

DAY 1

Overview of Content

- Learn about microcontrollers
 - CPX, arduino
- Learn to code microcontrollers
 - Makecide/ javascript, arduino
- Learn circuitry
- Make!

Overview of workshop approach

- Introduction lessons on the topic
- Instructions and resources provided for your own reference
- Learning takes place while exploring on your own, example code, using resources
- Learning happens from mistakes and iterating on design and code.
 - Understanding why the mistake occurred will deepen your understanding of coding.
 - Determine whether the error was syntax or logic error.
 - Try coding it in a different way, or read the error message, try a new version, iterate on designs and code

Getting Started -understanding computers and microcontrollers and how they work

Discussion: Ask students what do they know about how computers work?
How does a computer work?

Watch: [What makes a computer work?](#) 5 min
What was one thing that stood out to you?
What was one thing that you learned?

Watch: [The Journey InsideSM: Curriculum for Microprocessor](#)
Though this video is old, and “campy,” the information is really clear and fun to watch.
Electrical signals -
Binary numbers
Digital / analog
inputs & outputs

Follow up discussion:

What did you find interesting?

What is something that you learned?

What is something that became clearer to you

Other Video Resources (To put on an LMS):

[How Computers Work: Binary and Data](#)

[How Computers Work: Circuits and Logic](#)

[How Computers Work: CPU, Memory, Inputs, Outputs](#)

[How Computers Word: Hardware and Software](#)



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