

TITLE	MI STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>Alexander Graham Bell *</b> ISBN 0022858679 6 PK ISBN 0022865810	S.RS.02.11, S.RS.02.16	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.	experiment transmitter vibrate
<b>All About Magnets</b> ISBN 0022846514 6 PK ISBN 0022864385	S.IA.02.12, S.IA.02.14, S.RS.02.11, S.RS.02.16, P.PM.02.12	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.	magnetic magnetic field poles
<b>Animal Parents</b> ISBN 0022846328 6 PK ISBN 0022864210	S.IA.02.12, S.RS.02.11	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.	hatch instinct survive
<b>Animals in Danger</b> ISBN 0022859357 6 PK ISBN 0022865586	S.IP.02.16, S.IA.02.12, S.IA.02.14, S.RS.02.11	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.	DDT habitat hatch
<b>Apple Trees</b> ISBN 002284631X 6 PK ISBN 0022864202	S.IP.02.16, S.RS.02.11, L.OL.02.14, L.OL.02.22, L.HE.02.13	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.	chlorophyll photosynthesis pollinate
<b>Beyond the Sky *</b> ISBN 0022858644 6 PK ISBN 0022865721	S.IP.02.16, S.IA.02.12, S.RS.02.11, S.RS.02.16, P.PM.02.12	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.	solar system star telescope

\* - Also available in an English Language Learner version

TITLE	MI STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>Bicycle Metals</b> ISBN 0022858733 6 PK ISBN 0022865799	S.IP.02.16, S.RS.02.11, S.RS.02.16, P.PM.02.12	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	S.IP.02.16, S.RS.02.11, L.OL.02.14, L.OL.02.22, L.HE.02.13	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	S.IP.02.16, S.RS.02.11	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	S.RS.02.11, L.OL.02.14, L.HE.02.13	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	S.RS.02.11, E.SE.02.21	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	S.RS.02.11, S.RS.02.16	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	MI STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>Fast Changes on Earth</b>  ISBN 0022858695 6 PK ISBN 0022865667	S.RS.02.11, E.FE.02.13, E.FE.02.21	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	S.IA.02.12, S.RS.02.11	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	S.IP.02.16, S.IA.02.12, S.RS.02.11, L.OL.02.14, L.OL.02.22, L.HE.02.13	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	S.IP.02.16, S.IA.02.12, S.RS.02.11	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	S.IP.02.16, S.RS.02.11, L.OL.02.14	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	MI STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>Get Moving!</b> ISBN 002284645X 6 PK ISBN 0022864334	S.IA.02.12, S.RS.02.11	H	460	<i>Get Moving</i> 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.	force gravity tool
<b>Hot Air Balloons</b> ISBN 0022858725 6 PK ISBN 0022865764	S.IP.02.16, S.RS.02.11	L	430	<i>Hot Air Balloons</i> 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.	energy gas heat
<b>Journey into Space</b> ISBN 0022858717 6 PK ISBN 002286573X	S.RS.02.11, S.RS.02.16	K	480	<i>Journey into Space</i> 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.	astronaut probe space shuttle
<b>Let's Recycle! *</b> ISBN 0022846433 6 PK ISBN 0022864318	S.IA.02.12, S.IA.02.13, S.RS.02.11	K	650	<i>Let's Recycle</i> 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.	recycle reduce reuse
<b>Make a Pizza *</b> ISBN 0022858660 6 PK ISBN 0022865780	S.IP.02.16, S.RS.02.11	J	500	<i>Make a Pizza</i> 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.	boil liquid solid
<b>Matter and Change</b> ISBN 0022858571 6 PK ISBN 0022865748	S.RS.02.11, E.FE.02.13, E.FE.02.14	G	390	<i>Matter and Change</i> defines matter and describes everyday examples of solids, liquids, and gases. Changes in matter caused by heating and cooling are also described.	heat matter solid

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TITLE	MI STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>Minerals</b> ISBN 0022846379 6 PK ISBN 0022864261	S.IP.02.11, S.IA.02.12, S.IA.02.13, P.PM.02.12	M		<b>Minerals</b> 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	S.IP.02.11, S.IP.02.13, S.IA.02.13, S.RS.02.11, P.PM.02.41	F	210	<b>Mix It Up</b> 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	S.IA.02.12, S.RS.02.11, S.RS.02.16	J	350	<b>Push or Pull?</b> 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	S.IA.02.12, S.RS.02.11, E.FE.02.22	M	660	<b>Saving Animals</b> 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	S.IP.02.11, S.IA.02.12, S.IA.02.13, S.RS.02.11, L.OL.02.14	I	470	<b>Soil</b> 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	MI STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>The Big Splash! *</b> ISBN 0022858628 6 PK ISBN 0022865659	S.RS.02.11, E.FE.02.11, E.FE.02.22	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	S.RS.02.11, S.RS.02.16	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	S.IP.02.11, S.IA.02.13, S.IA.02.14, S.RS.02.11, S.RS.02.16	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	S.IA.02.12, S.RS.02.11	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	S.RS.02.11	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	S.IP.02.16, S.RS.02.11, L.OL.02.14, E.FE.02.11, E.FE.02.13, E.FE.02.14, E.FE.02.21	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	MI STANDARDS ADDRESSED	GR LEVEL	LEXILE LEVEL	BOOK SUMMARY	VOCABULARY
<b>Water Habitats</b> ISBN 0022858687 6 PK ISBN 0022865632	S.RS.02.11, E.FE.02.13, E.FE.02.22	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	S.IP.02.11, S.IA.02.12, S.IA.02.13, S.RS.02.11	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 cumulus stratus</b>

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# Michigan Science Grade Level Content Expectations

## SCIENCE PROCESSES

### Inquiry Process

<b>K-7 Standard S.IP</b>	<b>Develop an understanding that scientific inquiry and reasoning involves observing, questioning, investigating, recording, and developing solutions to problems</b>
<b>S.IP.E.1</b>	<b>Inquiry involves generating questions, conducting investigations, and developing solutions to problems through reasoning and observation.</b>
S.IP.02.11	Make purposeful observation of the natural world using the appropriate senses.
S.IP.02.12	Generate questions based on observations.

- S.IP.02.13 Plan and conduct simple investigations.
- S.IP.02.14 Manipulate simple tools (ruler, meter stick, measuring cups, hand lens, thermometer, balance) that aid observation and data collection.
- S.IP.02.15 Make accurate measurements with appropriate units (meter, centimeter) for the measurement tool.
- S.IP.02.16 Construct simple charts and graphs from data and observations.

### **Inquiry Analysis and Communication**

**K-7 Standard S.IA** | **Develop an understanding that scientific inquiry and investigations require analysis and communication of findings, using appropriate technology.**

**S.IA.E.1** | **Inquiry includes an analysis and presentation of findings that lead to future questions, research, and investigations.**

S.IA.02.12 Share ideas about science through purposeful conversation.

S.IA.02.13 Communicate and present findings of observations.

S.IA.02.14 Develop strategies and skills for information gathering and problem solving (books, internet, ask an expert, observation, investigation, technology tools).

### **Reflection and Social Implications**

**K-7 Standard S.RS** | **Develop an understanding that claims and evidence for their scientific merit should be analyzed. Understand how scientists decide what constitutes scientific knowledge. Develop an understanding of the importance of reflection on scientific knowledge and its application to new situations to better understand the role of science in society and technology.**

**S.RS.E.1** | **Reflecting on knowledge is the application of scientific knowledge to new and different situations. Reflecting on knowledge requires careful analysis of evidence that guides decision-making and the application of science throughout history and within society.**

S.RS.02.11 Demonstrate scientific concepts through various illustrations, performances, models, exhibits, and activities.

- S.RS.02.13 Recognize that when a science investigation is done the way it was done before, similar results are expected.
- S.RS.02.15 Use evidence when communicating scientific ideas.
- S.RS.02.16 Identify technology used in everyday life.

## PHYSICAL SCIENCE

### Properties of Matter

#### K-7 Standard P.PM

**Develop an understanding that all matter has observable attributes with physical and chemical properties that are described, measured, and compared. Understand that states of matter exist as solid, liquid, or gas; and have physical and chemical properties. Understand all matter is composed of combinations of elements, which are organized by common attributes and characteristics on the Periodic Table. Understand that substances can be classified as mixtures or compounds and according to their physical and chemical properties.**

#### P.PM.E.1

**Physical Properties- All objects and substances have physical properties that can be measured.**

- P.PM.02.12 Describe objects and substances according to their properties (color, size, shape, texture, hardness, liquid or solid, sinking or floating).
- P.PM.02.13 Measure the length of objects using rulers (centimeters) and meter sticks (meters).
- P.PM.02.14 Measure the volume of liquids using common measuring tools (measuring cups, measuring spoons).
- P.PM.02.15 Compare the weight of objects using balances.

#### P.PM.E.4

**Material Composition- Some objects are composed of a single substance, while other objects are composed of more than one substance.**

- P.PM.02.41 Classify objects as single substances (ice, silver, sugar, salt) or mixtures (salt and pepper, mixed dry beans).

**LIFE SCIENCE****Organization of Living Things****K-7 Standard  
L.OL**

**Develop an understanding that plants and animals (including humans) have basic requirements for maintaining life which include the need for air, water and a source of energy. Understand that all life forms can be classified as producers, consumers, or decomposers as they are all part of a global food chain where food/energy is supplied by plants which need light to produce food/energy. Develop an understanding that plants and animals can be classified by observable traits and physical characteristics. Understand that all living organisms are composed of cells and they exhibit cell growth and division. Understand that all plants and animals have a definite life cycle, body parts, and systems to perform specific life functions.**

**L.OL.E.1**

**Life Requirements- Organisms have basic needs. Animals and plants need air, water, and food. Plants also require light. Plants and animals use food as a source of energy and as a source of building material for growth and repair.**

L.OL.02.14

Identify the needs of plants.

**L.OL.E.2**

**Life Cycles- Plants and animals have life cycles. Both plants and animals begin life and develop into adults, reproduce, and eventually die. The details of this life cycle are different for different organisms.**

L.OL.02.22

Describe the life cycles of familiar flowering plants, including the following stages: seed, plant, flower, and fruit.

**Heredity****K-7 Standard  
L.HE**

**Develop an understanding that all life forms must reproduce to survive. Understand that characteristics of mature plants and animals may be inherited or acquired and that only inherited traits are passed on to their young. Understand that inherited traits can be influenced by changes in the environment and by genetics.**

**L.HE.E.1**

**Observable Characteristics- Plants and animals share many, but not all, characteristics of their parents.**

L.HE.02.13 Identify characteristics of plants (for example: leaf shape, flower type, color, size) that are passed on from parents to young.

## **EARTH SCIENCE**

### **Solid Earth**

**K-7 Standard  
E.SE**

**Develop an understanding of the properties of earth materials and how those properties make materials useful. Understand gradual and rapid changes in earth materials and features of the surface of Earth. Understand magnetic properties of Earth.**

**E.SE.E.2**

**Surface Changes- The surface of Earth changes. Some changes are due to slow processes, such as erosion and weathering, and some changes are due to rapid processes, such as landslides, volcanic eruptions, and earthquakes.**

E.SE.02.21

Describe the major landforms of the surface of the Earth (mountains, plains, plateaus, valleys, hills).

### **Fluid Earth**

**K-7 Standard  
E.FE**

**Develop an understanding that Earth is a planet nearly covered with water and that water on Earth can be found in three states, solid, liquid, and gas. Understand how water on Earth moves in predictable patterns. Understand Earth's atmosphere as a mixture of gases and water vapor.**

**E.FE.E.1**

**Water- Water is a natural resource and is found under the ground, on the surface of the earth, and in the sky. It exists in three states (liquid, solid, gas) and can go back and forth from one form to another.**

E.FE.02.11

Identify water sources (wells, springs, lakes, rivers, oceans).

E.FE.02.12

Identify household uses of water (drinking, cleaning, food preparation).

E.FE.02.13

Describe the properties (visible, flowing, melting, dew) of water as a liquid (lakes, rivers, streams, oceans).

E.FE.02.14

Describe the properties (hard, visible, freezing, ice) of water as a solid (ice, snow, iceberg, sleet, hail).

**E.FE.E.2**

**Water Movement- Water moves in predictable patterns.**

E.FE.02.21

Describe how rain collects on the surface of the Earth and flows downhill into bodies of water (streams, rivers, lakes, oceans) or into the ground.

E.FE.02.22

Describe the major bodies of water on the Earth's surface (lakes, ponds, oceans, rivers, streams).