

Office of Larry E. Reider
Kern County Superintendent of Schools
Advocates for Children

Sixth Grade—Houghton Mifflin

The GEMS guides listed below are suggested supplements to the Houghton Mifflin curriculum. Teachers are encouraged to select the lessons from each guide they find most beneficial to their students' needs. Most guides have kits with hands-on materials available for check-out, at no charge, from KCSOS. Contact Kathy Hill at kahill@kern.org or 661.636.4640.

GEMS uses the strategies of hands-on examination and discovery throughout its program. Therefore, we have not listed the California State Standards correlation of Investigation and Exploration, Standard 7, as one or more strands will be found as a basic component of every GEMS guide.

Unit--Chapter/ Lesson	TE pages	6 th grade standard	GEMS Guide Bold type represents a GEMS unit which addresses all standards in that standard set for the respective strand.
6th Grade—EARTH SCIENCE			
Unit A: Planet Earth—Chapter 1: Earth's Structure			
L#1: What Makes Earth a Special Planet?	6-15	6 ES 4.a	<i>Ocean Currents</i> <i>The Real Reasons for Seasons</i>
L#2: What Is Earth's Structure?	16-23	6 ES 1.b	<i>Convection a Current Event</i> <i>Plate Tectonics</i> <i>Stories in Stone</i>
L#3: What Makes Up Earth's Surface?	26-35	6 IE 7.f	See guides below under Investigation and Experimentation
Unit A: Planet Earth--Chapter 2: Shaping Earth's Surface			
L#1: How Is Earth's Surface Worn Down?	42-53	6 ES 2.a, 2.d	<i>Environmental Detectives (2.a)</i> <i>River Cutters</i> <i>Stories in Stone</i>
L#2: How Do Rivers Shape the Landscape?	56-63	6 ES 2.a, 2.b, 2.d	<i>Environmental Detectives (2.a, 2.b)</i> <i>River Cutters</i> <i>Stories in Stone</i>
L#3: How Do Beaches Change?	66-73	6 ES 2.c	<i>Microscopic Explorations</i> <i>River Cutters</i>
Unit B: The Dynamic Earth—Chapter 3: Evidence of Plate Tectonics			
L#1: What Do Rocks and Fossils Reveal?	86-93	6 ES 1.a	<i>Plate Tectonics</i>
L#2: What Are Tectonic Plates?	98-105	6 ES 1.a, 1.c	<i>Plate Tectonics</i>

L#3: How Do Tectonic Plates Move?	106-113	6 ES 1.c, 4.c	<i>Plate Tectonics (1.c)</i>
L#4: What Happens at Plate Boundaries?	114-121	6 ES 1.e, 1.f	<i>Plate Tectonics Stories in Stone (1.f)</i>
Unit B: The Dynamic Earth—Chapter 4: Mountains, Earthquakes, and Volcanoes			
L#1: How Do Mountains Form?	132-139	6 ES 1.e	<i>Plate Tectonics</i>
L#2: What Happens During an Earthquake?	140-147	6 ES 3.a	<i>Invisible Universe Living With a Star</i>
L#3: How Are Earthquakes Located and Measured?	148-155	6 ES 1.d	<i>Plate Tectonics Stories in Stone</i>
L#4: How Do Volcanoes Form?	158-167		
6th Grade—PHYSICAL SCIENCE			
Unit C: Earth’s Energy Supply--Chapter 5: Heating Earth			
L#1: How Does Energy Travel from the Sun to Earth?	182-189	6 PS 3.a, 4.b	<i>Invisible Universe Living With a Star Messages From Space (4.b) The Real Reasons for Seasons (4.b)</i>
L#2: How Is Earth Heated?	192-201	6 PS 3.a, 3.d, 4.a	<i>Hot Water and Warm Homes From Sunlight (3.d) Invisible Universe (3.a) Living With a Star (3.a, 3.d) Messages From Space (3.d) Ocean Currents (4.a) The Real Reasons for Seasons(4.a)</i>
L#3: What Are Convection Currents?	202-209	6 PS 3.c, 4.a	<i>Convection a Current Event (3.c) Ocean Currents (4.a) The Real Reasons for Seasons (4.a)</i>
Unit C: Earth’s Energy Supply--Chapter 6: Energy and Weather			
L#1: What Causes Weather?	220-229	6 PS 4.a, 4.d, 4.e	<i>Convection a Current Event (4.a, 4.d) Ocean Currents (4.a, 4.d) The Real Reasons for Seasons (4.a) No GEMS guides were found to align with standard 4.e</i>
L#2: What Are Global Weather Patterns?	232-239	6 PS 4.d, 4.e	<i>Convection a Current Event (4.d) Ocean Currents (4.d)</i>
L#3: What Are California’s Climates?	240-247	6 PS 4.e	No GEMS guides were found to align with standard.

6th Grade—LIFE SCIENCE

Unit D: Ecology--Chapter 7: The Biosphere

L#1: What Are Ecosystems?	262-267	6 LS 5.b, 5.e	<i>Aquatic Habitats</i> (5.b) Environmental Detectives Only One Ocean <i>Schoolyard Ecology</i> (5.e) <i>Terrarium Habitats</i> (5.e)
L#2: What Are Earth's Biomes?	268-275	6 LS 5.e	Environmental Detectives Only One Ocean <i>Schoolyard Ecology</i> <i>Terrarium Habitats</i>
L#3: What Cycles Through the Biosphere?	278-287	6 LS 5.a, 5.b	<i>Aquatic Habitats</i> Environmental Detectives <i>Life Through Time</i> (5.a) Only One Ocean <i>Terrarium Habitats</i> (5.a)

Unit D: Ecology--Chapter 8: Roles of Living Things

L#1: What Is a Food Web?	298-305	6 LS 5.a, 5.b	<i>Aquatic Habitats</i> Environmental Detectives <i>Life Through Time</i> (5.a) Only One Ocean <i>Terrarium Habitats</i> (5.a)
L#2: What Roles Do Organisms Play? L#3: What Is Symbiosis?	308-315 316-323	6 LS 5.c, 5.d	<i>Acid Rain</i> Environmental Detectives <i>Life Through Time</i> (5.c) Only One Ocean <i>Terrarium Habitats</i> (5.c)

Unit D: Ecology--Chapter 9: Populations

L#1: What Limits Population Growth?	334-341	6 LS 5.e	Environmental Detectives Only One Ocean <i>Schoolyard Ecology</i> <i>Terrarium Habitats</i>
L#2: What Is Ecological Succession?	344-349	6 ES 2.d 6 LS 5.e	Environmental Detectives (5.e) Only One Ocean (5.e) River Cutters (2.d) <i>Schoolyard Ecology</i> (5.e) <i>Stories in Stone</i> (2.d) <i>Terrarium Habitats</i> (5.e)
L#3: How Do Humans Change Ecosystems?	350-359	6 LS 5.e	Environmental Detectives Only One Ocean (5.e) <i>Schoolyard Ecology</i> <i>Terrarium Habitats</i>

Unit E: Earth's Natural Resources—Chapter 10: Energy Resources

L#1: How Do People Use Energy?	374-381	6 ES 3.a, 3.b	<i>Hot Water and Warm Homes From Sunlight</i> (3.b) <i>Invisible Universe</i> (3.a) <i>Living With a Star</i> (3.a)
L#2: Why Are Fossil Fuels Limited?	382-389	6 ES 6.a, 6.b	<i>Acid Rain</i> (6.a) <i>Environmental Detectives</i> <i>Hot Water and Warm Homes From Sunlight</i> <i>Moons of Jupiter</i> (6.a)
L#3: What Are Alternatives to Fossil Fuels?	394-405	6 ES 3.a	<i>Invisible Universe</i> <i>Living With a Star</i>
Unit E: Earth's Natural Resources—Chapter 11: Material Resources			
L#1: What Material Resources Are Nonrenewable?	416-425	6 ES 6.b, 6.c	<i>Environmental Detectives</i> <i>Hot Water and Warm Homes From Sunlight</i> (6.b)
L#2: What Material Resources Are Renewable?	428-439		<i>Investigating Artifacts</i> (6.c)

6th Grade--INVESTIGATION AND EXPERIMENTATION

While the guides listed below do not address specific 6th grade standards in Life, Earth, or Physical Science, they do meet standards within the Investigation and Experimentation standard set.

Bubble Festival
Bubble-Ology
Chemical Reactions
Color Analyzers
Crime Lab Chemistry
Discovery Density
Electric Circuits
Experimenting With Model Rockets
Fingerprinting
Height-O-Meters (higher level math involved)
Learning About Learning
Microscopic Explorations
Mystery Festival
Of Cabbages and Chemistry
Oobleck
Paper Towel Testing
Schoolyard Ecology
Vitamin C Testing