

# OSHW belongs in YOUR MUSEUM

It's not about hacking together old computer parts. But it's interesting that people seem to think that it is. Think of it as another weapon in the fight against obsolescence. Use this guide to add Open Source Hardware to your toolkit of open source materials and techniques.

...or gallery, library, archive, etc. etc. etc.!  
It's ALREADY being used in many other domains, from farming to scientific research. Let's figure out how you can use it, too!

## START HERE:

Your museum has PLENTY of resources for trying new technology...

...and you have experience with OSHW

AIN'T I BALLER?

It's ok! Check out our paper...

...but you have LOTS of ideas to improve the visitor experience!

UM, STILL NO

YES!

IDEAS LIKE...

1 TRACKING VISITORS

2 PLAYING AUDIO/VIDEO

3 MAKING RESPONSIVE EXHIBITS

4 ADDRESSING ACCESSIBILITY

\* If you meet the oshwa.org guidelines, tag your hardware with the OSHW mark:  open source hardware

REALLY???

Yes!

AND you can brand it as OSHW\*

TELL ME HOW

BUT... WHY?

Because it helps out other museums, supports the community, AND fits with your ethics & charter.

(We talk about it a lot in our paper.)

Did you share your designs?

YES, OF COURSE!

You are so awesome.

(Can we be friends?)

Does anyone else in your museum want to try with you?

YES

I DON'T KNOW

There is a learning curve. Come out time for it - you can do it!

...MAYBE?

TOTALLY

AWWWW YESSSS you've got this now!

Power?

simple IR tracking

camera tracking

simple video player

accessible sound player

data-driven lights

printing OSHW boards

MORE! tutorials & resources

Say hello!

Miriam Langer

Jason Alderman

Justisomeggy

where do you begin? ask yourself...

What do you want to sense? (These names can help you search!)

How smart should it be?

How do you want it to react?

blob-tracking? RFID? beacons? IR sensing?

HAPP button? floor switch? IR sensing? touch capacitance?

LiN battery 9V battery 5-12V DC wall adapter

Processing can be used to let your computer talk to a running Arduino, or to program a Raspberry Pi.

- simple IR tracking**
- PARTS LIST
- Arduino Uno (or Genuino)
  - USB A to B cable
  - IR Sharp or PIR sensor
  - 10 microFarad capacitor
  - 8-9V DC Power supply
- (-800) \$7.95 COST \$15 DIFFICULTY

- camera tracking**
- PARTS LIST
- Raspberry Pi 2 or 3
  - MicroSD card\*
  - PiCam
  - Mini USB cable & 5-9V micro USB power supply
- (\*Look for an 8GB MicroSD that's Class 10 - it's faster!)
- (-907) \$7.95 COST \$15 DIFFICULTY

- simple video player**
- PARTS LIST
- Raspberry Pi (any model)
  - MicroSD card
  - HDMI cable
  - Mini USB cable & 5-9V micro USB power supply
  - Pico projector (\$180-\$500)
- (-807 + projector/display) \$7.95 COST \$15 DIFFICULTY

- accessible sound player**
- PARTS LIST
- Arduino Uno
  - USB A to B cable
  - MP3 or Wave Shield
  - SD card
  - Capacitive touch sensor
  - 8-9V DC Power supply
- (-878) \$7.95 COST \$15 DIFFICULTY

- data-driven lights**
- PARTS LIST
- Arduino Uno
  - USB A to B cable
  - 1-meter Nootpixel strand
  - 1 photocell (or thermistor)
  - Selection of 500-1K Ohm resistors
  - 1000 microParad capacitor
  - power supply or batteries (5V/ 9A)
- (-1100) \$7.95 COST \$15 DIFFICULTY

- printing OSHW boards**
- Making your own printed circuit boards is less expensive than ever. Companies like...
- Express PCB [expresspcb.com](http://expresspcb.com)
  - OSH Park [oshpark.com](http://oshpark.com)
- ...print in the US & turn around in a week.

- MORE! tutorials & resources**
- Electronics can be tricky; while the internet IS useful, you should doublecheck tutorials (or StackOverflow answers) that don't make sense to you. Some trustworthy sources we recommend:
- [arduino.cc](http://arduino.cc)
  - [learn.adafruit.com](http://learn.adafruit.com)
  - [sparkfun.com/tutorials](http://sparkfun.com/tutorials)
  - Make: projects (+books)

- Say hello!** (We got excited about OSHW!)
- Miriam Langer [mlanger@nhu.edu](mailto:mlanger@nhu.edu) @arduinogirl
- Jason Alderman [jason@cloudchamber.cc](mailto:jason@cloudchamber.cc)
- Justisomeggy @justisomeggy



1	2	3	4
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