



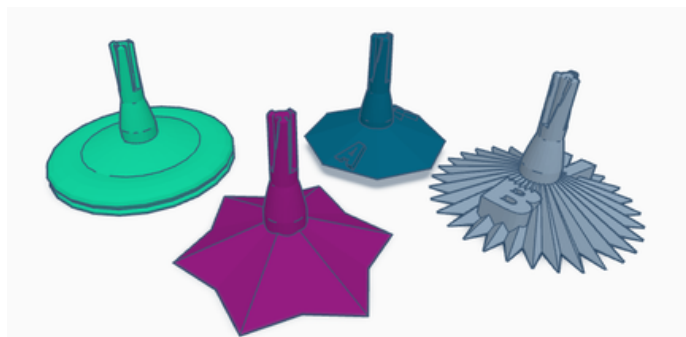
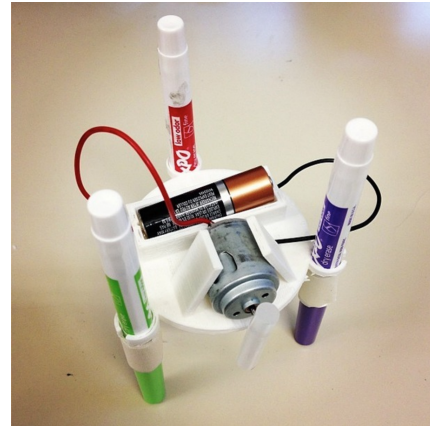
Using Prusa 3D Printers in the Classroom

Few things get my students more excited when they come into the Creation Studio than our collection of Prusa 3D printers. There is something magical in their minds about this tool that can seemingly build anything from a spool of plastic. However we have also come to see that this is probably the most challenging tool to implement in a sustainable way with a group of students - way too often it becomes a total time sink, stress creator for the teacher who spends countless hours afterschool uploading projects, dealing with the spaghetti mess of unsupported creations and seemingly endlessly repairing / recalibrating machines. Over the past 10 years we've had the chance to work with Makerbots, Enders and Flashforge with various levels of success and we have settled on the Prusa Mini+ as our bot of choice - it works consistently well for us and we now have the set of 4 pictured above. This workshop works best in our Creation Studio if you can come to our site in Williston, Vermont or if you have a Prusa or two already we certainly can help with everything including set-up, basic workflow, maintenance and project design. We typically use Tinkercad with our students since it is freely available on chromebooks and has a really nice classroom feature that makes access to student projects simple. We also find the Prusa slicer to be really dependable but since it is not accessible on a chromebook we do use an independent desktop computer and USB thumbdrives to have the students move their files there. Depending on your technology situation we certainly can work ahead of time to ensure that the workshop design and teaching matches your specific needs.

Here are a few ways we've used our Prusa Mini's in our Makerspace with the students:

- Creating personalized backpack tags - first for themselves and then as a project where they interview elementary students and design a tag for them (a nice SEL element to applying their new skill)
- Creating game pieces and elements for parallel circuit operation games - these are the small "pickup" pieces that vary according to the game's theme
- Creating small components for scribblebots such as unbalanced spinners that attach to a simple motor or lightweight support structures to replace the usual cups

- Creating personalized spinner tops that are used in a classroom battlebot competition
- Creating gamepieces for a boardgame that is part of a coding project where a microbit is coded to act as a digital dice - the focus here is on game design and the 3D printing is just one small element of the project.
- Designing and printing hallway passes for various teachers and classrooms



We love our set of Prusa Printers and do find that they are great tools for creating high quality projects consistently with students. We have found that it can simply become a production rather than a design tool, with students unwilling to make the commitment it takes to do more than just find something online (ie. thingiverse) and make it - which is why many of our projects simply use the lasercutter as one element of a much larger project rather than a one-stop shop that leads to a creation. We will talk about this as part of the workshop as we think it is perhaps the most important element of our learning about how to implement this tool in our Creation Studio and learning that we love to share.