARD 5.6**

**(Chemistry) All students will gain an understanding of the structure and behavior of matter.**

**5.6.4.A. Structure and Properties of Matter**

- 5.6.4.A.1. Sort materials based on physical characteristics that can be seen by using magnification.
- 5.6.4.A.2. Observe that water can be a liquid or a solid and can change from one form to the other and the mass remains the same.

5.6.4.A.3.

Recognize that water, as an example of matter, can exist as a solid, liquid or gas and can be transformed from one state to another by heating or cooling.

5.6.4.A.4.

Show that not all materials respond in the same way when exposed to similar conditions.

**5.6.4.B.****Chemical Reactions**

5.6.4.B.1.

Combine two or more materials and show that the new material may have properties that are different from the original material.

**STANDARD 5.7**

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

**5.7.4.A.****Motion and Forces**

5.7.4.A.1.

Recognize that changes in the speed or direction of a moving object are caused by force and that the greater the force, the greater the change in motion will be.

5.7.4.A.2.

Recognize that some forces can act at a distance.

5.7.4.A.2.a.

gravity

5.7.4.A.2.b.

magnetism

5.7.4.A.2.c.

static electricity

**5.7.4.B.****Energy Transformations**

5.7.4.B.1.

Identify sources of heat and demonstrate that heat can be transferred from one object to another.

5.7.4.B.2.

Identify sources of light and demonstrate that light can be reflected from some surfaces and pass through others.

5.7.4.B.3.

Use devices that show electricity producing heat, light, sound, and magnetic effects.

5.7.4.B.4.

Show that differences in sound (loud or soft, high or low) can be produced by varying the way objects vibrate.

**STANDARD 5.8**

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

**5.8.4.A.****Earth's Properties and Materials**

5.8.4.A.1.

Observe that most rocks and soils are made of several substances or minerals.

5.8.4.A.2.

Observe that the properties of soil vary from place to place and will affect the soil's ability to support life.

5.8.4.A.3.

Recognize that fossils provide evidence about the plants and animals that lived long ago and the nature of the environment at that time.

**5.8.4.B.****Atmosphere and Weather**

5.8.4.B.1.

Recognize that air is a substance that surrounds us, takes up space, and moves around us as wind.

5.8.4.B.2.

Recognize that most of Earth's surface is covered by water and be able to identify the characteristics of those sources of water.

5.8.4.B.2.a.

oceans

5.8.4.B.2.b.

rivers

5.8.4.B.2.c.

lakes

5.8.4.B.2.d.

underground sources

5.8.4.B.2.e.

glaciers

5.8.4.B.3.

Observe weather changes and patterns by measurable quantities such as temperature, wind direction and speed, and amounts of precipitation.

5.8.4.B.4.

Observe that when liquid water disappears, it turns into a gas (vapor) in the air and can reappear as a liquid when cooled, or as a solid if cooled below its freezing point.

5.8.4.B.5.

Observe that rain, snow, and other forms of precipitation come from clouds, but that not all clouds produce precipitation.

5.8.4.B.6.

Recognize that clouds and fog are made of tiny droplets of water and possibly tiny particles of ice.

**5.8.4.C.****Processes that Shape the Earth**

5.8.4.C.1. Recognize that some changes of the Earth's surface are due to slow processes such as erosion and weathering, and some changes are due to rapid changes such as landslides, volcanic eruptions, and earthquakes.

5.8.4.C.2. Recognize that moving water, wind, and ice continually shape the Earth's surface by eroding rock and soil in some areas and depositing them in other areas.

**5.8.4.D. How We Study the Earth**

5.8.4.D.1. Use maps to locate and identify physical features on the Earth.

**STANDARD 5.9**

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

**5.9.4.A. Earth, Moon, Sun System**

5.9.4.A.1. Observe patterns that result from the Earth's position relative to the sun and rotation of the Earth on its axis.

5.9.4.A.2. Recognize and describe the phases of the moon.

**5.9.4.B. Solar System**

5.9.4.B.1. Describe Earth as one of several planets that orbit the sun and the moon as a satellite of the Earth.

**5.9.4.C. Stars**

5.9.4.C.1. Observe that stars are not all the same in brightness, size, and color.

**5.9.4.D. Galaxies and Universe**

5.9.4.D.1. Recognized that images of celestial objects can be magnified and seen in greater detail when observed using binoculars and light telescopes.

5.9.4.D.2. Observe and record short-term and long-term changes in the night sky.

**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.**

**5.10.4.A.**

**Natural Systems and Interactions**

5.10.4.A.1.

Differentiate between natural resources that are renewable and those that are not.

**5.10.4.B.**

**Human Interactions and Impact**

5.10.4.B.1.

Explain how meeting human requirements affects the environment.