

## SL Science and Social Studies (Levels 5-11)

This collection consists of 16 science and social studies units. Each unit is divided into two or more titles, which are further subdivided into chapters, making a total of 150 reading selections.

By design, students will encounter core vocabulary and concepts repeatedly over the titles and chapters of each unit. To maximize reading and vocabulary growth, it is therefore important that students read the full contents of each unit in sequence. Toward meeting reading and comprehension goals, each selection should be read at least twice. Students should be encouraged to revisit selections for mastery in subsequent sessions if it is not attained during these first two reads.

The **Introductory** unit has been specially designed to familiarize students with usage, question types, and modes of thought required by the software. We recommend that you work through the first title in this unit together with your students, asking them to pause for discussion at each Pop-up Question and at the Progress Report. They should reread the first selection at least twice, comparing differences in the Progress Report, before turning to the second selection. Discussion at the end of the third title of this unit will let you clarify remaining issues so that your students are ready to proceed on their own.

Beyond the **Introductory** selections, the units may be assigned in the order of your choosing.

## Introduction

### ***A Penny For Your Thoughts*** **(Levels 5-7)**

Interesting facts about the incredible Lincoln penny.

Adapted from "The Incredible Lincoln Penny,"  
Appleseeds Magazine, April 2004, original text by  
Carolyn Johnson. Images courtesy of Carus Publishing.

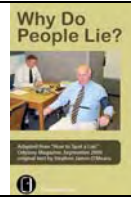


### **The Incredible Lincoln Penny**

### ***How to Spot a Liar*** **(Levels 5-7)**

The why, and how, of liars.

Adapted from "How to Spot a Liar," Odyssey Magazine,  
September 2000, original text by Stephen James  
O'Meara. "Why Do People Lie?" image courtesy of the  
Virginia State Police. "Telltale Signs" image p. 4  
courtesy of Carus Publishing.



### **Why Do People Lie?**



### **Telltale Signs**

# Animals

## ***Animal Migrations*** **(Levels 5-7)**

From whales to butterflies, animals around the globe are on the move. Interesting natural science selections about the migrations of a wide variety of animals.

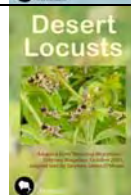
Adapted from "Amazing Migrations," Odyssey Magazine, October 2003. Original text by Stephen James O'Meara. "Desert Locusts" image courtesy of USAID. "Red Crabs" image courtesy of Michael Seebeck. "Green Turtles" image courtesy of Florida Keys National Marine Center. "Loggerhead Turtles" image courtesy of US Fish and Wildlife Service/Ryan Hegerty. "Zebra, Gazelle, and Wildebeest" image courtesy of www.AnimalArtandPhotography.com.



### **Amazing Migrations**



### **Great White Sharks**



### **Desert Locusts**



### **Red Crabs**










### **Green Turtles**






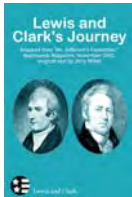




### **Loggerhead Turtles**







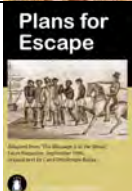


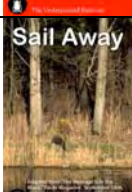

### **Zebra, Gazelle, and Wildebeest**

<p><b>Communicating with Apes</b> (Levels 5-7)</p> <p>Humans talking with apes? Such conversations were once found only in fables or science fiction, but these selections describe the real science in human-ape communication.</p> <p>Adapted from " 'Going Ape' Over Language," Odyssey Magazine, October 2001, original text by Natalie M. Rosinsky. Image courtesy of Great Ape Trust of Iowa. "A Chimpanzee Named Washoe" images pp. 2 and 6 courtesy of Chimpanzee and Human Communication Institute "A Gorilla Named Koko" images courtesy of Ron Cohn/Gorilla Foundation/koko.org. "A Bonobo Named Kanzi" images courtesy of Great Ape Trust of Iowa.</p>	<p><b>"Going Ape" Over Language</b></p> 	<p><b>"Going Ape" Over Language</b></p>
	<p><b>A Chimpanzee Named Washoe</b></p> 	<p><b>A Chimpanzee Named Washoe</b></p>
	<p><b>A Gorilla Named Koko</b></p> 	<p><b>A Gorilla Named Koko</b></p>
	<p><b>A Bonobo Named Kanzi</b></p> 	<p><b>A Bonobo Named Kanzi</b></p>
<p><b>Zoos, Pets, and Obesity</b> (Levels 5-7)</p> <p>Obesity isn't just a human problem. These selections outline the growing trend of obesity in zoo animals and pets.</p> <p>Adapted from "Animal Fat," Odyssey Magazine, May 2004. Original text by Stephen James O'Meara. "Animal Fat" image p. 4 © Corbis. "Limited Space" image courtesy of Jon Parise. "Is Your Pet Overweight?" image courtesy of qr5, www.qr5.org.</p>	<p><b>Animal Fat</b></p> 	<p><b>Animal Fat</b></p>
	<p><b>Limited Space</b></p> 	<p><b>Limited Space</b></p>
	<p><b>Obesity: A Growing Trend</b></p> 	<p><b>Obesity: A Growing Trend</b></p>

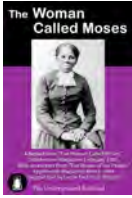
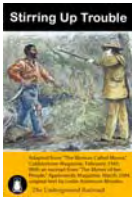
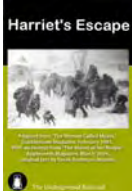

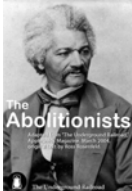
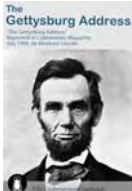
<p><b>Zoos, Pets, and Obesity (Continued)</b></p>	 <p><b>Obese Pets</b> A Hidden Health Threat to Our Domestic Animals Original text by Theobald, 2008, © 2008 Annals</p>	<p><b>Obese Pets</b></p>
	 <p><b>Is Your Pet Overweight?</b> Obesity in Dogs and Cats Original text by Theobald, 2008, © 2008 Annals</p>	<p><b>Is Your Pet Overweight?</b></p>









<b>Lewis and Clark</b>		
<p><b>Exploring the Louisiana Purchase (Levels 5-7)</b></p> <p>In November of 1805, a small group of explorers fulfilled Thomas Jefferson's dream, traveling overland from the Mississippi River to the Pacific Coast.</p> <p>Adapted from "Mr. Jefferson's Expedition," Appleseeds Magazine, November 2002, original text by Jerry Miller. "Mr. Jefferson's Expedition" portrait of Thomas Jefferson by Rembrandt Peale, 1800. "Lewis and Clark's Journey" image p. 2 courtesy of Carus Publishing Company; image p. 4 courtesy of Library of Congress.</p>		<p><b>Mr. Jefferson's Expedition</b></p>
<p><b>Sacagawea (Levels 5-7)</b></p> <p>Sacagawea was a girl of remarkable courage who grew into a strong, respected woman on the journey to the northwestern corner of the Louisiana Territory. These selections provide a brief biography of this American icon.</p> <p>Adapted from "Sacagawea: Her Spirit Soared," Appleseeds Magazine, November 2002, original text by Lisa Belcher-Hamilton. "Sacagawea's Youth" image p. 2 © The Idaho Statesman. All rights reserved. Printed with permission; image p. 4 courtesy of National Park Service.</p> <p>"Exploring the West" images courtesy of Carus Publishing Company. "A Homecoming" image courtesy of Library of Congress. "Sacagawea's Legacy" image p. 2 © The Idaho Statesman. All rights reserved. Printed with permission; image p. 4 courtesy of Wayne Mumford.</p>		<p><b>Lewis and Clark's Journey</b></p>
		<p><b>Sacagawea's Youth</b></p>
		<p><b>Exploring the West</b></p>
		<p><b>A Homecoming</b></p>
		<p><b>Sacagawea's Legacy</b></p>



<p><b>Animals of the West (Levels 5-7)</b></p> <p>When Lewis and Clark journeyed west to the Pacific Ocean, they did not know what kinds of animals they would encounter. They were met by Prairie Dogs, Grizzly Bears, and other animals described here.</p> <p>Adapted from "Prairie Dogs and More," Appleseeds Magazine, November 2002, original text by Elise Forier. "Lewis the Naturalist" image courtesy of American Philosophical Society. "Prairie Dogs and More" image p. 2 courtesy of U.S. Fish and Wildlife/Gary M. Stolz.</p>		<p><b>Lewis the Naturalist</b></p>
		<p><b>Prairie Dogs and More</b></p>
		<p><b>A Grizzly Encounter</b></p>



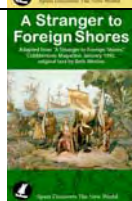




<b>The Underground Railroad</b>		
<p><b><i>The Message Is in the Music</i></b> <b>(Levels 5-7)</b></p> <p>Selections about brave American slaves who risked escape, and hid messages about their plans and plight in their songs.</p> <p>Adapted from "The Message in the Music," Faces Magazine, September 1996. Original text by Carol Ottolenghi-Barga. "Let My People Go" image p. 2 courtesy of Library of Congress; image p. 4 courtesy of Georgia Archives, Vanishing Georgia Collection, ben139. "Plans for Escape" image courtesy of Library of Congress. "Get Away from the Dogs!" image p. 2 courtesy of Library of Congress; image p. 4 courtesy of Charter of Township of Waterford, Michigan. "Sail Away" image p. 2 courtesy of Carus Publishing Company. "Coming Home" images pp. 1-2 courtesy of Carus Publishing.</p>		<b>Let My People Go</b>
		<b>Plans For Escape</b>
		<b>Flying Over the Cuckoo's Nest</b>
		<b>Get Away From the Dogs!</b>
		<b>Sail Away</b>
		<b>Coming Home</b>











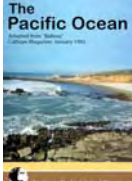
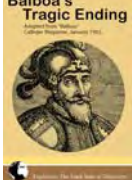
<p><b>Harriet Tubman</b> <b>(Levels 5-7)</b></p> <p>Who was "The Woman Called Moses?" A brief biography of Harriet Tubman is told here in three selections.</p> <p>Adapted from "The Woman Called Moses," Cobblestone Magazine, February 1981. With an excerpt from "The Moses of her People," Applesseeds Magazine, March 2004, original text by Leslie Anderson Morales. "The Woman Called Moses" image p. 2 courtesy of Library of Congress; image p. 4 courtesy of National Park Service. "Stirring Up Trouble" image "The Capture of Nat Turner" by Benjamin Phipps, 1831.</p> <p>"Harriet's Escape" image p. 2 courtesy Library of Congress; image pp.3-4 courtesy of Carus Publishing Company.</p>		<p><b>The Woman Called Moses</b></p>
<p><b>About the Underground Railroad</b> <b>(Levels 5-7)</b></p> <p>Selections about the Abolitionists and the journey taken by slaves escaping to freedom in the years before the U.S. Civil War.</p> <p>Adapted from "The Underground Railroad," Applesseeds Magazine, March 2004, original text by Ross Rosenfeld. "A Path to Freedom" image p. 2 courtesy of Carus Publishing Company; image p. 4 from the Underground Railroad research of Henry Robert Burke. "The Abolitionists" images courtesy of Library of Congress.</p>		<p><b>Stirring Up Trouble</b></p>
<p><b>Lincoln's Gettysburg Address</b> <b>(Levels 5-7)</b></p> <p>Lincoln's famous speech, still powerful so many years after he delivered it.</p> <p>"The Gettysburg Address," reprinted in Cobblestone Magazine, July 1988, by Abraham Lincoln. Images courtesy of the Library of Congress.</p>		<p><b>Harriet's Escape</b></p>
<p><b>Lincoln's Gettysburg Address</b> <b>(Levels 5-7)</b></p> <p>Lincoln's famous speech, still powerful so many years after he delivered it.</p> <p>"The Gettysburg Address," reprinted in Cobblestone Magazine, July 1988, by Abraham Lincoln. Images courtesy of the Library of Congress.</p>		<p><b>A Path to Freedom</b></p>
<p><b>Lincoln's Gettysburg Address</b> <b>(Levels 5-7)</b></p> <p>Lincoln's famous speech, still powerful so many years after he delivered it.</p> <p>"The Gettysburg Address," reprinted in Cobblestone Magazine, July 1988, by Abraham Lincoln. Images courtesy of the Library of Congress.</p>		<p><b>The Abolitionists</b></p>
<p><b>Lincoln's Gettysburg Address</b> <b>(Levels 5-7)</b></p> <p>Lincoln's famous speech, still powerful so many years after he delivered it.</p> <p>"The Gettysburg Address," reprinted in Cobblestone Magazine, July 1988, by Abraham Lincoln. Images courtesy of the Library of Congress.</p>		<p><b>The Gettysburg Address</b></p>

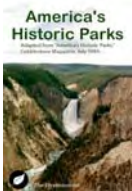



<b>Explorers and the Edge of the World</b>		
<p><b>Before There Were Maps</b> (Levels 5-7)</p> <p>What did early explorers use for navigation before there were maps? As explorers sailed farther distances, they brought back more and more information for early mapmakers.</p> <p>Adapted from "Here Be Dragons," Appleseeds Magazine, January 1999, original text by Natalie M. Rosinsky. "Finding the Way to Iceland" image p. 2 courtesy of www.helmink.com. "Maps and Mapmakers" image p. 2 by Fra Mauro, 1459. "A Distant Problem" image courtesy of Carus Publishing Company. "Sea Monsters and Dragons" image p. 2 courtesy of Carus Publishing Company.</p>		<b>Finding the Way to Iceland</b>
		<b>Maps and Mapmakers</b>
		<b>A Distant Problem</b>
		<b>Sea Monsters and Dragons</b>
		<b>Prince Henry the Navigator</b>
<p><b>Sailing Past the End of the World</b> (Levels 5-7)</p> <p>In the 15th century, Prince Henry of Portugal, ignoring the popular opinion that the world was flat, found a water route to the Far East around Africa's Cape of Good Hope.</p> <p>Adapted from "Sailing Past the End of the World," Calliope Magazine, September 1990, original text by Rosalie and Charles Baker. "A Water Route to the Far East" image p. 2 from Hartmann Schedels Worldchronic, 1493; image p. 4 courtesy of Carus Publishing Company.</p>		<b>A Water Route to the Far East</b>
		<b>Prince Henry's Noblemen</b>
		<b>New Discoveries</b>

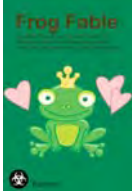





<p><b>By Water to India (Levels 5-7)</b></p> <p>In the late 15th century, Bartolomeu Dias and Vasco da Gama continue Prince Henry's navigation work, finding a water route to India.</p> <p>Adapted from "By Water to India," Calliope Magazine, September 1990, original text by Rosalie and Charles Baker.</p>		<p><b>Dias and the Cape of Good Hope</b></p>
		<p><b>Vasco da Gama's Journey</b></p>

<b>Spain Discovers The New World</b>		
<p><b><i>Spain Enters the Age of Discovery</i></b> <b>(Levels 5-7)</b></p> <p>Spain enters the Age of Discovery with the help of better maps, books, ships as well as the vision and courage of Christopher Columbus.</p>		<p><b>Better Maps, Books, and Ships</b></p>
<p>Adapted from "Spain Enters the Age of Discovery," Calliope Magazine, January 1992, original text by Brandon Marie Miller. "Better Maps, Books, and Ships" image p. 2 courtesy of Library of Congress. "Columbus Has a Plan" image p. 4 courtesy of MrNussbaum.com.</p>		<p><b>Columbus Has a Plan</b></p>
<p><b><i>Columbus's Glory</i></b> <b>(Levels 5-7)</b></p> <p>Spain's exploration of the New World, and Columbus's major role in that exploration are described, as is the controversy about whether Columbus is truly the "discoverer" of America.</p>		<p><b>A Stranger to Foreign Shores</b></p>
<p>Adapted from "A Stranger to Foreign Shores," Cobblestone Magazine, January 1992, original text by Beth Weston. "A Stranger to Foreign Shores" image p. 2 courtesy of Library of Congress. "Columbus: Discoverer of America?" image courtesy of Library of Congress.</p>		<p><b>Columbus Finds America</b></p>
		<p><b>Columbus: Discoverer of America?</b></p>
	<p><b><i>Columbus's Last Voyage to America</i></b> <b>(Levels 5-7)</b></p> <p>Shipwrecks and other problems plague Columbus's final voyage to America.</p>	
<p>Adapted from "Columbus's Last Voyage to America," Calliope Magazine, January 1992. "Shipwrecked in Jamaica" image p. 2 courtesy of Library of Congress. "Problems Upon Problems" image p.2 courtesy of Bruce M. Gottlieb.</p>		<p><b>Problems Upon Problems</b></p>


<b>Explorers: The Dark Side of Discovery</b>		
<p><b><i>Columbus and the Taino Tragedy</i></b> <b>(Levels 5-7)</b></p> <p>How Columbus's actions in the West Indies spelled tragedy for the Taino people.</p> <p>Adapted from "The Taino Tragedy," Cobblestone Magazine, January 1992, original text by Craig Gingold. Images courtesy of Library of Congress.</p>		<b>Columbus Lands in the New World</b>
		<b>Searching for Gold</b>
		<b>Slavery and Revolt</b>
		<b>Tragedy for the Tainos</b>
<p><b><i>European Diseases in the New World</i></b> <b>(Levels 5-7)</b></p> <p>European explorers spread diseases as well as new ideas in their travels to the New World.</p> <p>Adapted from "Deadly Diseases," Cobblestone Magazine, January 1992, original text by Nancy Day. "Deadly Diseases" image © Dr. Linda Stannard, UCT/Photo Researchers, Inc. "Smallpox in the New World" image courtesy of Library of Congress. "Other Diseases" image courtesy of Carus Publishing Company.</p>		<b>Deadly Diseases</b>
		<b>Smallpox in the New World</b>
		<b>Other Diseases</b>



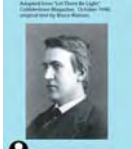
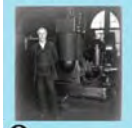


<p><b>Balboa, Discoverer of the Pacific (Levels 5-7)</b></p> <p>In 1500, Balboa joined an expedition commissioned to explore the northern shore of South America. Balboa's story encompasses all the triumph, tragedy and greed of the Spanish New World.</p> <p>Adapted from "Balboa," Calliope Magazine, January 1992. "Escaping to Adventure" image p. 2 courtesy of Library of Congress; image p. 4 courtesy of Map Collection, Yale University Library. "Balboa's Success" image p. 2 courtesy of Library of Congress. "The Pacific Ocean" image p. 2 courtesy of Carus Publishing Company; image p. 4 courtesy of Romi Chiorean.</p>		<p><b>Escaping to Adventure</b></p>
		<p><b>Balboa's Successes</b></p>
		<p><b>The Pacific Ocean</b></p>
		<p><b>Balboa's Tragic Ending</b></p>


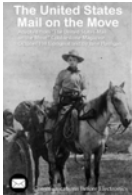



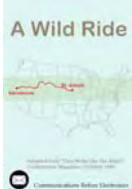
<b>The Environment</b>		
<p><b><i>Parks, Conservation, and Preservation (Levels 7-9)</i></b></p> <p>These selections trace the history of National Parks in the United States, and describe the organization that preserves and maintains these national treasures.</p> <p>Adapted from "America's Historic Parks," Cobblestone Magazine, July 1991. "The National Park Service" image p. 2 courtesy of National Park Service; image p. 4 courtesy of Jeremy Henderson.</p>		<p><b>America's Historic Parks</b></p>
<p><b><i>Roosevelt: President and Naturalist (Levels 7-9)</i></b></p> <p>President Theodore Roosevelt might have become a zoologist had his love of politics not won out over science. This naturalist president used his position and influence to make Americans aware of environmental issues.</p> <p>Adapted from "The Original Environmental President," Cobblestone Magazine, March 1993, original text by Diana Childress. "The Original Environmental President" image p. 2 courtesy of University of Texas at Austin; image p. 4 courtesy of U.S. Fish and Wildlife Service/Dave Menke. "Going West" courtesy of Mark W. Metivier.</p>		<p><b>The National Park Service</b></p>
		<p><b>The Original Environmental President</b></p>
		<p><b>Going West</b></p>
	<p><b>Roosevelt's Accomplishments</b></p>	

<b>Pollution</b>		
<p><b>How Pollution Hurts Living Things</b> (Levels 7-9)</p> <p>Why are frog populations declining all over the globe? Is pollution at fault? These selections explore important questions about frogs, the environment, and toxicology.</p> <p>Adapted from "Frog Fable: In Search of Princes in Disguise," Odyssey Magazine, May 2002, original text by Mary Carmichael.</p> <p>"Frog Fable" image p. 4© Corbis. "A Sentinel Species" image p. 2 courtesy of U.S. Fish and Wildlife Service/R. Tuck; image p. 4 courtesy of U.S. Geological Survey. "How Can Toxicology Help?" image p. 4 courtesy of Carus Publishing.</p>		<b>Frog Fable</b>
		<b>A Sentinel Species</b>
		<b>How Can Toxicology Help?</b>
<p><b>Trash and Recycling</b> (Levels 7-9)</p> <p>As a nation, the United States is one of the world's leading trash producers. How can recycling help our growing garbage problem?</p> <p>Adapted from "Following the Path of Your Trash," Faces Magazine, April 1991, original text by Nancy Bronstein. "Following the Path of the Trash" image p. 4 courtesy of Michael Fitzpatrick; image p. 6© Corbis. "Recycling" image p. 2 courtesy of Carus Publishing Company. "What Can Be Done?" image courtesy of the City of Asheville.</p>		<b>Following the Path of the Trash</b>
		<b>Recycling</b>
		<b>What Can Be Done?</b>









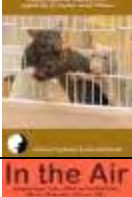

<p><b><i>Trouble and Hope for the Great Lakes (Levels 7-9)</i></b></p> <p>How pollution and other human factors have negatively affected the Great Lakes, and the plan to reverse some of the damage in these great American natural resources.</p> <p>Adapted from "The Great Lakes: New Hope for Troubled Waters?," Cobblestone Magazine, May 1988, original text by Billie Kay Tye. "The Beginning of Trouble" image p. 2 courtesy of Space Science and Engineering Center, University of Wisconsin-Madison/Liam Gumley; image p. 4 courtesy of U.S. Fish and Wildlife Service/Lee Emery. "Pollution and More Pollution" image p. 2 Image p. 2 courtesy of Tip of the Mitt Watershed Council; image p. 4 courtesy of National Park Service.</p>		<p><b>The Beginning of Trouble</b></p>
		<p><b>Pollution and More Pollution</b></p>
		<p><b>Optimism for the Future</b></p>


<b>Thomas Edison</b>		
<p><b><i>The Wizard of Menlo Park</i></b> <b>(Levels 7-9)</b></p> <p>Thomas Edison invented the electric light, but do you know what else he invented? Thomas Edison has more patents registered in his name than any other person in the world.</p> <p>Adapted from "The Wizard of Menlo Park," Cobblestone Magazine, February 1980. "Necessity is the Mother of Invention" image courtesy of the Newark Museum. "Edison's Inventions" image p. 2 courtesy of Archives of Latvian Folklore/Aldis Putelis; image p. 4 courtesy of The Thomas Edison Papers at Rutgers University; image p. 6 courtesy of National Park Service.</p>		<p><b>Necessity is the Mother of Invention</b></p>
<p><b><i>Edison Lights Up New York City</i></b> <b>(Levels 7-9)</b></p> <p>How Thomas Edison made good on his promise: "We will make electric light so cheap that only the rich will be able to burn candles."</p> <p>Adapted from "Let There Be Light," Cobblestone Magazine, October 1990, original text by Bruce Watson. "Let There Be Light" image courtesy of Library of Congress. "Edison's Projects" image p. 2 courtesy of Jodi Newell; image p.4 courtesy of National Park Service; image p.6 courtesy of Library of Congress.</p>		<p><b>Edison's Inventions</b></p>
<p><b><i>New Words for New Inventions</i></b> <b>(Levels 7-9)</b></p> <p>How words like "electricity" and "telephone" were developed for what were then new inventions.</p> <p>Adapted from "Word Lore," Cobblestone Magazine, February 1980. "Word Lore" image p. 2 courtesy of MorgueFile.com/Gracey Stinson.</p>		<p><b>Let There Be Light</b></p>
	<p><b>Edison's Projects</b></p>	
	<p><b>The Famous Morning</b></p>	
	<p><b>Word Lore</b></p>	

<b>Communication Before Electronics</b>		
<p><b>Communication in Colonial America</b> (Levels 7-9)</p> <p>Today, vital information can be quickly spread by telephone or the internet, but sending news across long distances was especially difficult in early America.</p> <p>Adapted from "From Smoke Signals to Satellites," Cobblestone Magazine, January 1985, original text by Beth Bohac. Images courtesy of Carus Publishing Company.</p>		<p><b>From Smoke Signals to Newspapers</b></p>
<p><b>The Early Mail Service</b> (Levels 7-9)</p> <p>Most of us take daily mail delivery for granted, but between 1840 and 1880 the United States mail service was very different from the way it is now.</p> <p>Adapted from "The United States Mail on the Move," Cobblestone Magazine, October 1981, original text by Jane Harrigan. "The United States Mail on the Move" image courtesy of U.S. National Archives &amp; Record Administration. "Paying for the Post" image p. 2 courtesy of Carus.</p>		<p><b>The United States Mail on the Move</b></p>
		<p><b>Paying for the Post</b></p>
<p><b>The Pony Express</b> (Levels 7-9)</p> <p>What was the impetus for the Pony Express? The origins of this uniquely American institution are described here.</p> <p>Adapted from "They Rode Like the Wind," Cobblestone Magazine, October 1981. "The Rider's Life" image p. 2 courtesy of Carus Publishing Company; image p. 4 courtesy of National Park Service.</p>		<p><b>Sending Mail to California</b></p>
		<p><b>The Rider's Life</b></p>
		<p><b>A Wild Ride</b></p>

<b>Electronic Communication</b>		
<p><b>Using Electricity to Communicate</b> (Levels 9-11)</p> <p>In 1844, Samuel Morse opened the electronic age in communications by sending a message across wires from Washington, D.C., to Baltimore, Maryland.</p> <p>Adapted from "From Smoke Signals to Satellites," Cobblestone Magazine, January 1985, original text by Beth Bohac. Image courtesy of the Library of Congress.</p>		<p><b>Make Way For New Inventions</b></p>
<p><b>Samuel Morse and the Telegraph</b> (Levels 9-11)</p> <p>The telegraph killed the Pony Express and paved the way for other electrical inventions, such as the telephone, television and radio.</p> <p>Adapted from "The Man Who Killed the Pony Express," Cobblestone Magazine, October 1981, original text by Nancy Galloway. "The Telegraph" image p. 2 courtesy of Library of Congress; image p. 4 © 1996, Smithsonian Institute.</p>		<p><b>The Man Who Killed the Pony Express</b></p>
<p><b>Marconi: Father of Radio</b> (Levels 9-11)</p> <p>In 1899, Marconi proved the value of wireless telegraph, later known as radio, to America.</p>		<p><b>The Telegraph</b></p>
<p>Adapted from "Marconi," Cobblestone Magazine, October 1988, original text by Karen E. Hong. "Marconi's Wireless Telegraph" image p. 2 courtesy of Library of Congress. "Improvements and Achievements" image p. 2 used by permission of Marconi Corporation plc.</p>		<p><b>Marconi's Wireless Telegraph</b></p>
		<p><b>Improvements and Achievements</b></p>

<p><b>Sarnoff: Father of American Television (Levels 9-11)</b></p> <p>David Sarnoff liked to think of things electronics could do for people, and he brought many of his ideas to life. His innovative ideas included radio, black-and-white television, and color television.</p> <p>Adapted from "David Sarnoff: Father of American Television," Cobblestone Magazine, October 1989, original text by Richard L. Mattis. Images courtesy of David Sarnoff Library.</p>		<p><b>Learning about Electronics</b></p>
		<p><b>From Radio to Television</b></p>
		<p><b>A Network Is Born</b></p>
		<p><b>Setting the Standard</b></p>

<b>Sensory Systems: Taste and Smell</b>		
<p><b>Taste and Smell</b> (Levels 7-9)</p> <p>Even though smelling organs and tasting organs are located in different places in our heads, the messages traveling through the nerve systems of both organs arrive in the same area of the brain.</p>		<b>The Marriage of Taste and Smell</b>
		<b>The Tasting Organs</b>
		<b>The Smelling Organs</b>
		<b>Strong Smells</b>
<p><b>Animals Are Smell Superstars</b> (Levels 7-9)</p> <p>Creatures in the wild smell and respond to chemicals in their environments in ways that people can only imagine.</p>		<b>Take a Whiff on the Wild Side</b>
		<b>In the Sea</b>
		<b>On Land</b>
		<b>In the Air</b>

<p><b><i>The Genetics of Smell</i></b> <b><i>(Levels 7-9)</i></b></p> <p>Research has proved that, in some cases, variations in smell perception are a result of genetic differences.</p>		<p><b>Do You Smell What I Smell?</b></p>
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## The Importance of Sleep

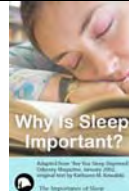
### ***Sleep Deprivation*** ***(Levels 7-9)***

What is sleep deprivation and why is sleep important? These questions are explored in these selections about a basic human need.

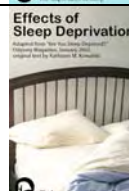
Adapted from "Are You Sleep Deprived?" Odyssey Magazine, May 2004, original text by Kathiann M. Kowalski. "Are You Sleep Deprived?" image p. 2 courtesy of Kevin Connors, <http://www.kconnors.com>. Sleep image courtesy of Carus Publishing Company.



### **Are You Sleep Deprived?**



### **Why Is Sleep Important?**



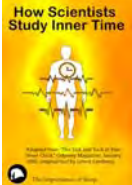





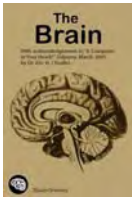
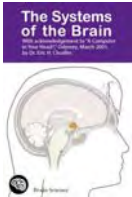




### **Effects of Sleep Deprivation**










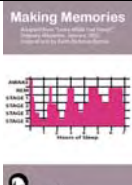



### **Why Aren't We Sleeping**




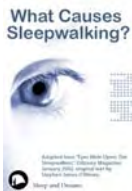

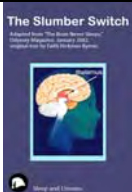






<p><b><i>The Rhythm of Sleep</i></b> <b>(Levels 7-9)</b></p> <p>Biological rhythms and how our inner clocks affect our waking and sleeping patterns.</p> <p>Adapted from "Tick and Tock of Your Inner Clock," Odyssey Magazine, January 2002. Original text by Kathiann M. Kowalski. "What Are Biological Rhythms?" image courtesy of Hilary Quinn. "What Are Circadian Rhythms?" image Oscar Burriel/Photo Researchers, Inc.</p>		<p><b>What Are Biological Rhythms?</b></p>
		<p><b>What Are Circadian Rhythms?</b></p>
		<p><b>How Do Scientists Study Inner Time</b></p>
		<p><b>Teenagers' Inner Clocks</b></p>
		<p><b>Should High Schools Start Later</b></p>
		<p><b>The Clock in Your Brain</b></p>

<b>Brain Science</b>		
<p><b>About the Brain</b> (Levels 9-11)</p> <p>Your brain controls your emotions, appetite, sleep, heart rate, and breathing. In effect, your brain is who you are and everything you will be.</p> <p>With acknowledgment to "A Computer in Your Head?," Odyssey, March 2001, by Dr. Eric H. Chudler. "The Brain" image p. 2 courtesy of NIAAA/Oscar-Berman, M. and Marinlovic, K. Alcoholism and the brain: An overview. Alcohol Research &amp; Health 27(2):125–133, 2003; image p. 4 courtesy of Karl Romstedt, Capital University. "The Systems of the Brain" image p. 2 © J. Bavosi/Photo Researchers, Inc.; image p. 4 Medical Illustration Copyright © 2006 Nucleus Medical Art, All rights reserved. www.nucleusinc.com.</p>		<p><b>The Brain</b></p>
<p><b>How Do Your Dendrites Grow?</b> (Levels 9-11)</p> <p>What is a dendrite and how does it work? This selection is all about dendrites and the amazing human brain.</p> <p>Adapted from "Mary, Mary, Quite Contrary, How Do Your Dendrites Grow?," Odyssey Magazine, March 2001, original text by Jeanne Miller. "How Do Dendrites Grow?" image© A. Pasieka/Photo Researchers, Inc. "Rats as Models" image p. 2 Will &amp; Deni McIntyre/Photo Researchers, Inc.; image p. 4 courtesy of Serendip website. "Mental...and Physical 'Enrichment'" image p. 4© Tamara Bauer.</p>		<p><b>The Systems of the Brain</b></p>
		<p><b>How Do Dendrites Work?</b></p>
		<p><b>Rats as Models</b></p>
		<p><b>Mental and Physical 'Enrichment'</b></p>
	<p><b>Are You Growing Your Dendrites?</b></p>	

<p><b>Nutrition and Brainpower (Levels 9-11)</b></p> <p>What you eat affects your mind as well as your body. Learning how to read nutrition labels can help you make healthy food choices.</p> <p>Adapted from "Can Milk Make You Happy? Can Fish Make You Smart?," Odyssey Magazine, October 2000, original text by Faith Hickman Byrnie. With acknowledgement to the U.S. Food &amp; Drug Administration, Center for Food Safety and Applied Nutrition. (November, 2004). "How to Understand and Use the Nutrition Facts Label." Retrieved February 07, 2006, (rom <a href="http://www.cfsan.fda.gov/~dms/foodla">http://www.cfsan.fda.gov/~dms/foodla</a>) "You Are What You Eat" image © Corbis. "Food, Mind and Mood" image p. 1, courtesy of Supreet Vaid; milk image p. 2 © Getty Images; yogurt image p. 2 stockxchange. "Food for Thought" image p. 4 courtesy of scen.tk. "Using Nutrition Facts Tables" image p. 2 and broccoli image p. 4 © Corbis.</p>		<p><b>You Are What You Eat</b></p>
		<p><b>Food, Mind, and Mood</b></p>
		<p><b>Food for Thought</b></p>
		<p><b>Using Nutrition Facts Tables</b></p>

<b>Sleep and Dreams</b>		
<p><b>Animals and Dream Studies</b> (Levels 9-11)</p> <p>Proof from scientists that animals dream.</p> <p>Adapted from "Do Animals Dream?," Odyssey Magazine, January 2002, original text by Faith Hickman Byrnie. "Proof From the Scientists" image p. 2 courtesy of Nomadic Research Labs. "More to Learn" image © Getty Images.</p>		<b>Do Animals Dream?</b>
		<b>Proof From Scientists</b>
		<b>More To Learn</b>
<p><b>Learn While You Sleep?</b> (Levels 9-11)</p> <p>Evidence suggests that your brain is learning while you sleep, processing and storing memories of what you experience while awake.</p> <p>Adapted from "Learn While You Sleep?," Odyssey Magazine, January 2002, original text by Faith Hickman Byrnie. "Making Memories" image p. 2 courtesy of ThinkQuest.</p> <p>"Play It Again" image p. 2 courtesy of PLoS/(2004) Brain Activity during Slow-Wave Sleep Points to Mechanism for Memory. PLoS Biol 2(1): e37; image p. 4 © Rickard Gunée, www.rickard.gunee.com. "The Role of REM Sleep" image p. 2 © Laurent/Lae, American Hospital of Paris/Photo Researchers, Inc.; image p. 4 © Photo Researchers, Inc.</p>		<b>Making Memories</b>
		<b>Play It Again</b>
		<b>The Role of REM Sleep</b>
		<b>Sleep and Memory</b>

<p><b>Sleepwalkers</b> (Levels 9-11)</p> <p>Sleepwalkers are living in a world of unconscious perception--one where they can perceive a world but not commit it to memory. These selections present sleepwalking research, facts and lore.</p> <p>Adapted from "Eyes Wide Open: The Sleepwalkers," Odyssey Magazine, January 2002, original text by Stephen James O'Meara. "Eye-Opening Research" image p. 2 © Philippe Psaila/ Photo Researchers, Inc.; image p. 4 Oscar Burriel/Photo Researchers, Inc. "What Causes Sleepwalking?" image p. 2© Photo Researchers, Inc.</p>		<p><b>Who Sleepwalks?</b></p>
		<p><b>A Night with a Sleepwalker</b></p>
		<p><b>Eye-Opening Research</b></p>
		<p><b>What Causes Sleepwalking?</b></p>
		<p><b>Fun Facts About Sleepwalking</b></p>
<p><b>The Brain Never Sleeps</b> (Levels 9-11)</p> <p>There are parts of the brain that are responsible for keeping us awake, and there is another part of the brain that is responsible for keeping us asleep. The brain itself, however, never sleeps.</p> <p>Adapted from "The Brain Never Sleeps," Odyssey Magazine, January 2002, original text by Faith Hickman Byrnie. "The Slumber Switch" image p. 2 courtesy of www.cnsforum.com. "The Five Sleep Stages" images © 2006, Custom Comics Services, from SleepForKids.org. For further information, visit The National Sleep Foundation at SleepForKids.org or SleepFoundation.org</p>		<p><b>The Slumber Switch</b></p>
		<p><b>The Five Sleep Stages</b></p>
		<p><b>REM Sleep and Dreams</b></p>

<p><b>What Good is Sleep? (Levels 9-11)</b></p> <p>Is sleep a waste of time? The importance of REM and non-REM sleep for mind and body.</p> <p>Adapted from "The Brain Never Sleeps," Odyssey Magazine, January 2002, original text by Faith Hickman Byrnie. "The Importance of Non-REM Sleep" image p. 2 © Corbis. "The Importance of Non-REM Sleep p. 2 based on data from Roffwarg et al., Ontogenetic development of the human sleep-dream cycle, Science, 152:604-619, 1966</p>		<p><b>The Importance of Non-REM Sleep</b></p>
		<p><b>The Importance of REM Sleep</b></p>