Reading Is Fundamental
until every child reads

Inspired by Nature

Did you know that the invention of Velcro was inspired by a plant? The cocklebur seed sticks to animal fur so it can move from place to place. By observing this behavior, scientists figured out how to create the interlocking fibers that make Velcro stick together.

This process of using designs found in nature to solve human problems is called biomimicry. You might design a backpack to protect like an armadillo shell or create a flight suit that works like a sugar glider's wings. When humans encounter a challenge, it makes sense to look to nature to see how it has been solved.

Scientists are careful to distinguish biomimicry from other forms of bioinspired design. In biomorphism, something *looks like* nature. Perhaps you have an umbrella that is decorated like a cloud. Bioutilization *uses* nature. Your table is made out of wood. Neither of those examples are biomimicry. An umbrella doesn't operate like a cloud, and a table doesn't work like a tree. Biomimicry means that something is designed to *function like* nature.

One example of biomimicry can be found in the termite mounds of Africa. Macrotermites build tall structures out of dirt and saliva. Some mounds can measure over 6 feet. Inside the mounds, the termites build tunnels. They live in nests below ground.

Research shows that the mounds act like lungs, encouraging gas exchange in the nests below. The tunnels in the mounds allow air currents to flow through. Temperature changes outside the mounds drive the air movement by way of solar heat. These discoveries about termite mounds have taught scientists how to make more energy efficient climate control systems. Using these systems could reduce greenhouse gas emissions and combat global warming.

Biomimicry has many applications. For simple questions like how to color cloth, or complex problems like how to improve the food supply, look to nature. You might find a solution is already there.

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NAME: _____ DATE: _____

1. Termite mounds act like _____.
    a. Lungs
    b. Tunnels
    c. Solar panels
    d. Nests

2. A bench made of stone is an example of _____.
    a. Biomimicry
    b. Biomorphism
    c. Bioutilization
    d. Biology

3. Which question do you think you could address with biomimicry?
    a. How to color cloth
    b. How to protect crops
    c. How to make more durable materials
    d. All of the above

4. Which of the following is NOT an example of biomimicry?
    a. Cocklebur/Velcro
    b. Sugar glider/flight suit
    c. Termite mound/climate control
    d. Cloud/umbrella

Instructions for teachers:

These questions can be used to assess understanding of the reading passage.

The item in bold is the correct answer for each question.

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