

# *Cycles*



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Thinking about cycles is a powerful thing; the entrée to thinking in systems and a key to Blue Design. But, whereas in systems we struggle with understanding complex relationships between large numbers of components, thinking in cycles focuses on following a single component through its cycle in the system. Cycles are easy to see in the world around us, if we tune ourselves to them.

In the products of our technology, we see wasteful cycles everywhere. In office buildings filled with computers, furniture, lights, drywall, carpet. In our kids' toys, in the packaging of our take-out meals, in our cars, in our roads, in our clothing. Where do all these things come from? Where do they go when we throw them out? We don't ask these questions often enough. Usually the unfortunate answer is that they are made of a complex mixture of different resources from remote places, some recyclable, some not, and most difficult to disassemble. Some have materials in them that are getting more difficult to obtain, or require a lot of energy to manufacture, but economics still tells us they are cheaper to throw out rather than spend the time in disassembly. Even if disassembled, many components have no life beyond their first.

So these things have a single cycle that ends in the landfill, or worse, in some unplanned place like the water, the soil, or tossed alongside the road. A single cycle is still a cycle, but it is not an elegant one. The materials in these things are extracted from our environment, used for a short time by us, then relegated to status as "garbage," placed somewhere out-of-play, incapable of being put into another cycle that is of use to humans or nature.

We are trying to improve on this situation. We rescue our kids' toys from the bottom of the toy box and take them to goodwill, extending their cycles of usefulness. We develop technologies to recycle some things, but they can rarely be recycled into materials of equivalent worth. These efforts serve to delay the materials' eventual relegation to the

landfill. We make efforts to consume less: buying fewer things, driving more efficient cars. We apply this mixture of strategies to try to get around the main problem: that our technology was founded on inefficiency and single cycles of resource use. The strategies we use can be likened to having one refrigerator with the door left open in lieu of having two refrigerators with the doors left open. It is an improvement, but we are still not addressing the basic problem: the inherent resource inefficiency of our technology.

In Nature's creations, we see repeating cycles everywhere. I find that a walk in the woods can be full of such observations, short duration cycles on display: leaves, the annually repeating phases of plants and wildlife. We can also directly see our impact on Nature's cycles; how we affect their paths depending on the choices we make. For instance, the tree that was a sapling when my grandfather was young, is ready to either harvest as firewood, lumber, or can be left to grow old and die of natural causes. My choice impacts the cycle of the tree's materials. What is best? Here are my options:

I can harvest it for firewood and lessen my reliance on fossil fuels for heating, preventing "new" carbon dioxide from entering the atmosphere by not extracting it from deep within the Earth.

I can harvest the tree for lumber in a sustainable way, locking up its carbon, making room for the carbon being added by the burning of fossil fuels.

Or I can leave it, so that it eventually releases the same amount of carbon into the atmosphere, but with the benefit of releasing its other materials back into the forest system from which they came, helping to ensure that system's long-term health.

It's a difficult decision. I choose to balance the three options: I harvest the most valuable trees for lumber, use their tops and selectively cull other trees for firewood, while leaving other trees to live, die, and rot. The woods is full of explorations and questions such as this; a microcosm of thinking in resource cycles and systems on a global scale.

The choices Nature makes are from a different world than the one we have created. And the choices we make to create one world with Nature as our partner need to be different

too.

I hope that we all can learn to see the cycles in our world, to see the inefficiency of our technology's use of resources as compared to nature's.

I also hope that we can grow to understand nature's methods of placing resources in cycles enough to emulate it with our technology. I believe that this is the key to ensuring the future availability of resources.

And I hope that eventually, we will be able to create a technology that deliberately shares its resource cycles with those of nature in the most elegant and efficient relationships.