ACADEMY SCIENCE CAMP
from home

Biomimicry Home Scavenger Hunt

Nature inspires some of the items in our daily life. When technologies act like living things by mimicking shape or color they are called biomimics. How many biomimics are in your house?

Know before you begin

- This activity can be done inside or outside
- All supplies are easy to find, substitute or leave out entirely
- Please choose a safe space to play

Materials

- Paper
- Marker

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Can you find items in your home that are inspired by nature?

ITEMS	FOUND IT	ITEMS	FOUND IT
WINDMILL		PLYWOOD	
CELL PHONE SCREEN		PLANE	
STREAMLINED CAR SHAPE		SOLAR PANELS	
VELCRO		COOLING SYSTEM	

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PARENT INFO

WINDMILL

Whales' and dolphins' speed and agility are wondrous to behold — finely tuned by evolution for efficiency and maneuverability in the water. Now researchers are working to translate these animals' natural innovations into manmade technologies on land, air and sea. Putting bumps of a whale's fin across the leading edge of a wind turbine means the blades can be oriented at a higher angle to capture more of the wind without worrying about stall, which can damage the turbines.

CELL PHONE SCREEN

By mimicking the way light reflects from the scales on a butterfly's wings, the Qualcomm company has developed Mirasol Displays that make use of the reflected light principle with an understanding of how human beings perceive that light.

STREAMLINED CAR SHAPE

Using the boxfish shape, Mercedes Benz developed a more streamlined and efficient car.

VELCRO

The hook-loop fastener was invented in 1941 by Swiss engineer George de Mestral who lived in Commugny, Switzerland. The idea came to him one day after returning from a hunting trip with his dog in the Alps. He took a close look at the burrs (seeds) of burdock that kept sticking to his clothes and his dog's fur. He examined them under a microscope and noted their hundreds of "hooks" that caught on anything with a loop, such as clothing, animal fur or hair. He saw the possibility of binding two materials reversibly in a simple fashion if he could figure out how to duplicate the hooks and loops.

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PARENT INFO

PLYWOOD

If you've ever tried to pick a mussel off a rock or pier piling, you've likely noticed that they sure know how to stick to something. Columbia Forest Products looked at the natural adhesive abilities of the blue mussel and came up with a way to use soy-based formaldehyde-free technology in the construction of hardwood plywood products.

PLANE

Using the shape of sharks, dolphins, and birds, engineers can develop a more streamlined and efficient plane shape.

SOLAR PANELS

Microscopic algae called diatoms could help triple the electrical output of experimental, dye-sensitized solar cells, according to researchers at Oregon State University and Portland State University.

By trapping light inside the nanoscale pores of thin-film solar cells coated with diatoms, the engineers claim that more incident photons are captured to boost electricity generation, thereby greatly increasing efficiency.

COOLING SYSTEM

Scientists used the cooling system used by termites in a mound to design a more efficient cooling system for skyscrapers.

Resources:

https://www.treehugger.com/slideshows/clean-technology/nature-inspired-innovation-9-examples-of-biomimicry-in-action/page/9/#slide-top