

## Webinar Resources: Equity in Making and Tinkering

The following resources were generated by both audience members and webinar speakers. If you have additional resources you'd like to share with the community, please email them to Melissa Ballard [mjballard@afterschoolalliance.org](mailto:mjballard@afterschoolalliance.org). We will be developing a webpage (on our new website!) all about making and tinkering in afterschool.

### **Resources**

- [Equity in Out-of-School STEM Learning: Professional Development Needs and Strategies](#) from the [Research + Practice Collaboratory](#) led by the Exploratorium
- Coming soon: A book, *Start Making!*, from the [Computer Clubhouse](#) focused on 10-14 year olds from underserved communities. Sign up for resources [here](#).
- Article: [Making MAKEing More Inclusive](#)
- Video: Leah Buechley's talk "[Thinking About Making](#)"

### **Activities**

- [Community Science Workshops](#)
- Exploratorium's [Tinkering Studio](#)
- [DIY.org](#)
- [Maker Education Initiative](#)
- [Book series](#) from [Creativity Labs](#) @ Indiana University includes projects and curriculum for e-textiles and computer programming.

### **Papers & Research**

- Connected Collection on [Tinkering in STEM Education](#) from the [Relating Research to Practice](#) project
- Connected Collection on [Equity in Science Education](#) from the [Relating Research to Practice](#) project
- Chapter 11 on [Diversity & Equity](#) in the National Research Council's "[A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas](#)"
- STEM Teaching Tool #15: [How can we promote equity in science education?](#) from the University of Washington's [Institute for Science + Math Education](#) in partnership with the [Research + Practice Collaboratory](#)
- [informalscience.org](#) from the Center for Advancement of Informal Science Education (CAISE) is a central portal to project, research and evaluation resources from the informal STEM education community (especially federally funded projects).

- [Creativity Labs](#) @ Indiana University led by Dr. Kylie Peppler focuses on developing computational tools that support learning by leveraging youths' interests in digital culture, design, and making. The Labs have several funded initiatives of interest—see [Make to Learn](#), [Textile Messages](#), [Scratch for Media Art Making](#) and the [Open Portfolios](#) project with Maker Ed.
- The Vermont Afterschool Network has been working with several researchers in WI, IN and IL. Contact Tracy Truzansky for more info - [tracytruzansky@vermontafterschool.org](mailto:tracytruzansky@vermontafterschool.org).

### **Outcomes & Evaluation**

- The Computer Clubhouse (Museum of Science, Boston) is developing evaluation tools for making in informal learning spaces. The Clubhouse defines making in terms of five creative competencies which came from youth development outcomes, not just literacy with technical tools. Sign up for access [here](#), and see their [interim evaluation report](#).
- California Tinkering Network's [2013 evaluation report](#) from SRI International. PDF [here](#).
- The [Activation Lab](#) is conducting research on interest and engagement in STEM learning and has developed several [tools](#) you can use. They can also create a [custom tool](#) for you.
- [Creativity Labs](#) @ Indiana University has done research on appropriate outcomes via their [Make to Learn](#) initiative.
- There is a lot of work being done with digital badges as a way to document student learning. [Grants to statewide afterschool networks](#) are in the second round!

### **Events & Conferences**

- [Vermont Afterschool, Inc.](#) is hosting a Tinkering Symposium for Afterschool on October 22, 2015. Topics include: equity and access, facilitating discourse with students, and how to measure learning (especially without using the typical pre-/post- survey). Contact Tracy Truzansky for more info - [tracytruzansky@vermontafterschool.org](mailto:tracytruzansky@vermontafterschool.org).
- [Association of Science-Technology Centers](#) (ASTC) – October 17, 2015 in Montreal. Join the [Community of Practice](#) for conversations and tips year-round.
- [International Society for Technology in Education](#) (ISTE)

### **Other Making/Tinkering programs**

[Computer Clubhouse](#) (international, flagship in Boston)

[Digital Harbor Foundation](#) (Baltimore) – provides professional development!

[FutureMakers](#) (DC/Baltimore)

[Mt. Elliot Makerspace](#) (Detroit, MI)

[Leonardo's Basement](#) (Minneapolis, MN)

[THINK Together](#) (California, statewide)

[DIY Girls](#) (Los Angeles, CA)