

REQUEST FOR AFTERSCHOOL CLUB: Makerspace, Jr. Club

CLUB SPONSOR: Bitsy Galaska, Librarian, REC

DATES REQUESTED: Meeting Monday after school for six weeks, February 22, 29, March 7, 14, April 4 and 11

3:30-5:00 pm

Rationale Behind Makerspaces:

Many concepts of maker education and educational makerspaces have been briefly touched on in this article, but there are three main take-away lessons: (1) maker education inspires deeper learning, (2) educational makerspaces are based on student ownership of their learning, and (3) it is not necessary to be a technical expert to start a makerspace in your school or library. We could review those concepts here, but instead let's summarize some of the benefits of maker education spaces. Maker education fosters curiosity, tinkering, and iterative learning, which in turn leads to better thinking through better questioning. This learning environment fosters enthusiasm for learning, student confidence, and natural collaboration. Ultimately, the outcome of maker education and educational makerspaces leads to determination, independent and creative problem solving, and an authentic preparation for the real world by simulating real-world challenges. In short, an educational makerspace is less of a classroom and more of a motivational speech without words.

Excerpt from <http://www.teacherlibrarian.com/2014/06/18/educational-makerspaces/>

Motivation

- A place for students who are curious and geared toward STEAM projects
- An arena to build and learn for fun
- Expand horizons in critical thinking
- Build confidence
- Explore opportunities to develop skills for STEAM type careers

Project Outline

February 22-Coding, Hour of Code using Minecraft Puzzle or Frozen Puzzle

<https://studio.code.org/s/mc/stage/1/puzzle/1>

<https://studio.code.org/s/frozen/stage/1/puzzle/1>

February 29-Engineering-build a tower, given duct tape and a newspaper, students must build a tower that will support the weight of a paper tablet. Go over basic tips; a cylinder is the strongest structure, use multiple sheets of paper. Build a foil barge and test the strength. Build an 'copter and test the distance it can fly. Construct something from duct tape, instructions and ideas available.

March 7-Lego construction, building Tessellations and mazes and use a marble to roll through the maze.

March 14-Reverse Engineering or Tinkering-Take-Apart Day, students will take apart a hard drive and put it back together...and reboot it, other small electronics will be available for groups to take apart, investigate and try to put back together.

April 4-Simple machines...creating a mini-catapult, a whole club trebuchet, with basic physics behind the simple machines as explained by Mr. Galaska (USNA Mechanical Engineer)...then test the trebuchet

April 11-Stop Motion Animation, students use iPads to create a movie short employing creativity, music selection and found items.