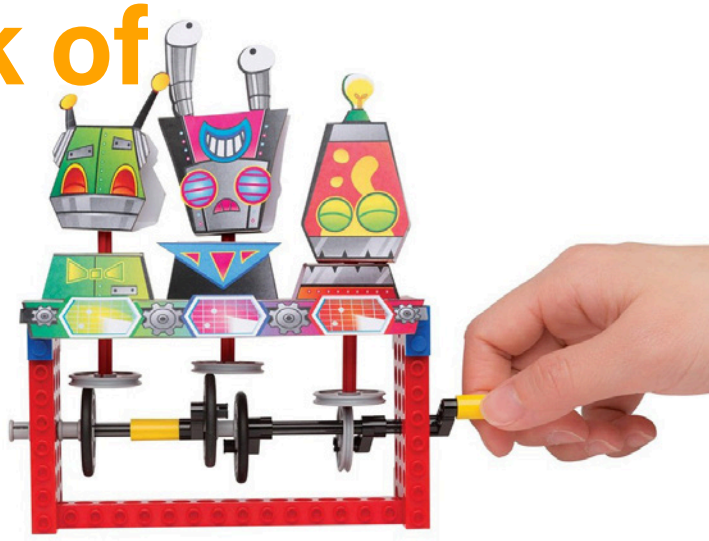
The Wheelwork of the Universe

Aaron Fagan, Senior Editor



Hanging above my desk is a quote from Nikola Tesla that reads, "Every living being is an engine geared to the wheelwork of the universe." What this means to me evolves daily. For example, I was walking the dogs over the weekend, and I noticed a gray piece of plastic on the lawn. My first instinct was it must go to a toy of some kind. I have been trying to imagine all week what it might go to. If it is a car part, where would it go? Perhaps it is a piece from one of the landscaping crew's equipment? And then—in the very synchronistic wheelwork of nature—I was researching one thing and discovered something else: Gear Bots by LEGO. My search was over. Lo and behold, pictured on the box among its component friends were the very type of piece I spotted on the lawn.

Besides offering parents a space from proclamations of boredom, toy science kits engage kids' innate curiosity with the world through hands-on experiments with cause and effect, the beating heart of the scientific method. Philosopher Alvin Toffler wrote in his 1970 book *Future Shock*, "The illiterate of the twenty-first century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn." A good science kit embodies true experimentation in that it will transcend prescriptive outcomes—it will leave room for open exploration of the problems they face. Kids like that may be future engineers.

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STEM kits like Gear Bots not only provide entertainment but also facilitate learning about engineering fundamentals through interactive activities. I grew up with Erector Set, Girder and Panel, and Tinkertoy which were relatively static compared to the toys of today. While this STEM kit is targeted to kids 8 to 12, who—regardless of age—wouldn't want to make a DJ octopus spinning records, a yeti with punching arms, or a pterodactyl with flapping wings?

According to the Gear Bots literature, each model includes a papercraft character kids can fold and link with the corresponding LEGO elements. There's a detailed 64-page book with clear instructions to help kids bring their kinetic creatures to life—plus a host of STEM content to take in about axles, cams, cranks, and more engineering fundamentals in everyday machines.

In contemplating Tesla's assertion about every living being as an engine geared to the universe's wheelwork, one can't help but find serendipitous connections in the everyday. That walk with my dogs and a mundane encounter with a piece of plastic sparked a cascade of thoughts about its origin and purpose.

This seemingly trivial incident led me down a rabbit hole of speculation, only to be pleasantly surprised by a synchronistic revelation during a seemingly unrelated research session. It's moments like these that underscore the interconnectedness of our experiences and the boundless potential for discovery, echoing the sentiment of Alvin Toffler regarding the importance of adaptability and continuous learning in an ever-changing world.

As we immerse ourselves in the realm of STEM education, fostering curiosity and hands-on exploration through innovative kits like Gear Bots, we not only entertain but also empower the engineers and problem solvers of tomorrow. Lest we forget, it was while on a walk in a park, reciting lines from Goethe's poem *Faustus* to himself that Tesla had the revelation for the design of his alternating current (AC) motor.

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