Copernicus Makes 3D Printing Mobile

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Readers of, "Invent to Learn – Making, Tinkering, and Engineering in the Classroom," often tell us that our book inspired their school to build a makerspace. While humbled by the impact our work is having on educators interested in bringing the tools, technologies, techniques, and energy of the maker movement into their school, our book was quite explicit. The best makerspace is found between your ears. Making needs to permeate every corner of the school and waking moment of a kid's day.

Making is a stance – a way of viewing the world with the confidence and competence required to solve problems, even those your teachers never imagined. Makers welcome challenges, even if only to discover that there is a lot more to learn. The habits of mind and traits developed by Making – including: curiosity, creativity, problem solving, debugging, perspective shifting, analysis, observation, empathy, experimentation, personal expression, collaboration, mathematical thinking, etc. are embraced by the Next Generation Science Standards, Common Core, as well as, arts, science, and technology standards around the world.

Surely, we have learnt the lessons of the computer lab. Thirty or so years ago, an adventurous teacher bought a microcomputer and brought it to share with her class. Student excitement could not be contained in one classroom, so the administrator decided to get more computers. However, not every teacher shared the passion, expertise, or willingness to learn demonstrated by their pioneering colleague. So, that great classroom teacher was reassigned to a specialized bunker, called the computer lab. Children for the next three decades would visit this odd location once a fortnight to touch computers. While I recognize that some MakersEd hardware is expensive, dangerous, and requires ventilation or security, most does not. **Making needs to be within arm's length of a student anytime and anywhere they need to solve a problem or construct something.**

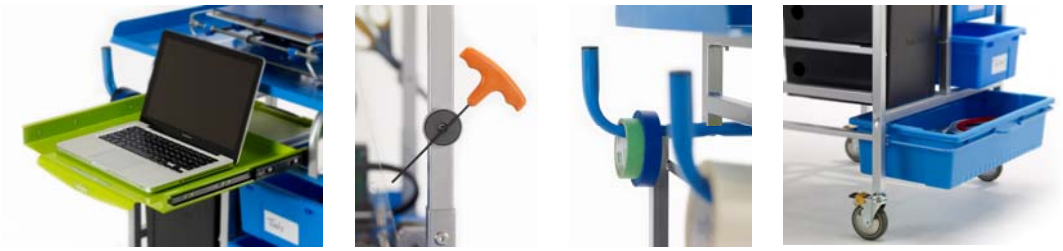
The true power of 3D printing is that it has provided children with access to the Z-axis for the first time in history and makes it possible to fabricate real things. We are no longer constrained by the screen. Those new to 3D printing are enamored

with printing objects from downloaded files and gaze at the amazing technology. Under the right conditions, students quickly discover that the 3D printer is best suited to the design and fabrication of parts needed in other projects, rather than the object of attention. Using technology to make the things you need to solve your own problems is an extremely powerful idea. 3D printing is in its infancy. Not every object prints perfectly every time. You can't just set it and forget it, especially when some prints can take hours to finish. Students and teachers need to watch the printer, remove the printed object, and queue up the next student print. This is impossible when the 3D printer is tethered to the maker space in the nether regions of a school. Perhaps this is why so many educators report that their school owns a 3D printer, but it is seldom or never used.

There is an alternative.

Copernicus' new 3D Printer Cart solves these problems. It brings the exciting power of 3D design and printing to where it is needed. Its clever design and durability has allowed me to push it all over our school campus. The 3D Printer Cart has ample room for amateur and prosumer 3D printers, a pull-out laptop tray for controlling the printer, handy bins for storing finished models, tools, tape, and safety gear, plus an ingenius bar for holding and dispensing multiple spools of filament. Of course there is a built-in power strip and other clever features that support mobile 3D printing. The cart is flexible enough to hold craft supplies, microcontrollers, LEDs, batteries, conductive tape and pens, and other maker materials as well.

Humans, by their very nature, seek to control their world and express themselves. The maker movement holds the potential to amplify the potential of each student. The Copernicus 3D Printer Cart allows this to occur naturally across your campus.



Easy access to technology and handy tool and maker material storage.