Tinker, Tailor, Librarian, Spy

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Complete toolkit available at http://bit.ly/TinkerWorkshop

What are we doing?!

15 minutes @ each station
20 minutes sharing @ end

Stations:

- Design thinking/ UX
- VR (Virtual Reality)
- Robots!
- Circuits

Tinker, Tailor, Librarian, Spy!

Circle which table you're at: **Robots!**   **Circuits**   **UX**   **VR**

Tinker with the tools!

- What was the first thing you thought to yourself when you saw this station?

- Now, take some time with your teammates to familiarize yourselves with the tool(s).
- What will you name your program that features this station?

- I like…….. (see….you actually like this stuff!)

How will you **tailor** to your space?

- What sort of space would you need? Do you have access to that type of space? If not, where in your community does?

- Who will you partner with in your community on this program?

How will this work at your **library?**

- Who will you target this program to?

- How will this program support your library's mission?

- Will this program require purchasing other supplies?

Any ideas you **spied?**

- Program idea 1:

- Program idea 2:

- I wish…….. (always room for improvement!)

- The last thing I thought to myself before moving stations…

Getting Started with Design Thinking/ User Experience (UX)

From http://designthinkingforlibraries.com

Design thinking is a creative approach, or a series of steps that will help you design meaningful solutions for your library. If you think about it as a Venn diagram, design thinking solutions exist at the intersection of three factors: desirability, feasibility, and viability. In other words, when the solution is desirable, it's financially viable, and it's technologically feasible, innovation happens where these factors overlap.

Want to dig deeper? Check out the "Thinking Like Your Users Kit" developed by Amy Vecchione, amyvecchione@boisestate.edu and Deana Brown, deanabrown@boisestate.edu at https://works.bepress.com/deana_brown/14/
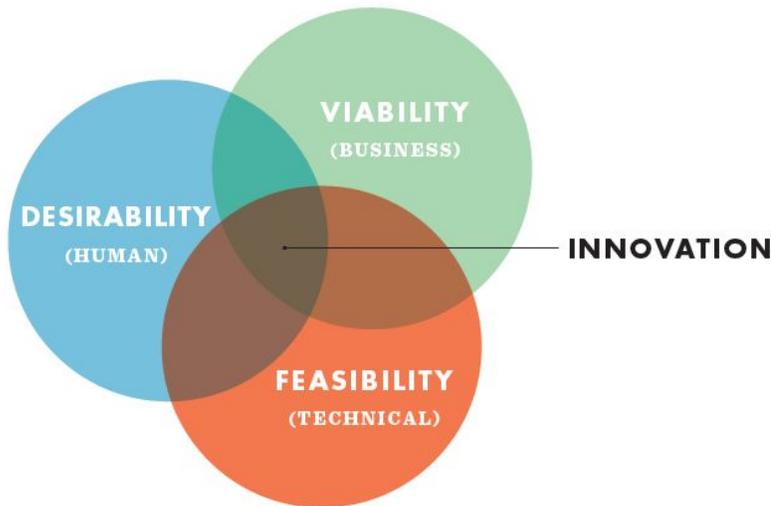
Human Centered Design Thinking Fosters
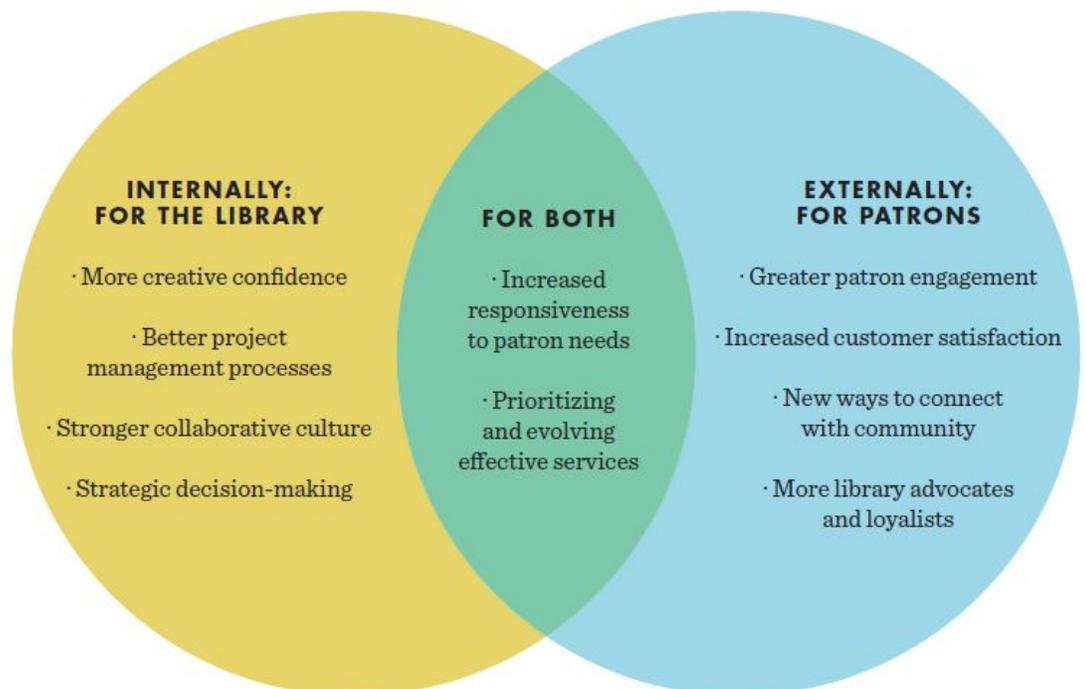
Using Design Thinking to Brainstorm Human Centered Solutions

1 Description - Briefly describe something you regularly see your users struggling with

2 Think like your user - What do you think they're feeling when they face this struggle? How have you seen them work through it?

3 Share - Once you have your description, take a couple of minutes to share with someone else in your group.

4 Trade - Give your sheet to the person you shared your description with.

5 Design - Imagine there are no limitations. Now, create a solution that will "surprise and delight" your partner's users, and address their struggle.

6 Read & Reflect - Read your partner's solution. What would be the first step in trying this solution? What do you need to achieve this first step?

WHAT IS IT?

LEAP MOTION

leapmotion.com

The Leap Motion Controller captures
the movement of your hands and fingers
so you can interact with your computer in a whole new way. Swipe, pinch or grab in the air and magically see your actions on your screen.

WHAT DOES IT COST?

$79.99 SRP (Amazon list price: $59.98)

TRY IT OUT

1. Open the LEAP PLAYGROUND app.

2. Place hands above the Leap Motion Controller. You'll be able to see your hands on the screen.

3. Press any key to continue.

4. Pick up one of the colored cubes and place it on the robot body.

5. At any time you can press a key to continue.

6. Pluck the petals from the flower and drop them into the water below.

7. Exit the program and, if you have time, select another app to test.

WHAT IS IT?

VIEW MASTER
view-master.com

Be surrounded by 360-degree views with this Virtual Reality device. No matter which way you look, you'll find the image changes around you,above you and behind you, as if you were really there.

WHAT DOES IT COST?
$17.99 and up from online vendors (Amazon, Target)

TRY IT OUT

1. Press the lever on the top of the Viewmaster to open.

2. Turn on iPod and open the Dive City Coasters app.

3. Press Play, make sure 3D box is checked.

4. Press Play again and close the Viewmaster.

5. Look through the viewmaster. Move your head side to side, look up and down, and turn yourself around to see the virtual reality.

6. If you have time, select a Viewmaster destinations app.

7. Click the lever when you see the i symbol to read about the location.

Click the lever when you see the target symbol to move to a new area of the location.

WHAT IS IT?

EDISON ROBOT
meetedison.com

This LEGO-compatible robot uses barcodes and an infrared light remote to perform programmed tasks. You can also program Edison using drag and drop coding or python and then transfer programming using the audio-jack compatible cord.

WHAT DOES IT COST?
$49.99 (bulk discounts available)

TRY IT OUT

1. On the Edmat, position Edison to the right of the Clap controlled driving barcode —wheels should be at the far right.

2. Press the round button three times. Edison will read the barcode.

3. Clap your hands near Edison. It should turn to the right.

4. Clap your hands twice near Edison. It should drive forward about 1 foot (don't drive it over the edge of the table).

5. If you have time, try the Bounce in Borders barcode on the Edmat.

6. You can also use two Edisons and try the Sumo Wrestling barcode.

WHAT IS IT?

OZOBOT
ozobot.com

A small robot that can follow programs created using color codes (hand drawn, pre-printed, and in-app) as well as drag & drop Blockly coding (not available on all models).
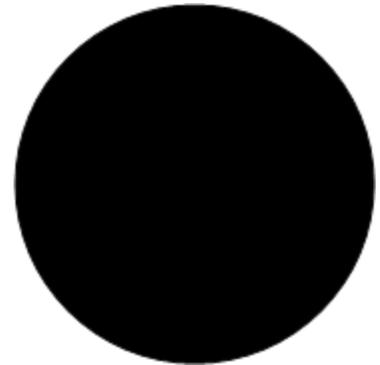
WHAT DOES IT COST?
$49.99 (starter kit; other models available)

TRY IT OUT

1. Hold down the power button on Ozobot's left side for 2 seconds until the LED light turns white.

2. Place Ozobot in the middle of this black dot.

3. Ozobot will then blink blue, move forward, and then blink green.

4. If Ozobot blinks green, it has successfully calibrated. Start over if Ozobot blinks red.

5. Place Ozobot on one of the pre-printed color path cards and press the power button. The colors will program Ozobot to move in specific ways.
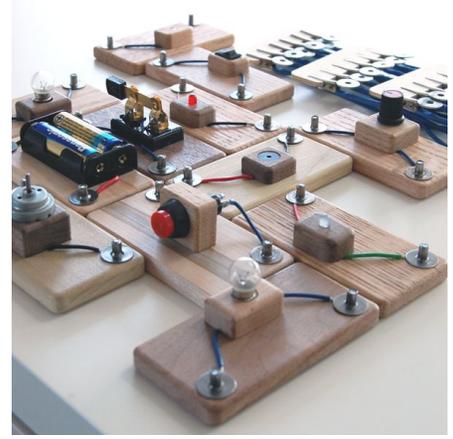
6. If you have time, try drawing a color path using the markers or draw a path on the iPad's app.

WHAT IS IT?

CIRCUIT BLOCKS
cippgh.org/circuit-blocks

Circuit blocks are electrical components set in/on wooden blocks. Circuit block sets include several different types of switches, lights, motors, buzzers, wiring, and a power source.

WHAT DOES IT COST?
$79.99 (medium set, other sets available)
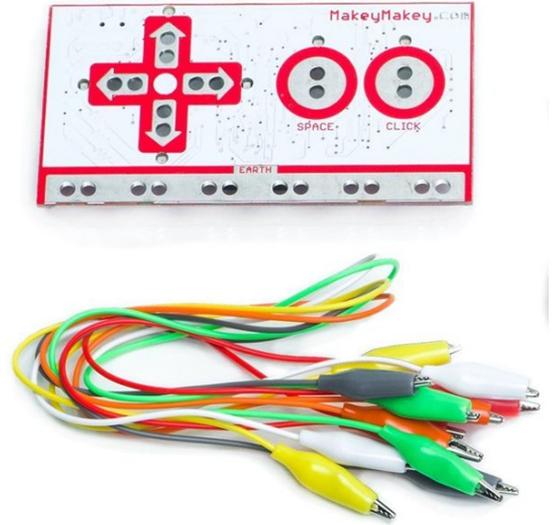
TRY IT OUT

1. Connect different components using the alligator clips.

2. Make sure you include the power source, a switch and an action block (light, buzzer, motor).

3. Did the action block work when the switch was turned on?

4. If not, what did you need to fix to make the block work?

5. How many action blocks can you use at the same time?

6. What happens if you switch the wires around their connection points?

7. There is a multi-color LED block. Can you figure out how to make the light shine red and switch it to shine green?

WHAT IS IT?

MAKEY MAKEY
makeymakey.com

MaKey MaKey is a printed circuit board designed to communicate with your computer, and it can send keypresses, mouse clicks, and mouse movements. Translation: make a keyboard out of virtually anything.

WHAT DOES IT COST?
$49.95

TRY IT OUT

1. Look at the circuit board. Note what alligator clip color corresponds with each of the arrow keys and space bar.

2. In one hand, hold the metal end of the black alligator clip (this will ground the circuit).

3. Then touch the keys (conductive material connected by alligator clips). This completes the circuit so the key will work.

4. "Mary Had a Little Lamb" is played with only four notes. Can you play it?

5. Swap out different materials for the keys. What works and what doesn't?

6. If you have time, click on the other tab in the browser and play Flabby Physics. All you will need is the space bar.

7. Add more people to the circuit. Touch hands to complete the circuit.

MORE RESOURCES

SPLAT Idea Lab Resources
http://splat.lili.org/splat-resources/whats-in-the-idea-labs/

LEAP MOTION
Video Demo, https://www.youtube.com/watch?v=_d6KuiuteIA
Controlling a Quadcopter http://tinyurl.com/mag5uaj

VIEWMASTER
Viewmaster Apps available through the App Store and Google Play
Dive City Rollercoaster app available through the App Store and Google Play

OZOBOT
Video Demo, https://youtu.be/m5d4iXGbIGs
Workshops, http://portal.ozobot.com/lessons/type/workshop
Classroom Applications, http://portal.ozobot.com/lessons/type/classroom-application

EDISON
Lesson Plans, https://meetedison.com/robotics-lesson-plans/
Control, https://meetedison.com/robot-activities/youre-a-controller/
Program, https://meetedison.com/robot-activities/youre-a-robot-programmer/

CIRCUIT BLOCKS
Conductivity, http://www.ciplearningstore.com/conductivity
Switches, http://www.ciplearningstore.com/invent-a-switch

MAKEY MAKEY
Getting started guide, http://makeymakey.com/howto.php
Lesson plans, http://makeymakey.com/lessons/
Piano used in workshop, https://scratch.mit.edu/projects/10836772/
Scratch and Makey Makey games, https://scratch.mit.edu/studios/223260/
Makey Makey instruments, https://scratch.mit.edu/studios/223257/