



EVERYONE is an Inventor!

We have so many tools available for you to use in our STEAM Lab!

Do you have interest in these tools or ideas about what you'd like to create, but you don't know how to use these tools? That's okay! We'll show you!

S.T.E.A.M. = Science, Technology, Engineering, Arts & Mathematics

Makerspaces are creative community workspaces where people can build and experiment with art, craft and technology projects while sharing tools and ideas with other community members.

The makerspace at the Phelps Library serves as an idea lab and provides the community with the tools and technology to imagine and create in the areas of Science, Technology, Engineering, Arts and Math (STEAM). Incorporated into The S.T.E.A.M. Lab's multipurpose room, the makerspace gives the community free access to state-of-the-art tools and materials for crafts, woodworking projects, robotics, digital photography, 3-D printing and much more!

With the makerspace, the Phelps Community Memorial Library supports learning and education, inspires creativity, and nurtures opportunities for the next entrepreneur, inventor or artist to emerge. The space enhances and expands the library's existing programs for all ages. Creative hands-on programs, such as beekeeping, container gardening, woodworking 101, circuitry, and setting up a home brewery, are offered on a regular basis.

The S.T.E.A.M. Lab makerspace is open during normal Library hours. Use of the space is free, and a library card is not required.

SCIENCE

MICROSCOPE: For your science-based, up close and personal viewing pleasure, this microscope connects via USB cable to our large screen TV so that the entire room can share the view. Show the world what a strand of your hair looks like, or collect some water from the mud puddle and see what organisms are swimming in it.

BIOLOGICAL SLIDE SET: Want to see what dog saliva looks like? How about onion epidermis or house bee mouth parts? Check out our slide kit for 25 interesting sights!

BLANK SLIDES AND COVER GLASS: Discover organisms you've never seen before. See what's living amongst your cheek cells. Check out the minute details of all sorts of living and non-living things.

PIPETTES: Also known as a dropper, pipettes transport liquids from one place to another. For example, use one to pick up the water from that mud puddle and transfer it to a slide.

PHYSICS SOLAR WORKSHOP KIT: Developed in Germany by Greenpeace, this set helps you learn about solar energy. With 12 different experiments, discover how solar cells transform light into electrical energy, and use that energy to drive motors and mechanical devices.

MAGNIFYING GLASSES: Observe the tiny details of objects, or have fun and make your eye look really, really large and your friends can get a closer look!

TECHNOLOGY

3-D PRINTER: 3-D technology is taking the world by storm! You may have heard of children printing their own 3-D prosthetics or companies printing prototypes for new products. You can even print cars, houses, or chocolate boxes! The sky is the limit! While our 3-D printer is not large enough to print a car or house, use our machine to print low cost, high quality replacement household parts, prototypes, or anything you can imagine that will fit on our printer! Stop by and see how this technology works.

LITTLEBITS®: These incredible building blocks allow you to invent anything from a remote controlled vehicle to a smart home device. Build a synthesizer, and compose a song! Build the Mars Rover using the kit designed by NASA scientists! Using magnetics, you can create circuits that require no soldering, no mess, no wires, no programming, and no mistakes. LittleBits are also compatible with both Minecraft and LEGO Robotics.

MAKEY MAKEY: Ever play the bongos or the piano on bananas? You can now! What started as an academic and artistic project at MIT by two students, who believed that everyone is creative, inventive and imaginative, is now a kit that turns everyday objects into touchpads and teaches the basics of circuitry.

CIRCUIT SCRIBE® PENS & KITS: Can you say AMAZING? Circuit scribes work like markers. Imagine a silver Sharpie pen, but the lines that these pens leave behind can conduct electricity! Draw circuits, make cards that light up, make art work for your walls, and just have loads of fun while learning about circuitry.

LEGO® ROBOTICS: Whether you want to program a dinosaur to roar or walk or learn how to read process manuals to increase your success in the workplace, LEGO Robotics will teach you to build and program robots to do whatever you can dream up!

WACOM® DRAWING TABLET: Never heard of a Wacom drawing tablet? These things are so amazing! People of all ages can paint, draw, airbrush, etc. on a Wacom tablet, and then save their creation on the computer. Not sure you're an artist? Here's your chance to explore your creativity in so many ways! Whether you want to use the Wacom tablet as a drawing pad, for graphic design in Photoshop, to draw on top of a photograph, or as a writing surface to teach presentations, this versatile tool will help you get started creating and expressing yourself.

LARGE FORMAT PRINTER: The Library has a color printer than can print beautiful, professional images up from 13 inches wide and up to 50 feet long! Choose from glossy, semi-gloss, and matte papers for at a lower price than the big box stores.

FLATBED SCANNER: There are many uses for a flatbed scanner... Scan in a photograph to make a digital file, save important paper documents in your computer as PDFs, or scan objects to sell on eBay.

MINECRAFT SERVER: Join our PCML Minecraft server and participate in adventures in the Minecraft world. Build and create your own digital world and even print your creations on the 3-D printer!

SNAP CIRCUITS® SETS: Designed for beginners ages 3-103, Snap Circuits teach you how to set up circuits. Can you believe we have 750 projects for you to create? Construct circuits that make lights flash... create a motion detector... make fans turn. Come to the S.T.E.A.M. Lab, and try these and 747 other fantastically fun projects and experiments!

ARDUINO SETS: Arduinos are the ultimate tinkering tool! In simplest terms, Arduinos make electrical engineering easy, or in technical terms, they are programmable logic controllers. Don't stop reading if you have no idea what we're talking about here... Some cool things that Arduinos can be programmed to do are: act as a stop watch, be a keypad lock, control robots, test batteries, control traffic, be a GPS receiver, keep time as a clock, or even text to a mobile phone! There are pre-coded projects if you want them, or you can be creative and code an Arduino to do anything you can dream up! And you can do all of this at the Library!

35MM FILM TO DIGITAL CONVERTOR: Have some old slides sitting in a box in your house? Bring the slides to the Library and use this machine to convert the slides to digital images. Once you have the digital image, the image will be preserved and not degrade like the slide, you can share it with friends and family via email and social networks. Protect and preserve your family history!

LAPTOPS & TABLETS: From email to using open-source software, discover the world with our laptops and tablets. Visit Thingiverse.com to find tens of thousands of things to print on the 3-D printer, participate in our Minecraft

server, reconnect with a former classmate via email, apply for a job, or simply learn the basics of computing. The world is your oyster, and the Library has the technology to assist you!

ENGINEERING

DRILL PRESS & DRILL BITS: Basically, a drill press is essential for drilling holes of all sizes. Whether you want to make beads for jewelry making or pre-drill holes for that carpentry project, you can do it all here in the S.T.E.A.M. Lab.

WOOD LATHE: The wood lathe will help you turn wood into cylindrically symmetric object. Say what? That means you can bring in a block of wood, and turn it into a bowl, a pen, jewelry, a nutcracker, a box, a pencil holder, and so much more!

SCROLL SAW: A scroll saw is machine with a fine blade well suited for working with thin wood. You can create objects such as name tags, miniature furniture, clocks, artwork... a search for "scroll saw projects" on Pinterest will have you running to the Library to create something!

MITRE BOX (NOT POWERED) AND SAW (POWERED): Think angles when you think of a mitre saw... Whether you're cutting new molding for that living room renovation, taking some old barn wood and turning it into a frame, or simply cutting a piece of wood to size, we have a mitre saw waiting for you to use in the S.T.E.A.M. Lab.

DREMEL® TOOL: Oh, the Dremel... Where to begin? Drill holes in stones and shells and sea glass, etch egg shells or terracotta garden pots, carve book art, engrave silverware, make wood buttons or a spoon coat rack, burn designs into wood, create pendants or wall art... We could go on and on. What would you like to make in the S.T.E.A.M. Lab?

SOLDERING STATION: A soldering iron gets really hot. As in, really, REALLY 800 degrees Fahrenheit hot. Its job, in the most general terms, is to transfer heat and join things together with various types of solder. Solder is usually made from various metal alloys. It may sound scary and dangerous, but no worries. It's not particularly difficult. With a steady hand, there are many applications: from electrical work to jewelry making, to stained glass and enameling, to making Christmas ornaments and costumes. Pinterest is a great place to check out for more interesting and creative ideas.

HAND TOOLS (INCLUDING HAMMERS, WRENCHES, SCREWDRIVERS, HACKSAWS, & MANY MORE): You name it, you can make it or fix it in the S.T.E.A.M. Lab! Tighten & turn things, bang or cut things, hold and measure things... Chances are excellent that we have the tools for you to accomplish your goal!

ARTS

SEWING, QUILTING, AND EMBROIDERY MACHINES: We have all kinds of sewing machines to fit your needs and interests! Repair your clothing or household linens, create new ones, or transform your imagined artwork into cloth. Plus, we have storage space for you to keep your project while you're working on it. No need to lug your materials back and forth from the lab!

JEWELER'S TOOLS: Make a necklace or earrings, repair your broken jewelry, experiment with beads or wire, or just see where creativity takes you! We have all the tools you'll need to create beautiful, wacky, and/or unique jewelry.

METAL PUNCH SET: We have an alphabet and character set to personalize your leather projects. Claim your leatherware as your own by adding your name or monogram. Stamp soft metals with a special message.

STAPLE GUNS: How would you like to reupholster that old chair in the attic? Constructing a canvas for that painting you have in your head? The staple gun saved Library staff so much time while they were constructing their parade float for Sauerkraut Weekend. What other ways would you use a staple gun?

EASELS: Set up your canvas or drawing paper, and let your creativity flow. Feel free to take the easel anywhere in or around the Library, wherever the inspiration strikes!

CUTTING MATS: These self-healing cutting mats are a huge 24" x 36" to accommodate your large projects! Hand-trim your scrapbooking, photograph, bookbinding or other paper project. We have the cutting tools you'll need as well. All you have to do is bring the paper and your ideas.

CRICUT® & DIES: A Cricut is a machine that uses dies to cut preprogrammed shapes for all of your scrapbook needs. We have a nice selection of various shapes and sizes, so please come check out all that our Cricut can do.

PAPER CRAFTING TOOLS: We're talking X-acto knives and blades, bookbinding tools, bone folders, tape, and all the space to bring your papercraft to life. Whether you want to create a pop-up book with some awesome paper engineering or make a scrapbook of your family and friends, we have the tools you'll need for all paper craft projects, from start to finish!

24" BOARD SHEAR: Carefully trim your children's school photos, cut large format paper, shear mat board, have a scrapbooking frenzy... there are so many uses for a large board shear!

MAT CUTTER: Did you find a lovely poster, create a fabulous piece of artwork, or take a winning photograph? Let's hang it up on the wall! Bring in the color mat board you'd like to use, and we have a mat cutter for you to make custom mats for your images.

NIKON® DIGITAL CAMERA, WITH 18-55MM LENS AND 55-200MM TELEPHOTO LENS & TRIPOD: Ever wish you could capture that beautiful moment in time? Learn how to take professional photos, develop an artistic eye, and simply try out photography. We have many resources for you here at the Library!

MATHEMATICS

MUSICAL KEYBOARD: Practice playing the piano. Learn chords and explore music composition. Read music. Discover the mathematical structure of music. Have the best jam session of your life.

CALCULATORS: Perform basic calculations. Complete appropriate homework assignments. Turn the calculator upside down and see what words you can make. Find new ways to use a calculator.

RULERS OF EVERY VARIETY: Measure twice, cut once. Cut straight lines. See if your foot is the same length as the distance between your wrist and elbow. Find the perfect angle. Any other straight line or length application.

What do YOU want to create?

You dream up the ideas...

We'll help you bring them to life!

