

What is Biomimicry?

Biomimicry (from bios, meaning life, and mimesis, meaning to imitate) is a new discipline that studies nature's best ideas and then imitates these designs and processes to solve human problems. Studying a leaf to invent a better solar cell is an example. I think of it as "innovation inspired by nature."

The core idea is that nature, imaginative by necessity, has already solved many of the problems we are grappling with. Animals, plants, and microbes are the consummate engineers. They have found what works, what is appropriate, and most important, what lasts here on Earth. This is the real news of biomimicry: After 3.8 billion years of research and development, failures are fossils, and what surrounds us is the secret to survival.

Like the viceroy butterfly imitating the monarch, we humans are imitating the best adapted organisms in our habitat. We are learning, for instance, how to harness energy like a leaf, grow food like a prairie, build ceramics like an abalone, self-medicate like a chimp, create color like a peacock, compute like a cell, and run a business like a hickory forest.

The conscious emulation of life's genius is a survival strategy for the human race, a path to a sustainable future. The more our world functions like the natural world, the more likely we are to endure on this home that is ours, but not ours alone.

Looking at Nature as Model, Measure, and Mentor

If we want to consciously emulate nature's genius, we need to look at nature differently. In biomimicry, we look at nature as model, measure, and mentor.

Nature as model: Biomimicry is a new science that studies nature's models and then emulates these forms, process, systems, and strategies to solve human problems — sustainably. The Biomimicry Guild and its collaborators have developed a practical design tool, called the Biomimicry Design Spiral, for using nature as model.

Nature as measure: Biomimicry uses an ecological standard to judge the sustainability of our innovations. After 3.8 billion years of evolution, nature has learned what works and what lasts. Nature as measure is captured in Life's Principles and is embedded in the evaluate step of the Biomimicry Design Spiral.

Nature as mentor: Biomimicry is a new way of viewing and valuing nature. It introduces an era based not on what we can extract from the natural world, but what we can learn from it.

Learn More About Biomimicry:

- A Conversation with Janine Benyus, author of Biomimicry: Innovation Inspired by Nature
- The Biomimicry Design Spiral: A Practical Tool for Innovation

To learn even more, explore the In the News links, articles, and videos available through our Media page.