## Days 1, 2, 3

## Intro to Circuit Playground Express (CPX), a microprocessor

### Discussion: What do you see on the CPX?

[Overview of CPX](https://learn.adafruit.com/adafruit-circuit-playground-express)

Watch :[Limor Fried - inventor of CPX](https://youtu.be/4lGRgO40UhM) , explaining CPX

([Video Limor Fried](https://youtu.be/D27U3wHN8fs) discussing how she started the company)

### Getting Started Programming:

#### [Makecode Adafruit blocks](https://makecode.adafruit.com/) / Javascript (text)

#### [Overview of the Makecode blocks](https://makecode.adafruit.com/courses/maker/general/coding)

Learn how to download the code

### Explore and Program:

Outputs -

LEDS -explore all the LED blocks: animation, pixel to pixel, set random (math block) colors

Watch: [Images, Pixels, RGB](https://www.youtube.com/watch?v=15aqFQQVBWU&feature=youtu.be)

Music - explore all the music blocks

Inputs - Start with:

Buttons, Light Sensor, Sound sensor, Slide Switch

Accelerometer,

Temp Sensor,

Watch videos describing science behind the sensors

Pins & Infrared Communication

Reading Sensors

DOCUMENT YOUR CODE with explanatory notes

[Fill in the Chart:](https://docs.google.com/document/d/1rCN0t70cjgMwk_OaDWo99JXEBgb0aIemCQIJcg-7HO0/edit) Keep a record of your exploration with the code

Program music

Program LEDs to make pictures, to write words

Use button inputs

Temp Sensor

Light Sensor

Accelerometer

Sound Sensor

Pins

### Brainstorm potential real life applications

Watch Videos:

[Light Sensor and the CPX](https://youtu.be/9LrWQ68lO20)

[How does the Accelerometer work?](https://www.youtube.com/watch?v=2HzNKz-QlV0&feature=youtu.be)

[The science behind the speaker](https://www.youtube.com/watch?v=JjJ-KGwKh_4&feature=youtu.be)

[The science behind the microphone](https://youtu.be/g5894PVYOF4)

[The science behind the Infrared signals](https://www.youtube.com/watch?v=0EMuaMClfos&feature=youtu.be)

Exit ticket / End of session reflection: Executive function

Did you have an aha moment?

What did you struggle with?

What did you figure out?

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