

HIGH DESERT MUSEUM

from home

Designs Inspired by Nature: Community Health Challenge

Have you heard of biomimicry? Nature has long ignited the imagination of engineers, designers and architects. Biomimicry is the practice of drawing inspiration from nature to solve human challenges. For example, inventor George de Mestral returned from a walk and noticed burrs all over their dog's fur. Looking closer, they discovered hook-like shapes on the burrs. This inspired them to invent the VELCRO® hook and loop system!

There are many examples like this in the world, from bird wings and airplanes to spiders and medical tape. When faced with a problem or challenge, we can take a leaf out of nature's book.



Burrs have tiny but strong hooks. Photo by Liz West.



George de Mestral and his invention.

CHALLENGE

How can we keep our community healthy? Look to nature for inspiration, design a new invention and share on social media!

1. Think of the issue you would like to address. For example, how can we keep public surfaces, such as door handles, germ-free?
2. Now think about how other species or ecosystems deal with this sort of challenge. For example, are there species that grow new surfaces, or have a coating that keeps them clean?

Head outside to explore your backyard or any other area. What shapes and connections do you notice? For example, notice the thorns on a rosebush. How do these help the plant? Do you see a bee pollinating a flower? How does this benefit both species?

3. Now, thinking about your chosen community health issue, is there anything you observed that could help to address the challenge? For example, maybe you saw a snake. Snakes shed their skin, which helps them to get rid of parasites. What if a door handle could also shed its coating, or grow a new one, in order to keep clean?
4. Draw, write out or even video your problem and nature-inspired solution.
5. Share your invention and inspiration with us on social media using #highdesertmuseum!



Door Handle by Kathryn Apland



Snake skin by Hadley Paul Garland



Little Brown Bat by John MacGregor



Courtesy, UltraCane

Bat echolocation inspired the invention of UltraCane, which uses the same process to help people with vision impairments to find their way around.



Porcupine



Porcupine quills detail



Hypodermic needle

Porcupine quills inspired the invention of less painful hypodermic needles that penetrate the skin easily.



Spiderweb



Medical tape

The stickiness of spider webs inspired a new type of medical tape for newborns that doesn't damage their skin.

ADDITIONAL ONLINE RESOURCES

[Biomimicry—Introduction to Biomimicry: Foundational Course](https://biomimicry.net/product/intro-course/)
(biomimicry.net/product/intro-course/)

[Biomimicry for Kids](https://asknature.org/collections/biomimicry-for-kids/#.Xoy_DNJKhPY) (asknature.org/collections/biomimicry-for-kids/#.Xoy_DNJKhPY)

[Biomimicry for Young Children](https://thinkdivebiomimicry.com) (thinkdivebiomimicry.com)

Literacy Connections

Books may be available on [Hoopla](https://www.hoopladigital.com) (www.hoopladigital.com) through your local library.

For Adults:

Biomimicry: Innovation Inspired by Nature by Janine M. Benyus

For Kids:

Where the Wind Blows by Linda Booth Sweeney

Biomimicry Inventions Designed by Nature by Dora Lee and Margo Thompson