February

17

2015

Make It at the Library 2015

MAKE
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WHERE IDAHO
MAKERS MEET

Training Purpose:

Provide participants with the knowledge, resources, & skills to implement & evaluate formal & informal teen maker programming.

Desired Outcomes:

By the end of the training, participants will:

1. Be knowledgeable about the maker movement, making, and design thinking.

2. Demonstrate the ability to create formal and stealth programs with the provided materials and curriculum.

3. Be knowledgeable of tools to create basic electronics and Arduino projects.

4. Demonstrate the ability to facilitate and guide informal learning within the Makerspace.

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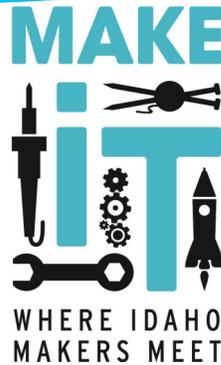
Agenda

Time		
8:30 a.m.	Breakfast & Networking	
9:00 a.m.	**Welcome & Housekeeping Introductions**	Activity
9:30 a.m.	Workshop Overview Project - goals, objectives, funding	Discussion
9:45 a.m.	**Activity Stations: Take Apart Circuit Boards Design Challenge**	**Activity**
11:45 a.m.	Group Discussions on Activity Stations	Discussion
12:00 p.m.	**Lunch – Videos, Networking**	
1:00 p.m.	Maker 101	Discussion
1:45 p.m.	**Design Thinking & how does it tie into Making?**	**Discussion**
2:15 p.m.	Outreach	Discussion
2:45 p.m.	**Break**	
3:00 p.m.	Documenting Your Project Social Media Available Resources	Discussion
3:45 p.m.	**Partnerships and Collaboration**	**Discussion**
4:45 p.m.	Review of Day Plus/Delta	Discussion

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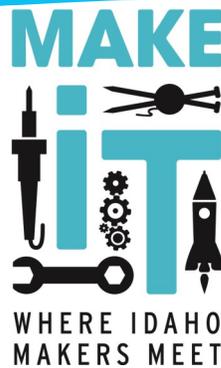
Facilitators:
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Nick Raymond—Maker Media
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Adam Day—Twin Falls Public Library
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2014 Cohort Libraries:
Aberdeen District Library
♦ Stephanie Adamson
Buhl Public Library
♦ Amanda Hatfield
East Bonner County District Library
♦ Morgan Gariepy
Jerome Public Library
♦ Linda Mecham
Portneuf District Library
♦ Amanda Bowden
Twin Falls Public Library
♦ Amy Mortensen

2015 Cohort Libraries:
Bear Lake District Library
♦ Brandee Wells
♦ Mary Nate
Burley Public Library
♦ Julie Woodford
♦ Linda Barney
Caldwell Public Library
♦ Fiona May
♦ Abraham Valadez
DeMary Memorial Library
♦ Sharon Kimber
♦ Shambry Amero
Marshall Public Library
♦ Jamie Bair
♦ Kath Ann Hendricks
North Bingham District Library
♦ Jacqueline Wittwer
♦ Kaylene Christiansen
Payette Public Library
♦ Deleice Aard
♦ Erin Haley
Shoshone Public Library
♦ Clay Ritter
♦ Sarah Stowell
Centennial High School Library
♦ Gena Marker
Heritage Middle School Library
♦ Amy Armstrong

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Agenda

Time	Activity	Type
8:00 a.m.	**Full Breakfast and Networking**	
8:30 a.m.	Review basic electronics document Review breadboarding document Review introduction to Arduino documents	Presentation Activity
9:00 a.m.	**Electronic components and Breadboarding** **Voltage and current** **Resistors, capacitors, inductors, diodes, LEDs, switches, transistors** **Layout of a breadboard (nomenclature and function)** **Different types and size of breadboards** **Project 1 – LED and a switch (push button vs toggle switch)** **Project 2 – 555 timer w/touch paint switches (monostable mode)** **Project 3 – 555 frequency generator (astable mode, with motors and buzzer)**	**Activity**
12:00 p.m.	Lunch	
12:25 p.m..	**Discussion**	**Discussion**
1:00 p.m.	Arduino Introduction to Arduino (nomenclature and function) Programming environment (IDE 1.6.0) Project 0: Hook up Arduino to breadboard (blink LED–powered by Arduino) Uploading pre-programmed code (Fade.h sketch) Arduino code layout and general architecture of Sketches Project 4: Writing your own code (detect input from push button, turn on LED) Project 5: Control color of RGB LED within code Project 6: Read force sensor (analog inputs and the Serial Monitor) Project 7: Control brightness/color of LED w/potentiometer (input + output)	Activity
4:45 p.m.	**Questions, Plus/Delta**	**Discussion**
5:00 p.m.	End of Day	

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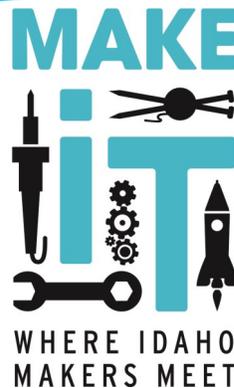
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Nick Raymond—Maker Media
nickraymond99@gmail.com
Adam Day—Twin Falls Public Library
aday@twinfallspubliclibrary.org

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Time		
8:00 a.m.	Full Breakfast and Networking	
8:30 a.m.	Review of Day Two Terms, Concepts, Competency	**Activity**
9:00 a.m.	Intermediate Arduino Projects (all code to be provided, will not write code) Introduction - using other people's code for your projects Introduction - understanding Arduino library files **Project 8:** Resistive touch sensors (similar to Makey Makey board) **Project 9:** Capacitive touch sensor (similar to Bareconductive board) **Project 10:** Control position of one servo motor (relay & power electronics) **Project 11:** Control position of two servo motors with potentiometer	Activity
12:00 p.m.	**Lunch**	
12:30 p.m.	Review of content—Move forward or review?	Discussion
1:00 p.m.	Wearables and e-textiles (remaining time) Conductive thread and paint – how it can be used in projects Gemma microcontroller – (nomenclature and functions) **Project 12**: Conductive thread and LEDs (how to program Flora) **Project 13**: Paint conductive wires onto fabric and hook up to Flora **Project 14**: Flora + tilt sensor to turn on/off LED (build of previous project)	**Activity**
3:00 p.m.	Closing Overview Q and A Evaluations completed	
3:45 p.m.	**Load Cars**	

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