Woodland Ecosystem Investigation
Introductory Activity: PIT the Food Chain Game
Field Activity: Tools Explanation / Global Ecosystem Exploration, Outdoor Field Study

Description: Students investigate the concept of biodiversity by conducting scientific ecosystem investigations in two different environments. Data collection and measurements for each ecosystem include: date, time of day, weather conditions, wind speed, air temperature, soil temperature, water temperature, infiltration rates, soil sample, soil moisture, plant transect, and animal observations. Different methods of data collection – scientific handholds and sensors, personal observations, and experimentation – are used throughout. Collected data is analyzed and conclusions drawn about overall biodiversity of the ecosystem.

Objectives: By the end of the program, the students will be able to:
- Define the terms food chain, food web, producer, consumer, decomposer, herbivore, omnivore, carnivore, ecosystem, biodiversity, and percolation/infiltration
- Construct local, native Indiana food chains and food webs in proper sequence
- Explain how energy is transferred throughout food chains and food webs
- Use scientific investigation tools and observation skills to explore a woodland ecosystem
- Compare similarities and differences between two diverse ecosystems
- Differentiate between areas of high and low biodiversity (biodiversity index rating)
- Point out the positive and negative choices humans make that may affect the biodiversity of their area

2010 Indiana Academic Standards for Science:
Fourth: 4.2.6, 4.3.4
Fifth: 5.3.1, 5.3.2
Sixth: 6.2.5, 6.3.2, 6.3.3, 6.3.4, 6.3.5, 6-8.RS.3, 6-8.RS.4, 6-8.WS.4
Seventh: 6-8.RS.3, 6-8.RS.4, 6-8.WS.4
Eighth: 8.2.6, 8.2.8, 6-8.RS.3, 6-8.RS.4, 6-8.WS.4

2000 Indiana Academic Standards for Mathematics:
Fourth: 4.1.1, 4.1.2, 4.1.3, 4.1.9, 4.5.1, 4.7.1, 4.7.3, 4.7.4, 4.7.5, 4.7.6, 4.7.8, 4.7.9
Fifth: 5.1.2, 5.2.5, 5.5.6, 5.6.2, 5.7.1, 5.7.3, 5.7.4, 5.7.5, 5.7.7, 5.7.8
Sixth: 6.2.1, 6.2.2, 6.5.1, 6.5.6, 6.6.3, 6.7.1, 6.7.4, 6.7.5, 6.7.6, 6.7.9, 6.7.10
Seventh: 7.2.1, 7.5.1, 7.5.2, 7.7.1, 7.7.4, 7.7.6, 7.7.7, 7.7.10, 7.7.11
Eighth: 8.2.1, 8.3.7, 8.7.1, 8.7.4, 8.7.6, 8.7.7, 8.7.10, 8.7.11

Excellence in Environmental Education – Guidelines for Learning (Pre K – 12):

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Please note specific learning objectives and academic standards will vary based on timeframe, location, availability of resources, and tailored content of programming.