



## **Pollinator Power: A Real-World Science Adventure for Earth Day!**

Explore nature, protect pollinators, and become a backyard scientist!





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**Out Teach Earth Day Lesson 2025**  
**"Plants, Pollinators, and Us: A Lesson in Interdependence"**

Grade/ Grade Band	Topic	Location
K-5	Pollinators	Outdoor Classroom
Standard	Science & Engineering Practice	Crosscutting Concepts
LS2.A: Interdependent Relationships in Ecosystems  ESS3.C: Human Impacts on Earth Systems	<ul style="list-style-type: none"> <li>● Asking Questions and Defining Problems</li> <li>● Obtain Evaluate and Communicate Information</li> <li>● Engage in Argument from Evidence</li> <li>● Constructing Explanations and Designing Solutions</li> </ul>	<ul style="list-style-type: none"> <li>● Cause and Effect</li> <li>● Patterns</li> <li>● Systems and System Models</li> </ul>
Brief Lesson Description		
<p>In this 5E lesson, students explore the role of pollinators in ecosystems and investigate how human actions impact these systems. Using exploration through hands-on nature journaling activities, students observe, document, and analyze pollinator behavior in their outdoor classroom. They learn key science concepts like pollination, habitat, and interdependence while developing systems thinking through mapping, species accounts, and biodiversity studies. Students apply their learning by proposing solutions to support pollinators, answering the driving question: <i>"What impact do pollinators have in our outdoor classroom?"</i></p>		
Students will know they are successful when they can:		
<ul style="list-style-type: none"> <li>● Observe and describe the role of pollinators in the ecosystem using evidence from the outdoor classroom.</li> <li>● Identify and explain the parts of a flower and how pollination works.</li> <li>● Show how pollinators, plants, and people are connected in a system.</li> <li>● Propose at least one action humans can take to support pollinators, based on what they've learned and observed.</li> </ul>		
Narrative / Background Information		
Prior Student Knowledge	Possible Misconceptions	
What plants need to survive Life cycle of plants	Pollinators (bees) go to flowers for food (eat pollen) Bees are the only pollinators	
Cross-Curricular Connections		
Math	ELA	
Represent and interpret data	Nonfiction texts Ask and answer questions Writing to inform	

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**LESSON PLAN – 5-E Model**

**ENGAGE: Access prior learning & experience/Stimulate Interest/Outdoor Connection:**

Questions and claims

Show video (below) of bees buzzing around cherry blossoms in Washington, DC.

[Option 1](#)

[Option 2](#)

Ask: What do you notice, what do you wonder, what does it remind you of?

Ask: What do we already know about bees?

Ask: What is the job(function) of a honey bee within their ecosystem?

K-2: A honey bee is a pollinator. Pollinators are like a busy delivery service for flowers, helping them make seeds and fruits.

3-5: Pollinators help plants make seeds and fruits by carrying tiny grains of pollen (like dust) from one flower to another.

Ask: Do you know of any other pollinators besides bees?

**EXPLORE: Student experience with outdoor phenomena /Senses to be explored**

Probing and Clarifying Questions

Driving question: *What impact do pollinators have in our outdoor classroom?*

**Nature Journaling Activities:**

Laws, J. M., & Lygren, E. (2020). *How to teach nature journaling: Curiosity, wonder, attention.* Heyday.

[Team Observation](#)

*Students observe pollinators or pollinator plants and work together to discover as much as possible. As they do, they see the variety and depth of the observations that can be made.*

[Event Comic](#)

*Students create a series of simple diagrams, much like a comic book or a movie storyboard, to record the pollination processes they witness.*

[Biodiversity Inventory](#)

*Students record the diversity of pollinators in two study areas and use graphics and diversity indices to describe and analyze the data.*

**Probing and Clarifying Questions:**

**Grades K-2:**

- Can you draw a picture of a flower and label its parts that help with pollination?
- Why do you think pollinators are important for flowers and plants?
- If there were no pollinators, what do you think would happen to our food supply? Explain your thoughts.

**Grades 3-5:**

- Classify the types of plants that depend on pollinators for reproduction
- Compare the roles of different pollinators in an ecosystem (bees, butterflies, birds, bats)

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- Assess the importance of pollinators in maintaining healthy ecosystems. Why are they essential?
- Analyze the impact of human activities on pollinator populations. What are the long-term effects?

*Ask: What impact do pollinators have in our outdoor classroom?*

**EXPLAIN: Concepts Explained and Vocabulary Defined**

Vocabulary	Formative monitoring/higher order questioning skills
<p><b>Pollination</b> – The process of moving pollen from one flower to another, which helps plants make seeds.</p> <p><b>Pollinator</b> – An animal that helps move pollen between flowers (e.g., bees, butterflies, birds, bats)</p> <p><u>Parts of a Flower:</u></p> <p><b>Pollen</b> – A fine powder made by flowers that helps them reproduce.</p> <p><b>Nectar</b> – A sweet liquid made by flowers that attracts pollinators.</p> <p><b>Stamen</b> – The part of a flower that produces pollen.</p> <p><b>Pistil</b> – The part of a flower that receives pollen.</p> <p><u>Pollinator Habitats &amp; Needs:</u></p> <p><b>Habitat</b> – The natural home of a plant or animal.</p> <p><b>Native Plants</b> – Plants that naturally grow in an area and support local pollinators.</p> <p><b>Ecosystem</b> – A community of plants, animals, and their environment working together.</p>	<p><b>Cause and Effect: Why Do Things Happen?</b></p> <p><b>Objective:</b> Help students understand how actions or natural events affect pollinators and plants.</p> <p><b>Questions to Ask:</b></p> <ol style="list-style-type: none"> <li>1. What happens when a pollinator visits a flower? (What does it do? What does the plant get in return?)</li> <li>2. What would happen if there were no pollinators on our campus? (How would plants be affected? What about other animals?)</li> <li>3. If the number of flowers in an area decreases, how might that affect the number of pollinators?</li> <li>4. How do humans impact pollinators, both positively and negatively? (What happens when we plant a garden? What happens when we spray pesticides?)</li> <li>5. What might cause one type of flower to attract more pollinators than another? (Color, shape, scent, or location?)</li> </ol> <p><b>Systems and System Models: How Do Things Connect?</b></p> <p><b>Objective:</b> Help students see how pollinators, plants, and their environment form an interconnected system.</p> <p><b>Questions to Ask:</b></p> <ol style="list-style-type: none"> <li>1. How are pollinators, flowers, and other animals connected in a system? (What does each part contribute?)</li> <li>2. If one part of the pollination system is removed (like fewer bees or fewer flowers), how would the whole system change?</li> <li>3. What role do humans play in this pollination system? How do our actions fit into the system?</li> <li>4. Can you map out a simple system model showing how pollinators help plants and how plants help pollinators?</li> <li>5. What other parts of nature (like weather, seasons, or other animals) influence the pollination system?</li> </ol>

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**ELABORATE: Applications and Extensions**

**Current News Articles about honey bee decline in the U.S**

["Earth.Org. \(2025, March 26\). Bees are not declining everywhere: A global perspective on population trends."](#)

["Sarnoff, L. \(2025, March 26\). Honey bee colonies could face 70% losses in 2025, impacting agriculture. ABC News."](#)

**Career Connections:**

[Dr. Kristen Lear](#) - Bat Conservationist and Environmental Educator

[Ronda Hamm](#) - Entomologist

**Text Connections:**

Give Bees a Chance by Bethany Barton  
 What if There Were No Bees? by Suzanne Slade  
 Pollinators & Native Plants for Kids by Jaret C. Daniels  
 First Step Nonfiction- Pollination (4 books)

**Videos:**

[Meet the Pollinators! | SciShow Kids](#)  
[Disney's Wings of Life](#)

**EVALUATE: Concepts Explained and Vocabulary Defined**

Formative Monitoring <i>Engage in Argument from Evidence</i>	Summative Assessment <i>Constructing Explanations and Designing Solutions</i>
<p><b>Ask:</b> <i>What impact do pollinators have in our outdoor classroom?</i></p> <p>Support response with evidence and reasoning from the lesson.</p>	<p>Calls to action:</p> <p><b>Option 1:</b></p> <p>Students work in small groups to create: "Pollinator Protection Posters" with one action their classmates can take to help pollinators.</p> <ul style="list-style-type: none"> <li>● Each group presents their poster and explains how their ideas help pollinators.</li> </ul> <p><b>Option 2:</b></p> <p>After observing threats (lack of flowers, trash, etc.), students propose solutions:</p> <ul style="list-style-type: none"> <li>● "What could we do to attract more pollinators to our school?"</li> </ul>

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- “How could we design a better space for pollinators?”

Design a small garden or bee hotel that attracts pollinators. What plants would you include, and why?

**Materials & Resources**

[Mecklenburg County - Plant This, Not That: A Guide to Native and Invasive Species](#)

[North Carolina Native Plant Society - Native Plant Handouts](#)

[Georgia Native Plant Society](#)

[Maryland Native Plant Society](#)

[Maryland Native Plants](#)

[Texas Native Plant Society](#)

[Texas Native Plant Database](#)

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or discoveries on our Padlet wall!**



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city to be featured by Out Teach!**