

**Unit Planning Guide for Interdependent Relationships in Ecosystems for Grades 3–5**

**Timeline:**

<p><b>Core Idea/Topic:</b> Interdependent Relationships in Ecosystems  <b>Grade Level:</b> 3–5  <b>Concepts:</b> Animal parts, animal needs, food chains/webs</p>	<p><b>Standards</b>  <b>NGSS</b>                  LS1.A. Structure and Function; LS1.C Organization for Matter and Energy Flow in Organisms; LS2.A Interdependent Relationships in Ecosystems; LS2.B Cycles of Matter and Energy Transfer in Ecosystems</p>
<p><b>Questions to Drive the Inquiry</b></p> <ol style="list-style-type: none"> <li>1. What do animals need to live?</li> <li>2. How do plants and animals interact in an ecosystem?</li> </ol>	<p><b>CCSS ELA-LITERACY</b>  <b>Key Ideas and Details</b> (RI.3.1, RI.4.1, RI.5.1); <b>Craft and Structure</b> (RI.3.4, RI.3.5, RI.4.4, RI.4.5, RI.5.4, RI.5.5); <b>Integration of Knowledge and Ideas</b> (RI.3.7, RI.4.7, RI.5.7); <b>Production and Distribution of Writing</b> (W.3.5, W.3.6, W.4.5, W.4.6, W.5.5, W.5.6); <b>Research to Build and Present Knowledge</b> (W.3.7, W.3.8, W.4.7, W.4.8, W.5.7, W.5.8); <b>Comprehension and Collaboration</b> (SL.3.1, SL.3.2, SL.3.3, SL.4.1, SL.4.2, SL.4.3, SL.5.1, SL.5.2, SL.5.3); <b>Presentation of Knowledge and Ideas</b> (SL.3.4, SL.3.5, SL.3.6, SL.4.4, SL.4.5, SL.4.6, SL.5.4, SL.5.5, SL.5.6)</p>
<p><b>Investigations</b></p> <ol style="list-style-type: none"> <li>1. Dissect owl pellets. Use charts and digital resources to sort and identify what the owl ate.</li> <li>2. Observe animals in the classroom and through technology. Research how animals use their body parts to seek and find food.</li> <li>3. Research animal habitats. Compare different animal habitats and determine how animals interact.</li> </ol>	<p><b>Performance Assessment</b></p> <ol style="list-style-type: none"> <li>1. Students will design and build a habitat that includes an animal's needs.</li> <li>2. Students will use technology to design a brochure that explains a food web for an owl in the local community.</li> </ol>
<p><b>Student Questions</b></p> <ol style="list-style-type: none"> <li>1. What does an owl eat?</li> <li>2. How do owls use their heads, eyes, wings, and talons to catch their prey?</li> <li>3. What does an owl need in its habitat?</li> </ol>	



# Part 1

## Unit Planning Guide for Interdependent Relationships in Ecosystems for Grades 3–5 (continued)

Cross-Curricular Connections						
Science	Technology	Engineering	Mathematics	English Language Arts	Social Science	Art
<ul style="list-style-type: none"> <li>• How do the parts of an animal determine what it eats?</li> <li>• How do living things change in a life cycle?</li> <li>• How do plants and animals interact in an ecosystem?</li> </ul>	<ul style="list-style-type: none"> <li>• Digital microscope: View bones and feathers</li> <li>• Kidspiration@: Organize key details in preparation for writing. Create food chain/web.</li> <li>• Brochure or pamphlet</li> <li>• Class blog: Report data and information collected about plants and animals in our ecosystem.</li> <li>• Apps: Kids Discover, National Geographic</li> </ul>	<ul style="list-style-type: none"> <li>• Build an owl box.</li> <li>• Design and build a bird feeder to attract bird species to your yard or garden habitat.</li> </ul>	<ul style="list-style-type: none"> <li>• How does a raptor's wingspan compare to that of other birds?</li> <li>• How does the shape of a bird's wing affect its flight patterns?</li> <li>• Beak shape</li> <li>• Create charts and graphs to organize the data collected from research and observations.</li> </ul>	<ul style="list-style-type: none"> <li>• Read informational text to explain key details about animals.</li> <li>• Record observations and describe relevant details in journals.</li> <li>• Label diagrams and drawings.</li> <li>• Write reports communicating understanding of investigations.</li> </ul>	<ul style="list-style-type: none"> <li>• Where do animals live? For example, research and compare animals that live in different ecosystems. Locate geographic regions on a map.</li> <li>• How do plants and animals interact locally and globally?</li> <li>• How does a drought or other extreme weather occurrence affect an ecosystem?</li> </ul>	<ul style="list-style-type: none"> <li>• John James Audubon: Observe, draw, and paint birds.</li> <li>• Emily Carr: Observe, draw, and paint trees.</li> <li>• Pattern and value</li> <li>• Observe and create animal patterns.</li> <li>• Observe and create color value to illustrate camouflage.</li> </ul>

Multiple Intelligences							
Linguistic	Logical-Mathematical	Visual-Spatial	Bodily-Kinesthetic				
Musical	Interpersonal	Intrapersonal					
<ul style="list-style-type: none"> <li>• Collaborative discussion</li> <li>• Reading</li> <li>• Writing</li> <li>• Brochures</li> <li>• Reports</li> </ul>	<ul style="list-style-type: none"> <li>• Graphs</li> <li>• Charts</li> <li>• Measurement</li> <li>• Data organization</li> <li>• Data interpretation</li> </ul>	<ul style="list-style-type: none"> <li>• Videos</li> <li>• Technology applications</li> <li>• Hands-on investigations</li> <li>• Photographs</li> <li>• Drawings</li> <li>• Puzzles</li> </ul>	<ul style="list-style-type: none"> <li>• Hands-on</li> <li>• Reader's Theater</li> <li>• Plays</li> <li>• Outside explorations</li> </ul>	<ul style="list-style-type: none"> <li>• Songs</li> <li>• Chants</li> <li>• Poems</li> </ul>	<ul style="list-style-type: none"> <li>• Collaborative projects</li> <li>• Varied groupings</li> </ul>	<ul style="list-style-type: none"> <li>• Student choice</li> <li>• Reflection</li> <li>• Meaningful connections</li> </ul>	
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**Unit Planning Guide for Interdependent Relationships in Ecosystems for Grades 3–5 (continued)**

**Resources**

Burnie, D. 2016. *DK eyewitness books: Eagle and birds of prey*. New York: Dorling-Kindersley.

Caputo, C. A. 2012. *Smart words science reader: Birds*. New York: Scholastic.

Davies, N. 2007. *White owl, barn owl*. Sommerville, MA: Candlewick Press.

Gibbons, G. 2005. *Owls*. New York: Holiday House.

National Geographic Learning. 2003. *Windows on literacy early (Science: Life science): Birds*. Washington, DC.: National Geographic.

Pallotta, J. 1986. *The bird alphabet book*. Watertown, MA: Charlesbridge.

Read, T. C. 2011. *Exploring the world of owls*. Buffalo, NY: Firefly Books.

Swanson, D. 1998. *Welcome to the world of eagles*. Vancouver, Canada: Whitecap Books.

Wyatt, L. 2006. *Those outrageous owls*. Sarasota, FL: Pineapple Press.

**Content Vocabulary**

animal	external	herbivore	predator
beak	eyes	internal	prey
carnivore	feathers	life cycle	raptor
community	food chain	mouth	scales
ears	food web	omnivore	system
ecosystem	fur	owl pellet	talons
energy flow	habitat	parts	wings
			wingspan

**Academic Vocabulary**

change	discuss	information	present
clarify	display	informational	question
compare	dissect	text	record
connect	evidence	journal	report
contrast	explain	label	resources
describe	facts	measure	similar
details	ideas	model	support
different	illustrate	observation	thinking

**Reflection**

Observing raptors in the classroom through the wildlife-refuge organization provided a firsthand experience with real birds of prey. The use of dissected owl pellets was very engaging. A possible community service project to collect supplies or raise money for the wildlife refuge may be an option for a project-based learning unit. Extending the backyard bird feeder project in conjunction with a habitat journal would offer students an opportunity to observe and reflect at home as they learn about different kinds of birds.