

Ball State University
Field Station and Environmental Education Center

Lesson Plan: Who Lives in Indiana?

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Lesson Title:	Who Lives in Indiana?	
Topic/Unit:	Ecology; Life Sciences	
Context		
Grade Level:	8 th grade; Science/Biology	
Anticipated Timeline:	Dependent on length of time given to research food web and Latin name information, but minimum of 1 – 2 days	
Learning Goals and Assessments		
Phenomenon or Problem:	Science happens both near and far, and this lesson focuses on honing identification skills for wildlife species close to home. This lesson can be conducted in class or through distance learning, using technology to observe and document wildlife in local Muncie Indiana, and assisting real-life scientists in identifying wildlife captured on camera in Chicago.	
Essential Questions:	<ul style="list-style-type: none">• What are some common Indiana animals?• Can we organize and classify animals and plants based on their relationships with one another?• How are organisms related to each other, and how do we organize those relationships?	
Objectives:	Learning Outcomes Successful learners will...	Assessments
	<ul style="list-style-type: none">• Identify common Indiana animals by common name and research their scientific names.• Classify common Indiana organisms into categories based on their intraspecific relationships: producer, consumer, decomposer, predator, and prey.• Describe relationships between species using food chains and food webs, including predator/prey and consumer/producer relationships.• Explain the basic levels of the taxonomic system (kingdom, phylum, class, order, family, genus, and species).• Begin to understand the naming conventions of the taxonomic system and make connections between scientific names and the traits they describe.	<ul style="list-style-type: none">• Completion of identification tables• Completion of relationship table• Construction of food web based on presented wildlife• Completion of citizen science research
Relevant State Learning Standards:	<ul style="list-style-type: none">• 5.LS.2 Observe and classify common Indiana organisms as producers, consumers, decomposers, or predator and prey based on their relationships and interactions with other organisms in their ecosystem.	

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	<ul style="list-style-type: none"> 6.LS.3 Describe specific relationships (predator/prey, consumer/producer, parasite/host) and symbiotic relationships between organisms. Construct an explanation that predicts why patterns of interactions develop between organisms in an ecosystem. 8.LS.7 Recognize organisms are classified into taxonomic levels according to shared characteristics. Explain how an organism's scientific name correlates to these shared characteristics.
Next Generation Science Standard	<ul style="list-style-type: none"> MS-LS2-2. Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.
Science and Engineering Process Standards (SEPS)	<p>Constructing explanations and designing solutions in 6–8 builds on K–5 experiences and progresses to include constructing explanations and designing solutions supported by multiple sources of evidence consistent with scientific ideas, principles, and theories.</p> <ul style="list-style-type: none"> Construct an explanation that includes qualitative or quantitative relationships between variables that predict phenomena. (MS-LS2-2)
Disciplinary Core Ideas	<p>LS2.A: Interdependent Relationships in Ecosystems Similarly, predatory interactions may reduce the number of organisms or eliminate whole populations of organisms. Mutually beneficial interactions, in contrast, may become so interdependent that each organism requires the other for survival. Although the species involved in these competitive, predatory, and mutually beneficial interactions vary across ecosystems, the patterns of interactions of organisms with their environments, both living and nonliving, are shared. (MS-LS2-2)</p>
NGSS Crosscutting Concepts	<p>Patterns can be used to identify cause and effect relationships. (MS-LS2-2)</p>

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Unit Overview			
Learning Activities	Details		Materials, Supplies, Equipment
	Teacher Instructions	Student Handout Needed	
Video	Video can be shown to students prior to activities, or shown after attempted completion of first 2 activities, to provided structured inquiry.	NA	Computer and internet access
	Topics covered in video: <ul style="list-style-type: none"> • Taxonomic categories with examples • History of naming conventions and function of Latin names • Common animals of Indiana and the habitats they can be found in • Intraspecific relationships • Food webs and chains 		
Activity 1: Identification Tables	Provide 4 tables to students to identify IN wildlife. Each table is for a different data set – forest photos, forest videos, wetland photos, wetland videos	Identification Tables	Tables to fill in – paper if in class, digital if distance learning
Activity 2: Relationship Table	Students can use video and internet research to fill in the table. For 8 th graders, an additional column requires some research to determine the accepted Latin name for each species.	Relationship Table	Table worksheet – paper if in class, digital if distance learning; computer and internet access
Activity 3: DIY Food Web	In class or at home research project. Based on the video, their tables, and the example provided, students will create their own food chains. They will then connect their food chains into a food web. Depending on student ability, this activity can be conducted on paper or using Word or PowerPoint.	DIY Food chain and Food Web worksheet	Worksheet example; computer and internet access
Activity 4: Citizen Science	Individual or all-class activity (using projector). Set a minimum threshold of the number of photos your students should identify. If needed for records, a worksheet can be created for the students to have a record of the photos they analyzed.	Hone your Research Skills directions	Computer and internet access