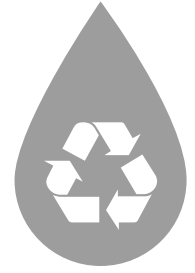


BIOMIMICRY WORKSHEET



Match the natural world example with the invention or design it inspired.

<p>Termites have to keep the temperature of the termite mound constant. To do this, they build air vent tunnels to ensure that air circulates and prevents the mound overheating.</p>
<p>Locusts use complex eyes to see in several directions at once.</p>
<p>Lotus leaves have small bumps and ridges on their surface that help water run off the surface of the leaf. This helps to keep the leaves clean.</p>
<p>Burdock burrs, the seeds of the burdock plant, are covered in tiny hooks which attach to an animal's fur. The animal then carries them around until they fall off, which helps to spread the seeds.</p>
<p>Kingfishers dive from the air into the water, passing through two very different environments. Their beak provides an ideal shape for this impact, meaning that they barely make a splash, despite going at speeds of up to 25 miles per hour.</p>
<p>Shark skin has a surface texture that reduces the attachment of algae and microbes. This decreases the drag on the shark as it swims through the water.</p>
<p>Humpback whales have bumps and ridges on their flippers that help the whale to slow down and turn more efficiently in water.</p>
<p>Mosquitoes have serrated piercing mouthparts. The shape of the mouthparts causes no pain when the mosquito pierces the skin and sucks the blood of its prey, meaning it can feed unnoticed.</p>

<p>Wind turbine design - Researchers are developing wind turbines with bumps and ridges along the edge of the blade to improve the efficiency of turbines.</p>
<p>Velcro – Designed as a surface with hooks and loops which can stick together and then be pulled apart again. It is used in many products, including shoes.</p>
<p>Car design - Car manufacturers developed sensors that can detect movement around the car in any direction, and alert drivers that they are in danger of a crash.</p>
<p>Self cleaning paint - Researchers have designed paint which dries to leave bumps on the surface of the wall. These bumps help water run off and remove dirt from the wall.</p>
<p>Building design - Engineers are developing office blocks which are naturally ventilated to help control the temperature of the buildings.</p>
<p>Bullet train shape – The Shinkansen bullet train travels at high speed from tunnels to open air, both environments with very different air flow. The shape of the train's long steel nose reduces noise and enables the train to travel faster.</p>
<p>Medical needle design - Researchers have designed serrated needles that have less contact with the nerves under the skin, causing less pain.</p>
<p>Ship engineering - Scientists have developed a patterned coating for ships that can prevent growth of algae on the hull, and reduce drag as they move through the water.</p>