Surrounded by the material of everyday modern life (especially if you live in a city), it is sometimes hard to see that the material artifacts of nature far outnumber and outsmart our own. From trees to waves, ants to clouds, the world around us is populated with amazingly complex systems that have emerged over millennia. As artists and designers, we can learn a lot by looking at how nature has produced certain artifacts and then abstracting the patterns, processes, and materials of nature to inform our own work.

**Topics**
Nature, Abstraction, Biomimicry, Emergence

**Instructor Note**
The project below can be adapted for any materials the students are working with in class, have readily available, or are particularly drawn to.

For this exercise, visit a park, beach, or any space that will bring you closer to the natural world. Look closely at the world and find something from nature that inspires you. It could be a leaf, rock formation, seaweed, or really anything. Take time to sit and draw, photograph, and/or write about the thing you are observing. It is okay to focus on small details and not an entire thing, as you will still find a rich depth and complexity at all scales of nature. Attempt to look beyond the form of the artifact and explore its material performance. How are its various components related to each other? How does its material or color change in different areas?

After returning to school, use the library and Internet to research the natural artifact that you observed. What is it made out of? What is its life
cycle? How does it fit into the larger ecosystem? What patterns do you see? What forces affected its form? How does it move or transform over time?

Using the medium of your choice, begin to explore abstracting information from the artifact to make something new. Don’t get overwhelmed by the complexity of the system; just choose something about it that inspires you the most and make something that explores that interest. Allow the complexity of your work to flow out of simple elements building one on each other until a larger emergent whole is created.

How might your new work have a life of its own? What properties do you control and what emerges on its own? How might you create a family of related pieces that share similar qualities without being identical?
Artist Biography: Andrew Kudless

Born in 1975 in Flemington, New Jersey
Currently lives in Oakland, California

Caught between a love for both art and science, Andrew Kudless found a balance in his training as an architect and designer. After completing degrees in architecture at Tulane University and at the Architectural Association in London and working as an architect on several prominent museum designs in the United States, Andrew formed an experimental art and design practice that explores the emergent relationships between art, architecture, engineering, biology, and computation. His work investigates design methodologies of performative integration through geometric and material differentiation. Kudless is an assistant professor of architecture at the California College of the Arts in San Francisco. His work is in the permanent collection of SFMOMA and the Pompidou Centre, in Paris.