

Unit 4: The Power of Pollinators

WEEK 8 Lesson 1

Science and Engineering
Designing a Hand Pollinator: Plan and Create

Big Idea	Pollination is a result of animal behavior.
Guiding Question	How does pollination happen?
Content Objective	I can follow a plan to create a hand pollinator, test it, and use the information from the test to decide if my design works the way it's supposed to. (2-LS2-3, Practice 3, Practice 4)
Language Objective	I can describe to my partner how the hand pollinator we are designing works to pick up and deposit pollen. (L.6.2.a)
Materials and Preparation	<ul style="list-style-type: none">● Engineering Design Process chart● Science and Engineering packets● writing and drawing tools● Evaluating Materials for Hand Pollinators chart, from Week 6, for reference <p>Prepare for each pair of children:</p> <ul style="list-style-type: none">● Flowers for Testing Hand Pollinator Designs sheet● ½ teaspoon baking soda● model flowers● containers of materials from Week 7, Lesson 2 <p>Place surplus and any other materials on a tray or table for children to access as needed during the investigation.</p>
Opening 10 minutes	<p><i>We are at a very exciting point in the design process. This week you will plan, create, test, and improve your hand pollinators.</i></p> <p>Refer to the Engineering Design chart and focus on Create.</p> <p><i>Your goal is to design a hand pollinator that works for the particular flower you have. To do this successfully, you always need to be</i></p>

	<p><i>thinking about the flower’s shape and structures and the location of its pollen.</i></p> <p>Refer to a Science and Engineering packet.</p> <p><i>Look back at your <u>Plan</u> page and gather the materials you thought you would need. [Indicate the location of materials, including the shared space of surplus/ additional materials.] Follow your plan and create your design.</i></p> <p><i>Then, test your design. Place a small amount of “pollen” [indicate the baking soda] in your model flower. You will pick up the pollen from your model flower. Set up the plastic cup for depositing “pollen,” just as you did when you were testing materials before. [Demonstrate if needed.] This way you will be able to see how much pollen your design can deposit.</i></p> <p><i>Test how your hand pollinator picks up pollen, and then test to see how it deposits pollen. Use the Three Tap Method you used before. [Demonstrate if needed.] Today, use just the Design #1 flower for this first try. Record your results on the <u>Create</u> page of your packets.</i></p> <p><i>As you work, talk with your partner about what you notice.</i></p> <p>Refer to the questions on the Create page.</p> <p><i>What worked well? What did not work well?</i></p>
<p>Investigation 20 minutes</p>	<p>As children work, circulate to support them with materials, conversations, and process. Ask children to reflect on what is successful and what might be getting in the way of successfully reaching, picking up, or depositing pollen. As children consider what does and does not work well, refer them to the Evaluating Materials for Hand Pollinators chart. Have children record their observations on the <i>Create</i> sheet in their Science and Engineering packets.</p>
<p>Discussion</p>	<p><i>No discussion in this lesson.</i></p>
<p>Closing</p>	<p><i>You’ll have more time tomorrow to talk about how your designs worked and to collect ideas for making improvements.</i></p>
<p>Standards and Practices</p>	<p>L.6.2.a Use words and phrases acquired through conversations, reading, and being read to, and responding to texts, including using adjectives and adverbs to describe (e.g., When other kids are happy, that makes me happy).</p> <p>2-LS2-1 Plan and conduct an investigation to determine if plants need sunlight and water to grow.</p> <p>2-LS2-2 Develop a simple model that mimics the function of an animal in</p>

	dispersing seeds or pollinating plants.
Ongoing assessment	Reflect on children’s work in pairs. How do children analyze the effectiveness of their hand pollinators? Do they distinguish between their designs’ effectiveness in picking up and depositing pollen? Do children connect this effort to natural pollination? What vocabulary do they use? How do they describe what they observe? On what resources do they draw? How do children record their findings?

Notes: