

TECHNIC

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40 years later, people are still learning basic gearing principles from Legos, and the internet is making the hobby community tighter and bigger than ever.

Alex Cannella, Associate Editor

Lego Technic isn't exactly new. The line of products actually just turned 40 last year. Technic kits have always differentiated themselves from their blocky contemporaries with a focus on additional parts such as gears, motors and axles to facilitate motion, and while the window dressing has changed over the years from the bulldozers and helicopters of yesteryear to the newest, coolest sports cars today, that core premise hasn't. For four decades, kids have been able to put together gear trains to operate cranes, cars, tow trucks and more.

And they've only gotten more complex over time, introducing pneumatics, programming and ever-increasingly powerful engines based on real brands of vehicles. But a Lego kit doesn't quite teach you the basics of gearing. Anyone can follow a guide to assemble a kit, but someone at Lego already did the work of measuring ratios, pairing gears, knowing the difference between a bevel and a clutch gear, etc. Lego Technic teaches the what, but not necessarily the how.

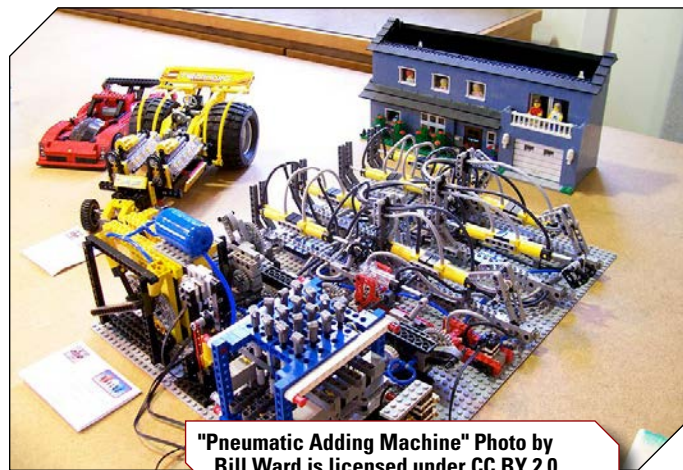
Luckily, the real fun with Legos is when you don't follow the script and build your own little creations with whatever parts are on hand. And when Technic gears get added to the mix, terms like torque you don't hear much outside the industry suddenly become a commonplace part of your kid's Lego lexicon.

It's a dialogue that's only grown over the years, what with the advent of the internet and, in the past few years, the solidification of YouTube and Facebook in the public consciousness. On YouTube, especially, dozens of tutorials explaining basic concepts like gear ratios sit side by side with compilations of fully functional, multi-cylinder engines designed from scratch.

And then, occasionally, you get a video like one in which Adam Savage of MythBusters fame assembles a custom, fan-made Lego kit and gets 4.5 million views.

That particular kit, an automata of Sisyphus rolling a boulder designed by Jason Allemann, is only a small portion of the custom creations community, where some of the creations get very, very involved. The Sisyphus automata, for example, features 1,350 pieces and is designed based on principles in a video put out by the Disney Research Hub about real life automata design called "Computational Design of Mechanical Characters."

Other designs that you can find online include fully functional versions of cars both real and fictional, a functional orrery, fully automated assembly lines and massive Rube Goldberg machines commonly referred to as "great ball



"Pneumatic Adding Machine" Photo by Bill Ward is licensed under CC BY 2.0.

contraptions," the longest of which takes 50 minutes to transport a ball across a room through a gauntlet of automated mechanical contraptions. The engineering complexity of some of these custom designs is only limited by one's creativity.

Many of these creations are centered around a large fan community at rebrickable.com, a website that not only is having designs regularly added to by the community, but also allows other enthusiasts to easily replicate those designs by keeping track of what pieces they already own from Lego's standard Technic sets, what they still need, and even find stores selling the pieces they're lacking.

Most notable, however, is many of the community members' ages. It's not much of a surprise that Legos are predominantly enjoyed by younger crowds, but what is more surprising is just how far the younger generations' interest is taking them when they start engineering their own Technic creations. More often than not, the aforementioned YouTube tutorials are put together by young teens to educate their peers on when and why you would want to use a worm gear or which gear ratios work best and why. These are the people that may very well enter manufacturing themselves eventually.

And more than anything, that's the coolest part about the community surrounding Lego Technic models: it's inspiring tomorrow's manufacturers to learn the very basics of their crafts, and maybe for a few, even introducing them to a career path that might make them our peers one day. 40 years of that is something the gear industry can raise a glass to and celebrate. ⚙️

For more information:

Lego Technic
www.lego.com/en-us/technic