Inspired by Nature: Biomimicry

In nature there is no such thing as waste. In nature nothing is wasted; everything is recycled. —David Suzuki

Where do we look for ideas and inspiration to solve problems or engineer solutions—nature? According to Biomimicry 3.8 Cofounder Janine Benyus, “Biomimicry ushers in an era based not on what we can extract from nature, but on what we can learn from her. This shift from learning about nature to learning from nature requires a new method of inquiry.”

We’ve all wondered how a seemingly fragile spiderweb can be both delicate and unbreakable, or how a small frog can effortlessly cling to a glass window. When we slow down to observe nature and see what is going on, we can discover all kinds of unique adaptations and processes at work. It reminds us that nature has been at it for a long time, and we can learn much from its beauty and simplicity just by observing. Biomimicry is a powerful approach to designing and engineering sustainable solutions by taking inspiration from nature. It involves studying and reflecting on natural systems, structures, and processes to create innovative technologies and designs that are efficient, resilient, and compatible with the environment.

When engineers solve problems, they can sometimes create unintended consequences, which can be detrimental or wasteful. Considering how to solve human problems using the lens of how nature solves problems allows us to view regenerative and sustainable solutions rather than quick fixes. The engineering design standards ask students to consider optimizing the design solution, including outcomes, risks, and benefits. How can designs be improved to be sustainable and renewable?

In 2015 the United Nations adopted Sustainable Development Goals (SDGs), which have challenged the world to consider 17 major human issues and crises to be addressed by 2030. Biomimicry has the potential to contribute significantly to addressing some of the most severe challenges facing humanity, such as climate change, biodiversity loss, and resource depletion. By learning from and mimicking nature, we can create more sustainable and resilient technologies and designs that work in harmony with the natural world.

Are you challenging your students to interact and view the world around them? Do they have time to look for patterns, find cause-and-effect relationships, and investigate system stability and change? Finally, and probably most important, as John Cleal, poet and painter, says, “We must teach our children to smell the earth, to taste the rain, to touch the wind, to see things grow, to hear the sun rise and night fall—to care.” Please consider sharing your ideas about how students can join the challenge for sustainable solutions by exploring the world around them.

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