

TITLE	MO STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>Air Pollution</b> ISBN 0022847170 6 PK ISBN 0022865039	5.2.C.a, 8.1.C.a, 8.3.A.a	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
<b>Alloys: Metals in the Mix *</b> ISBN 002284726X 6 PK ISBN 0022865128	8.1.C.a, 8.2.A.a	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
<b>Amusement Park Rides</b> ISBN 0022859152 6 PK ISBN 0022866361	2.2.D.a, 2.2.F.b, 8.2.A.a, 8.3.A.a	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
<b>Animal Adaptations</b> ISBN 0022847111 6 PK ISBN 0022864962	3.1.D.a, 8.3.A.b	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
<b>Can Cells Grow Too Much?</b> ISBN 0022847049 6 PK ISBN 002286489X	3.2.C.a, 8.1.B.a, 8.1.C.a	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
<b>Carbon All Around *</b> ISBN 0022847235 6 PK ISBN 002286508X	1.1.D.a, 8.1.C.a, 8.2.A.a, 8.3.A.a	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

TITLE	MO STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>Cells</b> ISBN 0022847022 6 PK ISBN 0022864873	7.1.B.a, 7.1.B.b, 7.1.C.a, 8.1.B.a, 8.1.C.a, 8.2.A.a	S		<b>Cells</b> 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
<b>Costa Rican Rain Forests</b> ISBN 0022847081 6 PK ISBN 0022864946	3.1.D.a	S	800	<b>Costa Rican Rain Forests</b> 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
<b>Discovering the Elements</b> ISBN 0022847227 6 PK ISBN 0022865071	8.2.A.a	T	730	<b>Discovering the Elements</b> 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
<b>Earth's Heat</b> ISBN 0022861750 6 PK ISBN 0022866310	8.1.B.a, 8.2.A.a	W	800	In <b>Earth's Heat</b> , 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
<b>Earth's Oceans</b> ISBN 0022861742 6 PK ISBN 0022866272	5.1.B.a, 5.3.A.a, 5.3.A.b, 5.3.A.c, 8.1.B.a	W	820	<b>Earth's Oceans</b> 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
<b>Earth's Water</b> ISBN 0022861769 6 PK ISBN 0022864997	5.2.E.a, 5.2.E.b, 5.3.A.a, 5.3.A.b, 5.3.A.c, 8.3.A.a	S	860	<b>Earth's Water</b> 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

\* - Also available in an English Language Learner version

TITLE	MO STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>Genetics</b> ISBN 0022859136 6 PK ISBN 0022866256	7.1.B.a, 8.1.B.a, 8.1.C.a, 8.2.A.a	W	780	<i>Genetics</i> 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
<b>Global Weather</b> ISBN 0022859144 6 PK ISBN 0022866337	5.2.E.a, 5.2.E.b, 8.2.A.a	W	670	<i>Global Weather</i> 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
<b>Hurricanes and Tornadoes</b> ISBN 0022847154 6 PK ISBN 0022865012	5.2.F.a, 8.1.B.a, 8.2.A.a	T	830	<i>Hurricanes and Tornadoes</i> explains how hurricanes and tornadoes form, locations where they commonly occur, and types of damage they cause.	air pressure cyclone hurricane thunderstorm typhoon
<b>Life Goes On *</b> ISBN 0022847219 6 PK ISBN 0022865063	8.3.A.a	U	690	Sexual and asexual reproduction are compared and contrasted in <i>Life Goes On</i> . This book also discusses diversity among individuals, and adaptations that help young organisms survive in different environments.	asexual reproduction fertilization pollination sexual reproduction species
<b>Life on a Space Station</b> ISBN 0022847219 6 PK ISBN 0022865063	8.1.B.a, 8.1.C.a, 8.2.A.a, 8.3.A.a	V	900	Students explore everyday life on a space station, the history of the space station, and careers in space exploration in <i>Life On a Space Station</i> .	atmosphere microgravity mission orbit radiation
<b>Looking to the Sky</b> ISBN 0022847189 6 PK ISBN 0022865047	5.2.C.a, 6.1.A.a, 6.1.A.c, 8.1.B.a, 8.2.A.a, 8.3.A.a	T	820	<i>Looking to the Sky</i> 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

\* - Also available in an English Language Learner version

TITLE	MO STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>Magnetism</b> ISBN 0022859071 6 PK ISBN 0022866388	8.1.A.a, 8.1.C.a, 8.2.A.a	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.	<b>compass</b> <b>electromagnet</b> <b>magnet magnetic</b> <b>field pole</b>
<b>Mission: Green Earth *</b> ISBN 0022859101 6 PK ISBN 0022866329	5.3.A.a, 5.3.A.b, 5.3.A.c, 8.3.A.a	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.	<b>environment</b> <b>global warming</b> <b>natural resource</b> <b>nonrenewable</b> <b>renewable</b>
<b>Mixtures and Solutions</b> ISBN 0022859373 6 PK ISBN 0022866345	1.1.C.a	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.	<b>chemical change</b> <b>mixture</b> <b>physical change</b> <b>solution</b> <b>suspension</b>
<b>Motion and Energy at Play *</b> ISBN 002285911X 6 PK ISBN 002286637X	2.2.D.a, 2.2.F.b, 2.2.F.d	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.	<b>accelerate</b> <b>friction</b> <b>gravity inertia</b> <b>physics</b>
<b>Nature's Partners</b> ISBN 0022859047 6 PK ISBN 0022866264	3.1.D.a	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.	<b>commensalism</b> <b>mutualism</b> <b>organism</b> <b>parasitism</b> <b>symbiosis</b>
<b>One-Celled Organisms *</b> ISBN 0022847030 6 PK ISBN 0022864881	3.1.E.a, 8.1.B.a, 8.1.C.a	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.	<b>bacteria</b> <b>cell</b> <b>fungi/fungus</b> <b>microbe</b> <b>protist</b>

\* - Also available in an English Language Learner version

TITLE	MO STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>Periodic Table Families</b> ISBN 0022847243 6 PK ISBN 0022865098	1.1.C.a, 1.1.D.a, 1.1.D.b, 8.1.B.a, 8.1.C.a, 8.2.A.a	V	840	<b>Periodic Table Families</b> 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
<b>Plastics</b> ISBN 0022847278 6 PK ISBN 0022865136	1.1.D.b, 8.1.C.a, 8.2.A.a, 8.3.A.a	W	890	<b>Plastics</b> 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
<b>Seeds and Spores</b> ISBN 0022861734 6 PK ISBN 0022864938	3.1.E.a	O	770	<b>Seeds and Spores</b> 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
<b>Shake, Rattle, and Explode *</b> ISBN 0022859098 6 PK ISBN 0022866299	8.1.B.a, 8.1.C.a	U	660	Volcanoes are the focus of <b>Shake, Rattle, and Explode!</b> 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
<b>Sir Isaac Newton</b> ISBN 0022859063 6 PK ISBN 0022866353	2.2.D.a, 2.2.F.a, 7.1.B.a, 8.1.B.a, 8.2.A.a	P	510	<b>Sir Isaac Newton</b> 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
<b>Sonar, Radar, and Lasers</b> ISBN 0022859160 6 PK ISBN 0022863418	5.2.F.a, 8.1.B.a, 8.1.C.a	W	830	<b>Sonar, Radar, and Lasers</b> gives an overview of how these three technologies work and their current and possible future applications.	laser optic fiber radar sonar transmitter

\* - Also available in an English Language Learner version

TITLE	MO STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>The Sun and Other Stars *</b> ISBN 0022847197 6 PK ISBN 0022865055	1.2.C.a, 6.1.B.a, 6.2.C.c, 8.1.B.a, 8.2.A.a	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
<b>The Water Cycle *</b> ISBN 0022847138 6 PK ISBN 0022864989	5.1.B.a., 5.1.B.b, 5.2.E.a, 5.2.E.b, 5.3.A.a, 5.3.A.b, 5.3.A.c	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
<b>The Weather Detectives *</b> ISBN 0022847162 6 PK ISBN 0022865020	1.2.C.a, 5.2.E.b, 5.2.F.a, 5.2.F.b, 8.1.B.a, 8.1.C.a, 8.2.A.a	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
<b>Weird and Wonderful Plants *</b> ISBN 0022847065 6 PK ISBN 002286492X	3.1.E.b	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
<b>What is GPS?</b> ISBN 0022859055 6 PK ISBN 0022866280	8.1.B.a, 8.1.C.a, 8.3.A.a	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
<b>When Energy Changes *</b> ISBN 0022859128 6 PK ISBN 0022866396	1.2.C.a, 3.1.E.b, 8.2.A.a, 8.3.A.a	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

\* - Also available in an English Language Learner version

# Missouri Science Grade-Level Expectations

## Strand 1

## Properties and Principles of Matter and Energy

### 1.1

**Changes in properties and states of matter provide evidence of the atomic theory of matter**

### 1.1.C

**Properties of matter can be explained in terms of moving particles too small to be seen without tremendous magnification**

#### 1.1.C.a

Recognize how changes in state (i.e., freezing/melting, condensation/evaporation) provide evidence that matter is made of particles too small to be seen

### 1.1.D

**Physical changes in the state of matter that result from thermal changes can be explained by the Kinetic Theory of Matter**

#### 1.1.D.a

Classify matter as a solid, a liquid, or a gas, as it exists at room temperature, using physical properties (i.e., volume, shape, ability to flow)

#### 1.1.D.b

Predict the effect of heat energy on the physical properties of water as it changes to and from a solid, liquid, or gas (i.e., freezing/melting, evaporation/condensation)

### 1.1.I

**Mass is conserved during any physical or chemical change**

#### 1.1.I.a

Recognize the mass of water remains constant as it changes state (as evidenced in a closed container)

### 1.2

**Energy has a source, can be transferred, and can be transformed into various forms but is conserved between and within systems**

### 1.2.A

**Forms of energy have a source, a means of transfer (work and heat), and a receiver**

#### 1.2.A.a

Recognize light can be transferred from the source to the receiver (eye) through space in straight lines

1.2.A.b Recognize how an object (e.g., moon, mirror, objects in a room) can only be seen when light is reflected from that object to the receiver (eye)

**1.2.C Electromagnetic energy from the Sun (solar radiation) is a major source of energy on Earth**

1.2.C.a Recognize the Sun as the primary source of energy for temperature change on Earth

**Strand 2**

**Properties and Principles of Force and Motion**

**2.2**

**Forces affect motion**

**2.2.A Forces are classified as either contact forces (pushes, pulls, friction, buoyancy) or non-contact forces (gravity, magnetism), that can be described in terms of direction and magnitude**

2.2.A.a Identify the forces acting on a load and use a spring scale to measure the weight (resistance force) of the load

**2.2.D Newton's Laws of Motion explain the interaction of mass and forces, and are used to predict changes in motion**

2.2.D.a Describe how friction affects the amount of force needed to do work over different surfaces or through different media

**2.2.F Simple machines (levers, inclined planes, wheel and axle, pulleys) affect the force applied to an object and/or direction of movement as work is done**

2.2.F.a Explain how work can be done on an object (force applied and distance moved) (No formula calculations at this level)

2.2.F.b Recognize simple machines change the amount of effort force and/or direction of force

2.2.F.c Compare the measures of effort force (measured using a spring scale to the nearest Newton) needed to lift a load with and without the use of simple machines

2.2.F.d Identify the simple machines in common tools and household items

**Strand 3**

**Characteristics and Interactions of Living Organisms**

- 3.1** **There is a fundamental unity underlying the diversity of all living organisms**
- 3.1.D** **Plants and animals have different structures that serve similar functions necessary for the survival of the organism**
- 3.1.D.a Compare structures (e.g., wings vs. fins vs. legs; gills vs. lungs; feathers vs. hair vs. scales) that serve similar functions for animals belonging to different vertebrate classes
- 3.1.E** **Biological classifications are based on how organisms are related**
- 3.1.E.a Explain how similarities are the basis for classification
- 3.1.E.b Distinguish between plants (which use sunlight to make their own food) and animals (which must consume energy-rich food)
- 3.1.E.c Classify animals as vertebrates or invertebrates
- 3.1.E.d Classify vertebrate animals into classes (amphibians, birds, reptiles, mammals, fish) based on their characteristics
- 3.1.E.e Identify plants or animals using simple dichotomous keys
- 3.2** **Living organisms carry out life processes in order to survive**
- 3.2.C** **Complex multicellular organisms have systems that interact to carry out life processes through physical and chemical means**
- 3.2.C.a Recognize the major life processes carried out by the major systems of plants and animals (e.g., support, reproductive, digestive, transport/circulatory, excretory, response) (Do NOT assess naming of organs within each system or explanation of the processes carried out by those systems)
- Strand 5** **Processes and Interactions of the Earth's Systems (Geosphere, Atmosphere, and Hydrosphere)**
- 5.1** **Earth's systems (geosphere, atmosphere, and hydrosphere) have common components and unique structures**

**5.1.B****The hydrosphere is composed of water (a material with unique properties) and other materials**

5.1.B.a

Classify major bodies of surface water (e.g., rivers, lakes, oceans, glaciers) as fresh or salt water, flowing or stationary, large or small, solid or liquid, surface or groundwater

5.1.B.b

Relate the type of water body to the process by which it was formed

**5.2.C****The atmosphere (air) is composed of a mixture of gases, including water vapor, and minute particles**

5.2.C.a

Recognize the atmosphere is composed of a mixture of gases, water, and minute particles

**5.2****Earth's Systems (geosphere, atmosphere, and hydrosphere) interact with one another as they undergo change by common processes****5.2.E****Changes in the form of water as it moves through Earth's systems are described as the water cycle**

5.2.E.a

Describe and trace the path of water as it cycles through the hydrosphere, geosphere, and atmosphere (i.e., the water cycle: evaporation, condensation, precipitation, surface run-off/ groundwater flow)

5.2.E.b

Identify the different forms water can take (e.g., snow, rain, sleet, fog, clouds, dew) as it moves through the water cycle

**5.2.F****Constantly changing properties of the atmosphere occur in patterns which are described as weather**

5.2.F.a

Identify and use appropriate tools (i.e., thermometer, anemometer, wind vane, hygrometer, barometer, rain gauge, satellite images, weather maps) to collect weather data (i.e., temperature, wind speed and direction, relative humidity, air pressure, precipitation, cloud type and cover)

5.2.F.b

Recognize and summarize relationships between weather data (e.g., temperature and time of day, cloud cover and temperature, wind direction and temperature) collected over a period of time

**5.3****Human activity is dependent upon and affects Earth's resources and systems****5.3.A****Earth's materials are limited natural resources affected by human activity**

- 5.3.A.a Explain how major bodies of water are important natural resources for human activity (e.g., food, recreation, habitat, irrigation, solvent, transportation)
- 5.3.A.b Describe how human needs and activities (e.g., irrigation, damming of rivers, waste treatment, sources of drinking water) have affected the quantity and quality of major bodies of fresh water
- 5.3.A.c Propose solutions to problems related to water quality and availability that result from human activity

**Strand 6****Composition and Structure of the Universe and the Motion of the Objects Within It****6.1****The universe has observable properties and structure****6.1.A****The Earth, Sun, and moon are part of a larger system that includes other planets and smaller celestial bodies**

## 6.1.A.a

Recognize the Earth is one of several planets within a solar system that orbits the Sun

## 6.1.A.b

Recognize the moon orbits the Earth

## 6.1.A.c

Recognize planets look like stars and appear to move across the sky among the stars

**6.1.B****The Earth has a composition and location suitable to sustain life**

## 6.1.B.a

Describe physical features of the planet Earth that allows life to exist (e.g., air, water, temperature) and compare these to the physical features of the Sun, the moon, and other planets

**6.2****Regular and predictable motions of objects in the universe can be described and explained as the result of gravitational forces****6.2.B****The apparent position of the moon, as seen from Earth, and its actual position relative to Earth change in observable patterns**

## 6.2.B.a

Sequence images of the lit portion of the moon seen from Earth as it cycles day-to-day in about a month in order of occurrence (Do NOT assess cause of moon phases)

**6.2.C**

**The regular and predictable motions of the Earth and moon relative to the Sun explain natural phenomena on Earth, such as day, month, year, shadows, moon phases, eclipses, tides, and seasons**

## 6.2.C.a

Recognize the Earth rotates once every 24 hours

## 6.2.C.b

Relate changes in the length and position of a shadow to the time of day and apparent position of the Sun in the sky, as determined by Earth's rotation

## 6.2.C.c

Relate the apparent motion of the Sun, moon, and stars in the sky to the rotation of the Earth (Do not assess apparent motion of polar constellations)

## 6.2.C.d

Regular and predictable motions of objects in the universe can be described and explained as the result of gravitational forces

**Strand 7****Scientific Inquiry****7.1**

**Science understanding is developed through the use of science process skills, scientific knowledge, scientific investigation, reasoning, and critical thinking**

**7.1.A**

**Scientific inquiry includes the ability of students to formulate a testable question and explanation, and to select appropriate investigative methods in order to obtain evidence relevant to the explanation**

## 7.1.A.a

Formulate testable questions and explanations (hypotheses)

## 7.1.A.b

Recognize the characteristics of a fair and unbiased test

## 7.1.A.c

Conduct a fair test to answer a question

## 7.1.A.d

Make suggestions for reasonable improvements or extensions of a fair test

**7.1.B**

**Make suggestions for reasonable improvements or extensions of a fair test**

## 7.1.B.a

Make qualitative observations using the five senses

- 7.1.B.b Determine the appropriate tools and techniques to collect data
- 7.1.B.c Use a variety of tools and equipment to gather data (e.g., hand lenses, magnets, thermometers, metric rulers, balances, graduated cylinders, spring scales)
- 7.1.B.d Measure length to the nearest centimeter, mass to the nearest gram, volume to the nearest milliliter, temperature to the nearest degree Celsius, weight to the nearest Newton
- 7.1.B.e Compare amounts/measurements
- 7.1.B.f Judge whether measurements and computation of quantities are reasonable
- 7.1.C Evidence is used to formulate explanations**
- 7.1.C.a Use quantitative and qualitative data as support for reasonable explanations
- 7.1.C.b Use data as support for observed patterns and relationships, and to make predictions to be tested
- 7.1.D Scientific inquiry includes evaluation of explanations (hypotheses, laws, theories) in light of scientific principles (understandings)**
- 7.1.D.a Evaluate the reasonableness of an explanation
- 7.1.D.b Analyze whether evidence and scientific principles support proposed explanations
- 7.1.E The nature of science relies upon communication of results and justification of explanations**
- 7.1.E.a Communicate the procedures and results of investigations and explanations through:
- oral presentations
  - drawings and maps
  - data tables
  - graphs (bar, single line, pictograph)
  - writings

**Strand 8****Impact of Science, Technology and Human Activity**

- 8.1                    The nature of technology can advance, and is advanced by, science as it seeks to apply scientific knowledge in ways that meet human needs**
- 8.1.A                Designed objects are used to do things better or more easily and to do some things that could not otherwise be done at all**
- 8.1.A.a              Design and construct a machine, using materials and/or existing objects, that can be used to perform a task (Assess Locally)
- 8.1.B                Advances in technology often result in improved data collection and an increase in scientific information**
- 8.1.B.a              Describe how new technologies have helped scientists make better observations and measurements for investigations (e.g., telescopes, electronic balances, electronic microscopes, x-ray technology, computers, ultrasounds, computer probes such as thermometers)
- 8.1.C                Technological solutions to problems often have drawbacks as well as benefits**
- 8.1.C.a              Identify how the effects of inventions or technological advances (e.g., complex machinery, technologies used in space exploration, satellite imagery, weather observation and prediction, communication, transportation, robotics, tracking devices) may be helpful, harmful, or both (Assess Locally)
- 8.2                    Historical and cultural perspectives of scientific explanations help to improve understanding of the nature of science and how science knowledge and technology evolve over time**
- 8.2.A                People of different gender and ethnicity have contributed to scientific discoveries and the invention of technological innovations**
- 8.2.A.a              Research biographical information about various scientists and inventors from different gender and ethnic backgrounds, and describe how their work contributed to science and technology (Assess Locally)
- 8.3                    Science and technology affect, and are affected by, society**
- 8.3.A                People, alone or in groups, are always making discoveries about nature and inventing new ways to solve problems and get work done**

8.3.A.a

Identify a question that was asked, or could be asked, or a problem that needed to be solved when given a brief scenario (fiction or nonfiction of people working alone or in groups solving everyday problems or learning through discovery)

8.3.A.b

Work with a group to solve a problem, giving due credit to the ideas and contributions of each group member (Assess Locally)