

WEEK 8 Lesson 1

**Science and Engineering: Introduction to Biomimicry**  
How can animals help us solve human problems?

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| <b>S &amp; E Big Ideas</b>        | Animals have external parts that help them grow, survive, and meet their needs.<br>Humans can copy animal structures to solve human problems.   |
| <b>S &amp; E Guiding Question</b> | How can animals help us solve human problems?   |
| <b>Content Objective</b>          | I can use what I know about animal structures to identify ways humans have mimicked animals to solve human problems. (1-LS1-1)  |
| <b>Language Objective</b>         | I can discuss ways humans mimic animals to solve human problems. (SL1.1)  |
| <b>Vocabulary</b>                 | <b>mimic:</b> to copy<br><b>biomimicry:</b> when people use ideas from nature to solve human problems   |
| <b>Materials and Preparation</b>  | <ul style="list-style-type: none"> <li>● <a href="https://www.youtube.com/watch?v=V2GvQXvjhLA">Biomimicry 101, Examples of How We Copied Nature</a> video (<a href="https://www.youtube.com/watch?v=V2GvQXvjhLA">https://www.youtube.com/watch?v=V2GvQXvjhLA</a>)w</li> <li>● <a href="#">Biomimicry Matching sheets</a> (animal sheet and pictures of human inventions, copied for each child, and one set for teacher modeling)</li> </ul>  |
| <b>Opening</b><br>9 minutes       | <p><i>We've been learning about how animals use their parts to survive, grow, and meet their needs. One of the reasons this is so important is that humans actually use ideas from plants and animals to solve our own problems! Today, we're going to learn about some different ways humans have copied nature.</i></p> <p>Project the video.<br/><i>When humans copy nature to solve problems, that's called <b>biomimicry</b>.</i></p> <p>Invite children to Turn and Talk.<br/><i>What did you learn from the video about how humans have copied, or <b>mimicked</b> nature?</i></p> |

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| <p><b>Investigation</b><br/>15 minutes</p> | <p><i>Now that we've learned a little bit about biomimicry, let's see if you can use your knowledge of animal parts to match an animal to a human invention.</i></p> <p>Show children the biomimicry sheet with the animals above the boxes and the photos of human inventions.</p> <p><i>To complete this activity, you will look closely at each animal and think about its structures. What do those structures, or parts, do? Then, you'll look at the photos of human inventions. Which inventions mimic a part of each animal? You'll match them up and glue them. Let's do one together.</i></p> <p>Show children the picture of the kingfisher diving into the water and ask which human invention was created by mimicking the bird. Model matching and gluing the bullet train into the box with the kingfisher.</p> <p><i>You're going to match each of the human inventions to the animal that humans mimicked. Before you glue, please raise your hand and I will check to make sure you have the correct matches.</i></p> <p>Provide each child with an animal paper and set of human invention photos.</p> |
| <p><b>Discussion</b><br/>5 minutes</p>     | <p>Facilitate a discussion about the investigation using the following questions.</p> <ul style="list-style-type: none"> <li>● <i>How did you figure out which animal matched each invention?</i></li> <li>● <i>Were there any that confused you?</i></li> <li>● <i>What questions do you have about how animals help us solve human problems?</i></li> </ul>   |
| <p><b>Closing</b><br/>1 minute</p>         | <p><i>This week we'll be learning more about how animals help humans solve problems!</i></p>  |
| <p><b>Standards</b></p>                    | <p><b>Practice 1:</b> Asking questions and defining problems<br/> <b>Practice 3:</b> Planning and carrying out investigations<br/> <b>1-LS1-1</b> Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.<br/> <b>SL1.1</b> I can discuss ways humans mimic animals to solve human problems.</p>  |
| <p><b>Ongoing assessment</b></p>           | <p>Listen in to children as they attempt to match each animal to its human invention and during the discussion.</p> <p>Do they understand that they should be looking at the animal structures and how they function?<br/> Are they able to correctly match animals/inventions?</p>   |