

Unit 4: The Power of Pollinators

WEEK 8 Lesson 3

Science and Engineering

Designing a Hand Pollinator: Improve

Big Idea	Pollination is a result of animal behavior.
Guiding Question	How does pollination happen?
Content Objective	I can create an improved design of a hand pollinator. (2-LS2-3(MA), Practice 1)
Language Objective	I can explain how the redesign of a hand pollinator is an improvement over the first one. (SL.3.2.a)
Materials and Preparation	<ul style="list-style-type: none">● all materials from Lesson 2● surplus or different materials, as designs indicate Make materials available in a central location for children to access as needed.
Opening 2 minutes	<p><i>Yesterday you thought and talked about your designs and identified changes you might make. Record your ideas about improving your designs at the top of the <u>Improve</u> page. Then start working on your improved design.</i></p> <p><i>You might need some additional or different materials. You can find them here. [Indicate surplus materials location.]</i></p> <p><i>When you have improved your hand pollinator, draw a new sketch of your design on the bottom of the <u>Improve</u> page.</i></p> <p><i>When you test your new design, use the Design #3 space for depositing pollen. [Refer to the Flowers for Testing Hand Pollinator Designs sheet.]</i></p>
Investigation 18 minutes	Circulate to support children with materials, conversations, and processes. Focus children’s attention on improvements they are making.

	<p><i>What makes you think this change to your design will be/is an improvement? How will you know for sure?</i></p> <p>Remind children to record their findings in their packets.</p> <p>Reassure children who are experiencing frustration that struggling and improving are part of the design process. Refer them to other children for help in thinking through their challenges and potential improvements. Children may continue their work in Studios until they are satisfied with their designs.</p>
<p>Discussion 10 minutes</p>	<p>Facilitate a whole group discussion about a variety of hand pollinator designs. Focus the discussion on the forms of the different model flowers and the hand pollinators that work effectively.</p> <p>Use any of the following questions to support discussion.</p> <ul style="list-style-type: none"> ● <i>How is your current design different from the first one?</i> ● <i>What inspired you to make these changes?</i> ● <i>How can you tell that this design works better for this flower?</i> ● <i>Do you think that the hand pollinator that you designed would work on a different model flower? Why do you think so?</i> ● <i>What parts of your hand pollinator might work on a different flower? Why do you think so?</i> ● <i>What parts would not work? Why do you think so?</i>
<p>Closing</p>	<p><i>To come up with a design for a hand pollinator for a flower with a specific structure, you engaged in all the steps of the Engineering Design Process. [Refer to the Engineering Design Process chart.] You worked in the ways that professional engineers do.</i></p>
<p>Standards and Practices</p>	<p>SL.3.2.a Describe people, places, and things, tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences.</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 dispersing seeds or pollinating plants.</p>
<p>Ongoing assessment</p>	<p>Reflect on children’s approaches to improving their designs. Do they articulate specific improvements and why they were made? Do children seem to understand and appreciate the need for improvement?</p> <p>Reflect on the whole group discussion.</p>

