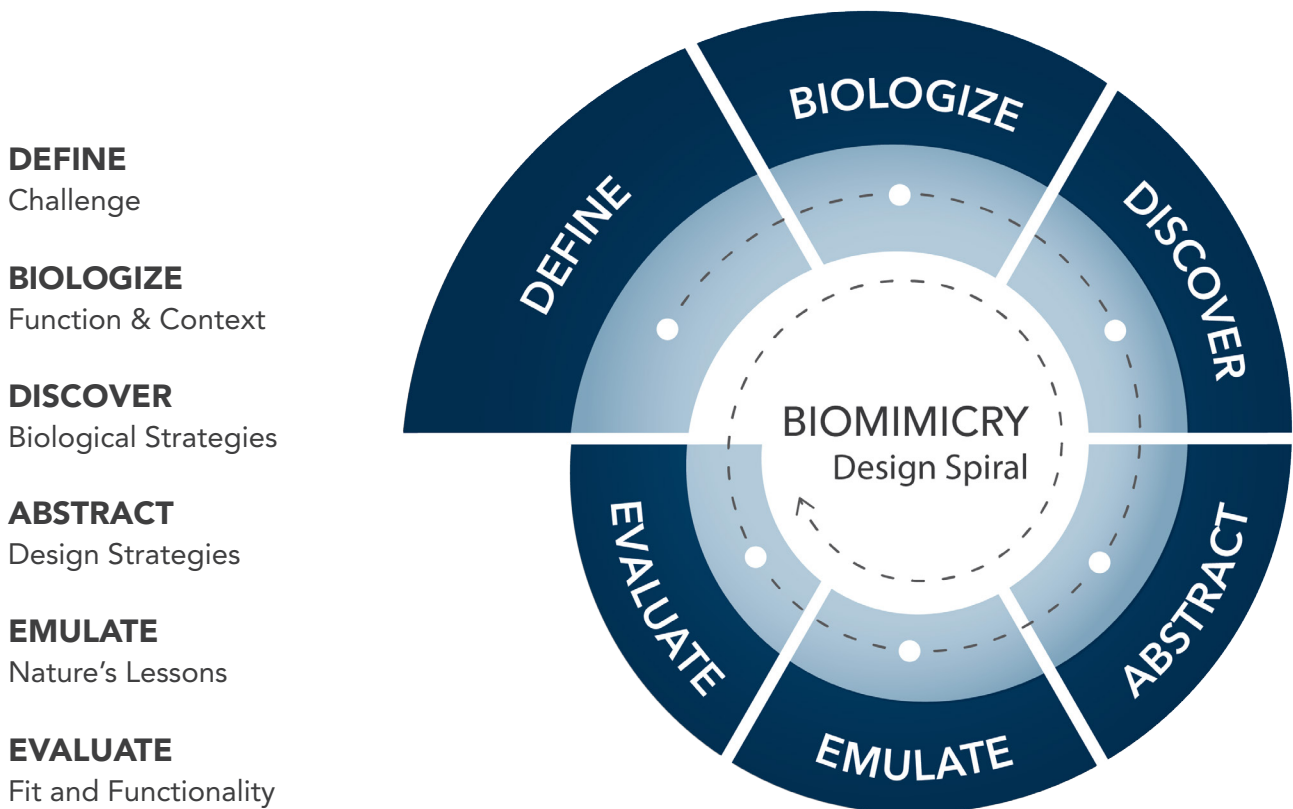


Biomimicry Design Spiral

The Biomimicry Design Spiral is a helpful tool for learning the steps that are critical to successful biomimetic design. Use it when you are interested in solving a specific problem (a “challenge”) or see a design opportunity and want to look to biological models for inspiration.



NOTE: It’s important to remember that the Design Spiral is a simplified version of what is in reality a non-linear and iterative process. Although the steps are listed sequentially, you should expect to revisit earlier steps and revise your work along the way as new discoveries lead you to rethink previous conclusions. (That’s the reason it’s a spiral, not a straight line!)

Challenge to Biology Design Process

DEFINE

Clearly articulate the impact you want your design to have in the world and the criteria and constraints that will determine success.

BIOLOGIZE

Analyze the essential functions and context your design solution must address. Reframe them in biological terms, so that you can "ask nature" for advice.

DISCOVER

Look for natural models (organisms and ecosystems) that need to address the same functions and context as your design solution. Identify the biological strategies that support their survival and success.

ABSTRACT

Carefully study the essential features or mechanisms that make the biological strategies successful. Use plain language to write down your understanding of how the features work, using sketches to ensure accurate comprehension.

EMULATE

Look for patterns and relationships among the strategies you found and hone in on the key lessons that should inform your solution. Develop design concepts based on these strategies.

EVALUATE

Assess the design concept(s) for how well they meet the criteria and constraints of the design challenge and fit into Earth's systems. Consider technical and business model feasibility. Refine and revisit previous steps as needed to produce a viable solution.