

TITLE	MO STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>Alexander Graham Bell *</b> ISBN 0022858679 6 PK ISBN 0022865810	1.2.A.a, 1.2.A.c	K	490	<i>Alexander Graham Bell</i> describes the life and inventions of Alexander Graham Bell. It explains how Bell applied scientific ideas to invent the telephone. Basic information about sound and how it travels are also included.	<b>experiment transmitter vibrate</b>
<b>All About Magnets</b> ISBN 0022846514 6 PK ISBN 0022864385	1.1.A.a, 2.2.A.a, 2.2.A.b, 7.1.B.a	M	580	<i>All About Magnets</i> describes properties of magnets and Earth's magnetic field. It also explains that magnets are used for navigation, in computer disks, in maglev trains, and in the space shuttle.	<b>magnetic magnetic field poles</b>
<b>Animal Parents</b> ISBN 0022846328 6 PK ISBN 0022864210	3.1.B.a, 3.3.D.a	H	610	<i>Animal Parents</i> describes how various animals care for their young. A variety of fish, birds, reptiles and mammals are discussed in this book.	<b>hatch instinct survive</b>
<b>Animals in Danger</b> ISBN 0022859357 6 PK ISBN 0022865586	7.1.E.a, 8.3.A.a	G	440	<i>Animals in Danger</i> identifies factors that endanger animals, such as pollution and destruction of habitat. Measures that can be taken to help endangered animals are also described.	<b>DDT habitat hatch</b>
<b>Apple Trees</b> ISBN 002284631X 6 PK ISBN 0022864202	7.1.E.a	L	640	<i>Apple Trees</i> describes how apple trees change with the seasons, identifies the functions of roots, stems, and leaves, describes the process of photosynthesis, and discusses the life cycle of an apple tree.	<b>chlorophyll photosynthesis pollinate</b>
<b>Beyond the Sky *</b> ISBN 0022858644 6 PK ISBN 0022865721	7.1.E.a, 8.1.B.a	J	460	<i>Beyond the Sky</i> describes stars, including the Sun, and the solar system. Apparent movement of the Sun is related to the motion of Earth. Stars, tools used to observe stars, and phases of the moon are also explained.	<b>solar system star telescope</b>

\* - Also available in an English Language Learner version

TITLE	MO STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>Bicycle Metals</b> ISBN 0022858733 6 PK ISBN 0022865799	1.1.A.b, 1.1.B.a, 7.1.E.a	K	460	<i><b>Bicycle Metals</b></i> describes the properties of metals, explains how mixtures of metals are used, and discusses how the qualities of different metals make them well-suited for different purposes.	<b>aluminum metal mixture</b>
<b>Big Orange Pumpkins</b> ISBN 002284628X 6 PK ISBN 0022864180	5.3.A.a, 7.1.E.a	H	400	<i><b>Big Orange Pumpkins</b></i> describes the functions of different plant parts, identifies the steps in a pumpkin plant's life cycle, and explains ways that humans use pumpkins.	<b>fruit root seed</b>
<b>Day and Night</b> ISBN 0022858563 6 PK ISBN 0022865713	7.1.E.a	E	110	<i><b>Day and Night</b></i> explains how a globe is used to model Earth, and how Earth's motion relative to the Sun causes day and night.	<b>Earth Sun tilt</b>
<b>Desert Life</b> ISBN 0022858539 6 PK ISBN 0022865616	7.1.B.a, 7.1.E.a	E	390	<i><b>Desert Life</b></i> describes the climate in desert areas, identifies forms of life found in deserts, and mentions adaptations of desert plants and desert animals.	<b>desert saguaro cactus scaly</b>
<b>Different Kinds of Land</b> ISBN 0022858547 6 PK ISBN 0022865640	5.3.A.a, 7.1.B.a	G	320	<i><b>Different Kinds of Land</b></i> identifies different landforms, such as mountains, valleys, plains, forests and deserts.	<b>landform mountain plain</b>
<b>Electricity</b> ISBN 0022858598 6 PK ISBN 0022865802	No correlation	E	270	<i><b>Electricity</b></i> classifies electricity as a form of energy, explains how electricity is used in the home, and describes how batteries are used.	<b>battery electricity energy</b>

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TITLE	MO STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>Fast Changes on Earth</b> ISBN 0022858695 6 PK ISBN 0022865667	5.2.A.a, 7.1.E.a	L	480	<i>Fast Changes on Earth</i> describes events that rapidly change Earth, such as floods, tornadoes, earthquakes, land slides, and volcanoes. Photos illustrate each of these events.	<b>earthquake flood landslide</b>
<b>Finding Fossils *</b> ISBN 0022846395 6 PK ISBN 0022864288	5.1.A.b, 8.1.B.a	J	750	<i>Finding Fossils</i> explains what scientists can learn by studying fossils, how fossils are found, and how scientists apply knowledge about fossils to the study of today's world.	<b>fossil microscope paleontologist</b>
<b>From Seed to Tree *</b> ISBN 0022846298 6 PK ISBN 0022864199	7.1.E.a	J	480	<i>From Seed to Tree</i> describes the life cycle of an apple tree, identifies seasonal changes apple trees undergo, and describes ways that people use apples.	<b>life cycle pollen sapling</b>
<b>From Tadpole to Frog</b> ISBN 0022846344 6 PK ISBN 0022864237	3.1.B.a, 3.1.B.b, 3.1.B.c, 3.3.D.a, 7.1.E.a	L	560	<i>From Tadpole to Frog</i> describes the life cycle of a frog, including the changes that occur when a tadpole changes to become a frog. Chapter 7 includes some fun facts about frogs.	<b>hatch life cycle tadpole</b>
<b>Gases Matter *</b> ISBN 0022858652 6 PK ISBN 0022865756	5.1.A.a, 5.3.A.a, 7.1.B.a	H	500	<i>Gases Matter</i> begins by describing solids, liquids, and gases. The properties of gases are described in detail. The carbon and nitrogen cycle are also discussed.	<b>gas matter nitrogen</b>

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TITLE	MO STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>Get Moving!</b> ISBN 002284645X 6 PK ISBN 0022864334	2.2.A.c, 2.2.B.a, 2.2.D.a, 2.2.F.b, 2.2.F.c, 7.1.E.a	H	460	<b>Get Moving</b> describes forces, such as gravity and friction, that affect the motion of objects. Tools and machines used to change motion and apply forces are also described.	<b>force</b> <b>gravity</b> <b>tool</b>
<b>Hot Air Balloons</b> ISBN 0022858725 6 PK ISBN 0022865764	7.1.E.a	L	430	<b>Hot Air Balloons</b> describes the history of hot air balloons, how a hot air balloon works, and the role of heat energy in the function of a hot air balloon.	<b>energy</b> <b>gas</b> <b>heat</b>
<b>Journey into Space</b> ISBN 0022858717 6 PK ISBN 002286573X	8.1.B.a	K	480	<b>Journey into Space</b> explores the history of space flight beginning with the Wright brothers, and describes modern space exploration, including satellites, Moon walks, space shuttles, space probes, and the International Space Station.	<b>astronaut</b> <b>probe</b> <b>space shuttle</b>
<b>Let's Recycle! *</b> ISBN 0022846433 6 PK ISBN 0022864318	5.3.A.a, 8.3.A.a	K	650	<b>Let's Recycle</b> describes dumps and landfills, defines reducing and reusing, and explains the process of recycling. Actions that individuals can take to promote recycling are also described.	<b>recycle</b> <b>reduce</b> <b>reuse</b>
<b>Make a Pizza *</b> ISBN 0022858660 6 PK ISBN 0022865780	7.1.E.a	J	500	<b>Make a Pizza</b> describes the changes that pizza ingredients undergo as they are mixed and cooked. Ingredients are classified as solids or liquids, and the process of boiling is described.	<b>boil</b> <b>liquid</b> <b>solid</b>
<b>Matter and Change</b> ISBN 0022858571 6 PK ISBN 0022865748	7.1.E.a	G	390	<b>Matter and Change</b> defines matter and describes everyday examples of solids, liquids, and gases. Changes in matter caused by heating and cooling are also described.	<b>heat</b> <b>matter</b> <b>solid</b>

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TITLE	MO STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>Minerals</b> ISBN 0022846379 6 PK ISBN 0022864261	5.1.A.b, 5.3.A.a, 7.1.B.a, 7.1.E.a	M		<i>Minerals</i> describes the properties of minerals and the rock cycle. Common minerals are pictured and described. Properties of minerals, such as hardness, are described.	<b>crystal gemstone mineral</b>
<b>Mix It Up</b> ISBN 002285858X 6 PK ISBN 0022865772	1.1.A.b, 1.1.B.a, 7.1.A.a, 7.1.A.b, 7.1.B.a, 7.1.C.a, 7.1.E.a	F	210	<i>Mix It Up</i> describes mixtures and solutions. Everyday examples of mixtures, such as trail mix, and solutions, such as salt water, are shown.	<b>dissolve mixture solution</b>
<b>Push or Pull? *</b> ISBN 0022846468 6 PK ISBN 0022864342	2.2.D.a, 2.2.D.b, 7.1.E.a	J	350	<i>Push or Pull?</i> defines force as a push or pull, explains the role of forces in changing motion, and depicts everyday examples of forces changing motion.	<b>direction force machine</b>
<b>Saving Animals</b> ISBN 0022859365 6 PK ISBN 0022865594	3.1.B.a, 8.3.A.a	M	660	<i>Saving Animals</i> defines the term endangered and identifies some endangered animals, such as California sea otters, manatees, green sea turtles, bighorn sheep, and California condors. It also identifies steps that are being taken to save each of these animals.	<b>endangered habitat reptile</b>
<b>Soil</b> ISBN 0022846352 6 PK ISBN 0022864245	5.1.A.a, 5.2.A.a, 5.3.A.a, 7.1.B.a	I	470	<i>Soil</i> differentiates soil and dirt and describes the layers of soil. It also identifies soil as a resource and describes ways that soil can be conserved.	<b>humus mineral nutrient</b>

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TITLE	MO STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>The Big Splash! *</b> ISBN 0022858628 6 PK ISBN 0022865659	8.1.B.a	J	500	<i>The Big Splash</i> explains why Earth is called the water planet, describes the zones of the ocean and pictures and describes forms of life found in each part of the ocean.	coral reef ocean volcano
<b>The Camera's Eye</b> ISBN 0022861661 6 PK ISBN 0022865829	No correlation	L	620	<i>The Camera's Eye</i> compares the structure of the human eye and a camera, explains how a camera works, describes the history of the camera, and discusses how modern digital cameras work.	lens pupil shutter
<b>Tracking Weather</b> ISBN 0022858709 6 PK ISBN 0022865691	7.1.B.a, 7.1.B.b, 7.1.E.a, 8.1.B.a	L	540	<i>Tracking Weather</i> explains how weather was forecast long ago, tools that are used to forecast weather, and technology used to learn about weather. Chapter 6 describes how scientific models are used in weather forecasting.	barometer radar satellite
<b>Two Kinds of Forests *</b> ISBN 002285861X 6 PK ISBN 0022865624	7.1.B.a, 7.1.E.a	J	500	<i>Two Kinds of Forests</i> compares a woodland forest to a rainforest. The climates in which each type of forest is found are described, seasonal changes in forests are pictured, and adaptations such as migration and hibernation are defined.	climate hibernate migrate
<b>Wait and See *</b> ISBN 0022846336 6 PK ISBN 0022864229	3.1.B.a, 3.1.B.b, 3.1.B.c, 3.3.D.a, 7.1.E.a	J	430	<i>Wait and See</i> describes the life cycle of a bird, a butterfly, a frog, and a sea turtle.	hatching pupa tadpole
<b>Water for Life</b> ISBN 0022858555 6 PK ISBN 0022865675	5.3.A.a	G	290	<i>Water for Life</i> identifies the importance of water and describes the water cycle. Different forms of precipitation, such as hail and sleet are described.	hail sleet water cycle

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TITLE	MO STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>Water Habitats</b> ISBN 0022858687 6 PK ISBN 0022865632	7.1.E.a	L	470	<i><b>Water Habitats</b></i> describes the physical characteristics of oceans, lakes, ponds, river, streams, and wetlands and the living things found in each.	<b>habitat</b>
<b>What Do Clouds Tell Us? *</b> ISBN 0022858636 6 PK ISBN 0022865683	7.1.B.a	J	450	<i><b>What Do Clouds Tell Us?</b></i> describes how clouds form, identifies different types of clouds, and identifies the weather associated with each type of cloud.	<b>cirrus</b> <b>cumulus</b> <b>stratus</b>

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# 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.A Objects, and the materials they are made of, have properties that can be used to describe and classify them**

1.1.A.a Describe and compare the physical properties of objects by using simple tools (i.e., thermometer, magnifier, centimeter ruler, balance, magnet)

1.1.A.b Classify objects as “one kind of material” or a mixture

**1.1.B Properties of mixtures depend upon the concentrations, properties, and interactions of particles**

1.1.B.a Observe and describe how mixtures are made by combining solids

1.1.B.b Describe ways to separate the components of a mixture by their physical properties (e.g., sorting, magnets, screening)

**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 that sound travels through different mediums (i.e., air, water, solids)

1.2.A.b Describe different ways to change the pitch of a sound (i.e., changes in size, such as length or thickness, and in tightness/tension of the source)

1.2.A.c Describe how the ear serves as a receiver of sound (i.e., sound vibrates eardrum)

## Strand 2

### Properties and Principles of Force and Motion

**2.2 Forces affect motion**

**2.2.A**

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

2.2.A.a

Recognize magnets attract and repel each other and certain materials

2.2.A.b

Describe magnetism as a force that can push or pull other objects without touching them

2.2.A.c

Measure (using non-standard units) and compare the force (i.e., push or pull) required to overcome friction and move an object over different surfaces (i.e., rough, smooth)

**2.2.B**

**Every object exerts a gravitational force on every other object**

2.2.B.a

Describe Earth's gravity as a force that pulls objects on or near the Earth toward the Earth without touching the object

**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 the direction and amount of force (i.e., direction of push or pull, strong/weak push or pull) needed to change an object's motion (i.e., faster/slower, change in direction)

2.2.D.b

Describe and compare the distances traveled by heavier/lighter objects after applying the same amount of force (i.e., push or pull) in the same direction

2.2.D.c

Describe and compare the distances traveled by objects with the same mass after applying different amounts of force (i.e., push or pull) in the same direction

**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

Compare and describe the amount of force (i.e., more, less, or same push or pull) needed to raise an object to a given height, with or without using inclined planes (ramps) of different slopes

2.2.F.b

Compare and describe the amount of force (i.e., more, less, or same push or pull) needed to raise an object to a given height, with or without using levers

2.2.F.c

Apply the use of an inclined plane (ramp) and/or lever to different real life situations in which objects are raised

**Strand 3****Characteristics and Interactions of Living Organisms****3.1****There is a fundamental unity underlying the diversity of all living organisms****3.1.B****Organisms progress through life cycles unique to different types of organisms**

## 3.1.B.a

Recognize that animals progress through life cycles of birth, growth and development, reproduction, and death

## 3.1.B.b

Record observations on the life cycle of different animals (e.g., butterfly, frog, chicken)

## 3.1.B.c

Sequence the stages in the life cycle of animals (i.e., butterfly, frog, chicken)

**3.3****There is a genetic basis for the transfer of biological characteristics from one generation to the next through reproductive processes****3.3.D****There is heritable variation within every species of organism**

## 3.3.D.a

Identify and relate the similarities and differences between animal parents and their offspring

## 3.3.D.b

Recognize similarities and differences among multiple offspring of an animal parent

**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.A****The Earth's crust is composed of various materials, including soil, minerals, and rocks, with characteristic properties**

## 5.1.A.a

Observe and describe the physical properties (e.g., odor, color, appearance, relative grain size, texture, absorption of water) and different components (i.e., sand, clay, humus) of soils

## 5.1.A.b

Observe and describe the physical properties of rocks (e.g., size, shape, color, presence of fossils)

**5.2****Earth's systems (geosphere, atmosphere, and hydrosphere) interact with one another as they undergo change by common processes**

**5.2.A****The Earth's materials and surface features are changed through a variety of external processes**

5.2.A.a

Observe and recognize examples of slow changes in the Earth's surface and surface materials (e.g., rock, soil layers) due to processes such as decay (rotting), freezing, thawing, breaking, or wearing away by running water or wind

**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

Observe and describe ways humans use Earth's materials (e.g., soil, rocks) in daily life

**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

Pose questions about objects, materials, organisms and events in the environment

7.1.A.b

Plan and conduct a simple investigation (fair test) to answer a question

**7.1.B****Scientific inquiry relies upon gathering evidence from qualitative and quantitative observations**

7.1.B.a

Make qualitative observations using the five senses

7.1.B.b

Make observations using simple tools and equipment (e.g., magnifiers/hand lenses, magnets, equal arm balances, thermometers)

7.1.B.c

Measure length, mass, and temperature using standard and non-standard units

7.1.B.d

Compare amounts/measurements

**7.1.C****Evidence is used to formulate explanations**

7.1.C.a

Use observations as support for reasonable explanations

7.1.C.b

Use observations to describe relationships and patterns 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

Compare explanations with prior knowledge

**7.1.E****The nature of science relies upon communication of results and justification of explanations**

7.1.E.a

Communicate simple procedures and results of investigations and explanations through:

- oral presentations
- drawings and maps
- data tables
- graphs (bar, 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 musical instrument using materials (e.g., cardboard, wood, plastic, metal) and/or existing objects (e.g., toy wheels, gears, boxes, sticks) 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 tools have helped scientists make better observations, measurements, or equipment for investigations (e.g., magnifiers, balances, stethoscopes, thermometers)

**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 individuals 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)