

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

## Fifth Grade—Houghton Mifflin

The GEMS guides listed below are suggested supplements to the Houghton Mifflin. 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](mailto: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 6, as one or more strands will be found as a basic component of every GEMS guide.

Unit--Chapter/ Lesson	TE pages	5 <sup>th</sup> grade standard	GEMS Guide  Bold type represents a GEMS unit which addresses all standards in that standard set for the respective strand.
<b>5<sup>th</sup> Grade--LIFE SCIENCE</b>			
<b>Unit A: Systems in Living Things--Chapter 1: Cells</b>			
L#1: What Are the Parts of a Cell?	6-13	5 LS 2.a	<i>Aquatic Habitat</i> <i>Life Through Time</i> <i>Microscopic Explorations</i> <i>Only One Ocean</i> <i>Terrarium Habitats</i>
L#2: How Do Cells Make and Use Energy?	16-23	5 LS 2.g	No GEMS guides were found to align with standard
L#3: How Are Cells Organized?	24-29	5 LS 2.a	<i>Aquatic Habitats</i> <i>Life Through Time</i> <i>Microscopic Explorations</i> <i>Only One Ocean</i> <i>Terrarium Habitats</i>
<b>Unit A: Systems in Living Things--Chapter 2: Plant Systems</b>			
L#1: How Do Plants Produce Food?	40-47	5 LS 2.f, 2.g	<i>Life Through Time (2.f)</i> No GEMS guides were found to align with standard 2.g
L#2: How Do Plants Move Materials?	52-59	5 LS 2.a, 2.e	<i>Aquatic Habitats (2.a)</i> <i>Life Through Time (2.a)</i> <i>Only One Ocean (2.a)</i>
<b>Unit A: Systems in Living Things--Chapter 3: Human Body Systems</b>			
L#1: What Are the Respiratory and Circulatory	70-77	5 LS 2.a, 2.b	<i>Aquatic Habitats</i> <i>Life Through Time (2.a)</i> <i>Microscopic Explorations (2.a)</i>

Systems?			<i>Only One Ocean</i> <i>Terrarium Habitats (2.a)</i>
L#2: What Is the Digestive System?	80-87	5 LS 2.c	<i>Life Through Time</i> <i>Only One Ocean</i>
L#3: What is the Excretory System?	90-97	5 LS 2.d	No GEMS guides were found to align with standard
<b>5<sup>th</sup> Grade--EARTH SCIENCE</b>			
<b>Unit B: Water on Earth--Chapter 4: Water Resources</b>			
L#1: Where Is Earth's Water?	110-117	5 ES 3.a, 3.d, 3.e	<i>Ocean Currents (3.a, 3.d)</i> <i>Only One Ocean (3.a, 3.d)</i> No GEMS guides were found to align with standard 3.e
L#2: How Do Communities Get Water?	120-127	5 ES 3.d, 3.e	<i>Ocean Currents (3.d)</i> <i>Only One Ocean (3.d)</i> No GEMS guides were found to align with standard 3.e
L#3: How Can Fresh Water Be Used Wisely?	130-137		
<b>Unit B: Water on Earth--Chapter 5: The Water Cycle</b>			
L#1: How Does Water Change State?	146-151	5 ES 3.b, 3.c	<i>Terrarium Habitats (3.b)</i> No GEMS guides were found to align with standard 3.c. However, <i>Convection a Current Event</i> is a 6-8 guide, and some activities may be adapted to 5 <sup>th</sup> grade enrichment level to meet this standard.
L#2: How Does Precipitation Form?	152-159	5 ES 3.b, 3.c, 4.a	<i>Ocean Currents (4.a)</i> <i>Terrarium Habitats (3.b)</i> No GEMS guides were found to align with standard 3.c. However, <i>Convection a Current Event</i> is a 6-8 guide, and some activities may be adapted to 5 <sup>th</sup> grade enrichment level to meet this standard.
L#3: How Does the Ocean Affect Weather?	162-167	5 ES 4a, 4.b	<i>Ocean Currents</i> <i>Convection a Current Event</i> is a 6-8 guide, and some activities may be adapted to 5 <sup>th</sup> grade enrichment level to meet these standards.
<b>Unit C: Weather and the Solar System--Chapter 6: Weather</b>			
L#1: How Does Air Pressure Affect Weather?	182-191	5 ES 4.a, 4.e	<i>Ocean Currents (4.a)</i> <i>Convection a Current Event</i> is a 6-8 guide, and some activities may be adapted to 5 <sup>th</sup> grade enrichment level to meet standard 4.a.
L#2: Why Does Air Move?	192-199		No GEMS guides were found to align with standard 4.e
L#3: How Are Weather Forecasts Made?	204-215	5 ES 4.a, 4.d	<i>Ocean Currents (4.a)</i> No GEMS guides were found to align with standard 4.d <i>Convection a Current Event</i> is a 6-8 guide, and some activities may be adapted to 5 <sup>th</sup> grade enrichment level to meet standard 4.a.
L#4: What Causes Storms?	216-225	5 ES 4.c	No GEMS guides were found to align with standard

<b>Unit C: Weather and the Solar System—Chapter 7: The Solar System</b>			
L#1: What Is Earth’s Sun Like?	236-243	5 ES 5.a	<i>Earth, Moon, and Stars</i> <i>Messages From Space</i> <i>Moons of Jupiter</i> <i>The Real Reasons for the Season</i> is a 6-8 guide, and some activities may be adapted to 5 <sup>th</sup> grade enrichment level to meet standard 5a.
L#2: What Orbits the Sun?	244-251	5 ES 5.b, 5.c	<i>Earth, Moon, and Stars</i> <i>Messages From Space</i> (5.b) <i>Moons of Jupiter</i> <i>The Real Reasons for the Season</i> is a 6-8 guide, and some activities may be adapted to 5 <sup>th</sup> grade enrichment level to meet these standards.
L#3: What Are the Planets Like?	254-263	5 ES 5.b	<i>Earth, Moon, and Stars</i> <i>Messages From Space</i> <i>Moons of Jupiter</i> <i>The Real Reasons for the Season</i> is a 6-8 guide, and some activities may be adapted to 5 <sup>th</sup> grade enrichment level to meet this standard.
L#4: What Keeps Planets in Their Orbit?	264-271	5 ES 5.c	<i>Earth, Moon, and Stars</i> <i>Moons of Jupiter</i> <i>The Real Reasons for the Season</i> is a 6-8 guide, and some activities may be adapted to 5 <sup>th</sup> grade enrichment level to meet this standard.
<b>5<sup>th</sup> Grade--PHYSICAL SCIENCE</b>			
<b>Unit D: Elements and Their Combinations—Chapter 8: Atoms and Elements</b>			
L#1: What Are Atoms and Elements?	286-293	5 PS 1.b, 1.d, 1.e	<i>Crime Lab Chemistry</i> (1.b, 1.e) <i>Ocean Currents</i> (1.b) No GEMS guides were found to align with standard 1.d
L#2: What Is the Periodic Table?	296-305	5 PS 1.c, 1.d	No GEMS guides were found to align with standards
L#3: Where Are Elements Found?	308-313	5 PS 1.b, 1.h	<i>Crime Lab Chemistry</i> (1.b) <i>Ocean Currents</i>
<b>Unit D: Elements and Their Combinations--Chapter 9: Chemical Compounds</b>			
L#1: What Are Compounds?	322-331	5 PS 1.a, 1.f	<i>Crime Lab Chemistry</i> <i>Stories In Stone</i> <i>Secret Formulas</i> (1.a) (1-3 guide is easily adapted to 5 <sup>th</sup> grade level) <i>Chemical Reactions</i> is a 6-10 guide, and some activities may be adapted to 5 <sup>th</sup> grade enrichment level to meet standard 1.a.
L#2: What Are Some Properties of Compounds?	334-341	5 PS 1.f 1.g	<i>Crime Lab Chemistry</i> <i>Stories In Stone</i> (1.f)

L#3: What Are Acids, Bases, and Salts?	344-349	5 PS 1.a, 1.f, 1.i	<i>Crime Lab Chemistry</i> (1.a, 1.f) <i>Microscopic Explorations</i> (1.i) <i>Ocean Currents</i> (1.i) <i>Of Cabbages and Chemistry</i> (1.a.) <i>Stories In Stone</i> (1.a, 1.f) <i>Secret Formulas</i> (1.a) (1-3 guide is easily adapted to 5 <sup>th</sup> grade level) <i>Chemical Reactions</i> is a 6-10 guide, and some activities may be adapted to 5 <sup>th</sup> grade enrichment level to meet standard 1.a.

**Unit D: Elements and Their Combinations—Chapter 10: Characteristics of Matter**

L#1: What Are the Three States of Matter?	358-365	5 PS 1.g	<i>Crime Lab Chemistry</i>
L#2: What Are Mixtures and Solutions?	368-375	5 PS 1.f	<i>Crime Lab Chemistry</i> <i>Stories In Stone</i>
L#3: How Does Matter Change?	376-383	5 PS 1.g	<i>Crime Lab Chemistry</i>
L#4: What Happens in a Chemical Reaction?	386-393	5 PS 1.a	<i>Crime Lab Chemistry</i> <i>Stories In Stone</i> <i>Secret Formulas</i> (1.a) (1-3 guide is easily adapted to 5 <sup>th</sup> grade level) <i>Chemical Reactions</i> is a 6-10 guide, and some activities may be adapted to 5 <sup>th</sup> grade enrichment level to meet standard 1.a.

**5<sup>th</sup> Grade--INVESTIGATION AND EXPERIMENTATION**

While the guides listed below do not address specific 5<sup>th</sup> grade standards in Life, Earth, or Physical Science, they do meet standards within the Investigation and Experimentation standard set.

*Bubble-Ology*  
*Color Analyzers*  
*Electric Circuits*  
*Fingerprinting*  
*Hot Water and Warm Homes From Sunlight*  
*Microscopic Explorations*  
*Mystery Festival*  
*Of Cabbages and Chemistry*  
*Oobleck*  
*Paper Towel Testing*  
*Schoolyard Ecology*  
*Vitamin C Testing*