

Amaze Your Brain *at Home!*

LEARN MORE

BEST FOR
Grades
4-12

BIOMIMICRY

Some of the greatest inspiration for new ideas and methods is all around us. Nature has innovated all kinds of designs that we use today. This process is called Biomimicry where principles in nature help us solve human issues. For instance, birds have many different features that help them to fly. It took humans an extended period of time before we could make aircrafts successful. It would have taken longer if birds had not given us the formula for flight. Here are some other examples of biomimicry.



<https://medium.com/@adsactly/is-it-a-bird-is-it-a-plane-biomimicry-in-airplanes-9862d331df2e>

VELCRO

A Swiss engineer in the 1940's noticed that when he and his dog would go outside that they would return covered in small burs. The burs would latch onto his pants and dog's fur. This observation gave him the idea to invent Velcro by looking at these small burs under the microscope. He was eventually able to mimic the burs hooks that gripped the fabric of his pants to use for other materials such as clothes. Velcro became very useful to astronauts in the 1960's to help keep their items secure in spaceships so that they would not float away.



<https://www.thoughtco.com/the-invention-of-velcro-406611>

CONTINUED ON NEXT PAGE



Tag us @perotmuseum on social media to show us how you *Amaze your Brain!*

PerotMuseum.org

Per[**]**t
Museum of Nature and Science

Amaze Your Brain *at Home!*

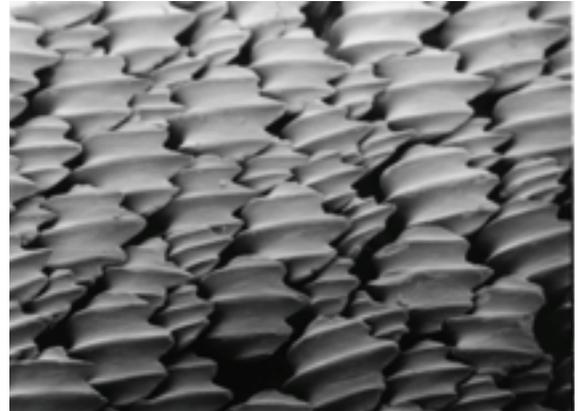
LEARN MORE

BEST FOR
Grades
4-12

BIOMIMICRY (CONT.)

SHARK SKIN

Sharks have skin that differ from other marine organisms and are covered in tiny little teeth called dermal denticles. This skin does not only reduce drag, but can also create an inhabitable place for bacteria to grow. Many medical professionals have taken this idea and applied it to many different surfaces in hospitals to help discourage bacteria growth.



<https://asknature.org/strategy/skin-reduces-biofouling/>

BULLET TRAINS

Bullet trains in Japan faced a common issue that caused a large boom every time the train passed through a tunnel. One of the engineers happened to be a birder who had observed the belted kingfisher and how this bird was able to penetrate the water to catch its prey without causing much of a ripple in the water. The bullet trains' face was remodeled after the shape of the kingfisher's beak to help break through the air causing a more silent train and increasing its speed.



<https://www.oreilly.com/content/what-happens-when-you-combine-a-kingfisher-and-a-bullet-train-innovation/>

CONTINUED ON NEXT PAGE



Tag us @perotmuseum on social media to show us how you *Amaze your Brain!*

PerotMuseum.org

Per[**]**t
Museum of Nature and Science

Amaze Your Brain *at Home!*

LEARN MORE

BEST FOR
Grades
4-12

BIOMIMICRY (CONT.)

Biomimicry is still being used today to influence every day ideas. What do you think you could create using an example from nature?

FOR MORE RESOURCES ON BIOMIMICRY VISIT:

https://www.ted.com/talks/janine_benyus_biomimicry_in_action?language=en

<https://www.smithsonianmag.com/science-nature/how-biomimicry-is-inspiring-human-innovation-17924040/>

https://biomimicry.org/what-is-biomimicry/?gclid=Cj0KCQjw1v0BRDaARIsAGTWD1vFjEj4y_H6c6WHGc6vNoMmIV1HUL71whGIs0MIP6mqzxl4V9DMuXsaAleKEALw_wcB

<http://content.time.com/time/nation/article/0,8599,1996883,00.html>



Tag us @perotmuseum on social media to show us how you *Amaze your Brain!*

PerotMuseum.org

Per**t**
Museum of Nature and Science