**Suggested Use**

These references are all valuable supports for your Maker Day. You may want to show the Apollo 13 videos as support for lateral thinking – thinking that prompts different approaches to problem solving.

**An Annotated Reference List**

**Videos to Watch**

Apollo 13 – Clip from the movie – Square peg in a round hole

<http://www.youtube.com/watch?v=C2YZnTL596Q>

The real story – Apollo 13

<http://www.youtube.com/watch?v=69LDSL-9--g>

**Software to Explore**

Autodesk 123D (<http://www.123dapp.com/>)

Free 3D modeling software that is integrated with content and fabrication services. It also has links to projects, patterns, models.

## Autodesk Inventor (<http://www.autodesk.com/products/autodesk-inventor-family/overview>) The professional, commercial version of Autodesk 123D. Inventor® 3D CAD software offers an easy-to-use set of tools for 3D mechanical design, documentation, and product simulation. Digital Prototyping with Inventor helps you design and validate your products before they are built to deliver better products, reduce development costs, and get to market faster.

Lego Building Software (<http://www.techsupportalert.com/content/best-free-lego-building-program.htm>)

Logo Software (<http://el.media.mit.edu/logo-foundation/products/software.html>)

The original turtle programming software.

## Maya (<http://www.autodesk.com/products/autodesk-maya/overview>)

## Maya® 3D animation software offers a comprehensive creative feature set for 3D computer animation, modeling, simulation, rendering, and compositing on a highly extensible production platform. Maya now has next-generation display technology, accelerated modeling workflows, and new tools for handling complex data.

Scratch (<http://scratch.mit.edu/>)

With Scratch, you can program your own interactive stories, games, and animations — and share your creations with others in the online community. Scratch helps young people learn to think creatively, reason systematically, and work collaboratively — essential skills for life in the 21st century. Scratch is a project of the Lifelong Kindergarten Group at the MIT Media Lab. It is provided free of charge.

**Hardware to Explore**

Arduino (<http://www.arduino.cc/>)

Arduino is an open-source electronics prototyping platform based on flexible, easy-to-use hardware and software. It's intended for artists, designers, hobbyists and anyone interested in creating interactive objects or environments.

littleBits (<http://littlebits.com/>)

#### littleBits is an opensource library of electronic modules that snap together with tiny magnets for prototyping, learning, and fun.

Leap Motion ([www.leapmotion.com](http://www.leapmotion.com))

Leap Motion, Inc. is a company that manufactures and markets a computer hardware sensor device that supports hand and finger motions as input, analogous to a mouse, but requiring no hand contact or touching.

Lego Mindstorms (<http://www.lego.com/enus/mindstorms/?domainredir=mindstorms.lego.com>)

McMaster ([http://www.mcmaster.com/#](http://www.mcmaster.com/))

Site for all types fasteners

**Sites to Check Out**

Adafruit (<http://www.adafruit.com/>)

Site for Adruino hardware and project ideas.

Etsy ([www.Etsy.com](http://www.Etsy.com))

Shopping site for a range of arts and crafts and collectables from global entrepreneurs

Instructable ([www.Instructables.com](http://www.Instructables.com))

A site to share what you make with others. Instructables has directions for a range of projects.

Invent to Learn (<http://www.inventtolearn.com/>)

Official site of the book, *Invent to Learn.* [*http://www.inventtolearn.com/resources/*](http://www.inventtolearn.com/resources/) *lists a range of resources mentioned in the book*

Khan Academy (<https://www.khanacademy.org/>)

A site to learn – just for free. The library of content covers math, science topics such as biology, chemistry, physics, and the humanities with playlists on finance and history.

Kickstarter ([*www.****kickstarter****.com*](http://www.kickstarter.com))

*Kickstarter* is the world's largest funding platform for creative projects.

Lynda ([www.Lynda.com](http://www.Lynda.com))

Subscription fee to learn software skills

SpakrFun (<https://www.sparkfun.com/>)

Online retail store that sells the bits and pieces to make your electronics projects possible

Thinkgiverse (<http://www.thingiverse.com>)

Thingiverse is a website dedicated to the sharing of user-created digital design files. Providing primarily open source hardware designs licensed under the GNU General Public License or Creative Commons licenses, users choose the type of user license they wish to attach to the designs they share. 3D printers, laser cutters, milling machines and many other technologies can be used to physically create the files shared by the users on Thingiverse.

**Toys to Play Use**

Erector Sets (<http://en.wikipedia.org/wiki/Erector_Set>)

An **Erector Set** (the trademark has always been "ERECTOR") is a brand of metal toy construction sets, originally patented by Alfred Carlton Gilbert and first sold by his company, The Mysto Manufacturing Company of New Haven, Connecticut in 1913. In 1916, the company was reorganized as the A.C. Gilbert Company. Erector consists of various metal beams with regular holes for assembly using nuts and bolts. Other mechanical parts such as pulleys, gears, wheels, and small electric motors were also part of the system. What made Erector unique was the ability to build a model, then take it apart and build something else (over and over).Erector quickly became the most popular construction toy in the United States,most likely because it was the only construction set at the time to contain a motor. Erector was commonly referred to as an *Erector Set*, though *erector set* has become somewhat of a generic trademark denoting a variety of construction toys, irrespective of brand. The trademark for ERECTOR is owned and marketed by Meccano. It is still available at Toy R Us

**Things to Read**

## Invent to Learn - Making, Tinkering, and Engineering in the Classroom (<http://www.inventtolearn.com/>)

**By Sylvia Libow Martinez & Gary Stager**

Using technology to make, repair, or customize the things we need brings engineering, design, and computer science to the masses. Fortunately for educators, this maker movement overlaps with the natural inclinations of children and the power of learning by doing.

Make Magazine (<http://makezine.com/>)

Designed after Popuar Mechanics, Make Magazine is the go to site for all things Maker – from ideas to tools.

Wired magazine (<http://www.wired.com/magazine/>)

A subscription magazine (digital and print) that reports on emerging tools, technologies and trends. The recent issue has a feature on education and fostering the next Steve Jobs (<http://www.wired.com/business/2013/10/free-thinkers>)

Yes & Yes Designs

**Places to Go**

MIT Center for Bits to Atoms (<http://cba.mit.edu/about/>)

MIT's Center for Bits and Atoms is an interdisciplinary initiative exploring the boundary between computer science and physical science. CBA studies how to turn data into things, and things into data.

MIT Media Lab – Lifelong Kindergartner (<http://llk.media.mit.edu/>)

The home of Scratch – Mitch Resnick and his team design tools and software to support design, creation and learning.

Stanford’s Hasso Plattner Institute of Design – d.school (<http://dschool.stanford.edu/>)

Home of design thinking … The school was founded by Stanford mechanical engineering professor David Kelley in 2004. It is a joint project between the university and the Hasso Plattner Institute of University of Potsdam in Germany.Like some other design schools, it integrates business and management training into more traditional engineering and product design education.

Maker Space in the Faculty of English – Humanities - <http://maker.uvic.ca/>

The Maker Lab in the Humanities at the University of Victoria opened its doors in September 2012 under the direction of Jentery Sayers (Assistant Professor, English). With research priority areas in physical computing, desktop fabrication, versioning, and scholarly exhibits, it intersects cultural criticism, computation, and comparative media studies with tacit learning, multimodal communication, and experimental methods. As the Lab’s name suggests, its design is anchored in blending a humanities research lab with a collaborative makerspace—a design that affords its team of graduate students and faculty opportunities to build projects through various modes of knowing by doing (e.g., programming, markup, data modeling, 3D printing, speculative design, prototyping, and new media production). - See more at: http://maker.uvic.ca/about/#sthash.FkFnrTU0.dpuf