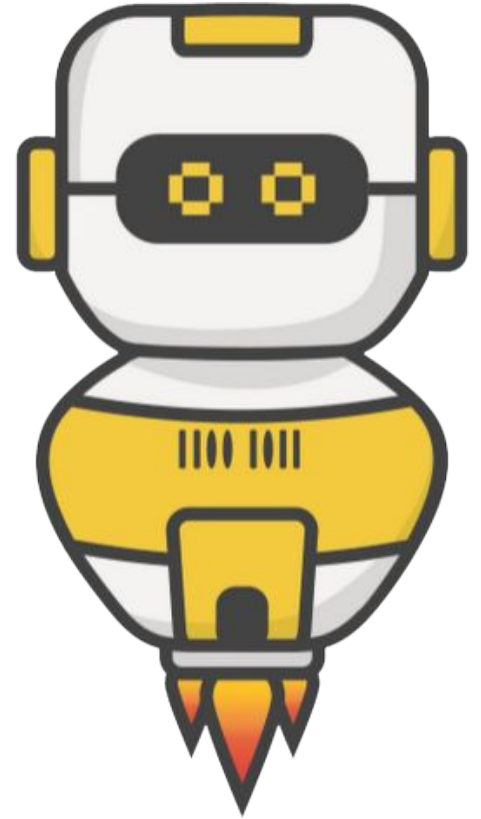# Mission 12 Remix

Create your own project from Mission 12

Warm-up

Mission 12 introduced the light sensor
- What are some digital devices that might have a light sensor in it?

Time for a project remix!

A remix can be:

- A new program created by adding new code to a program you already created
- You can combine parts of two or more programs in a remix
- Use a similar idea in a different way

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Project Remix

Creating a remix will let you:

- Improve your skills and practice the concepts from the mission
- Be creative
- Remember code from earlier programs and missions
- Work with other students
- Design an original program and write the code all on your own
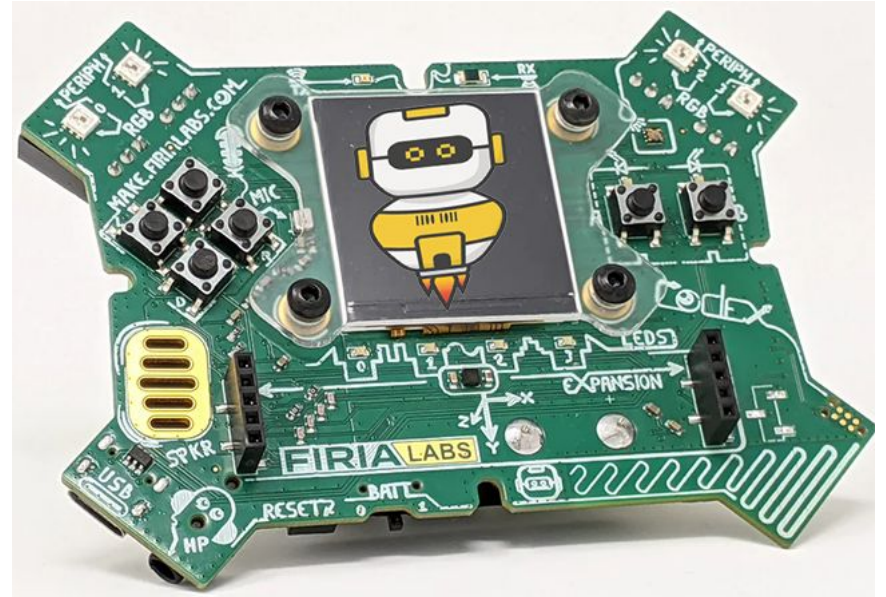
Step #1

Review the mission

- Open your project from Mission 12
  - What does the program do?
  - What skills were used or concepts learned?

DO THIS:

- Fill out the information in the Mission 12 Remix Log for **Step 1**

```python
from codex import *
from time import sleep

# select a value slightly under the
# room light readings
ROOM = 5500

while True:
    value = light.read()
    if value < ROOM:
        scaled = (1 - value / ROOM) * 20
        level = int(scaled)
        pixels.fill(WHITE, brightness = level)
    else:
        pixels.fill(BLACK)
```

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Step #2

Brainstorm ideas

- Read through remix suggestions from your teacher

Four suggestions are on the next 2 slides. You can use any of these ideas or come up with your own.
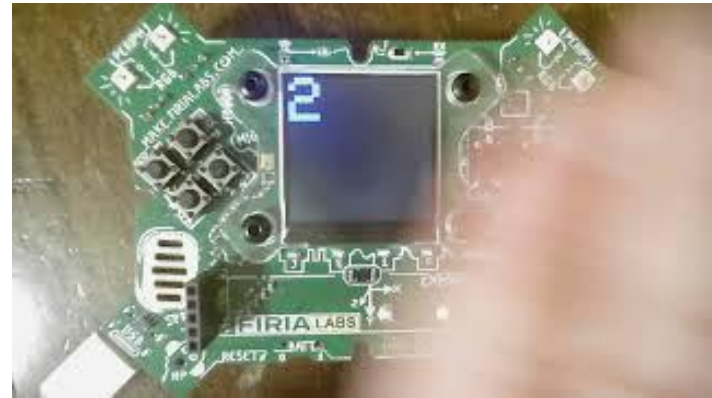
Step #2 Remix Ideas

Mild-1

Add another level variable of light intensity to the program -- it could be for bright light or very dark. This will give CodeX three options for the light sensor reading.

Medium-2A

Change CodeX to a people counter. When the light sensor changes from room light to dark, increment a counter. Wait a little before checking again, so the person isn't counted twice.
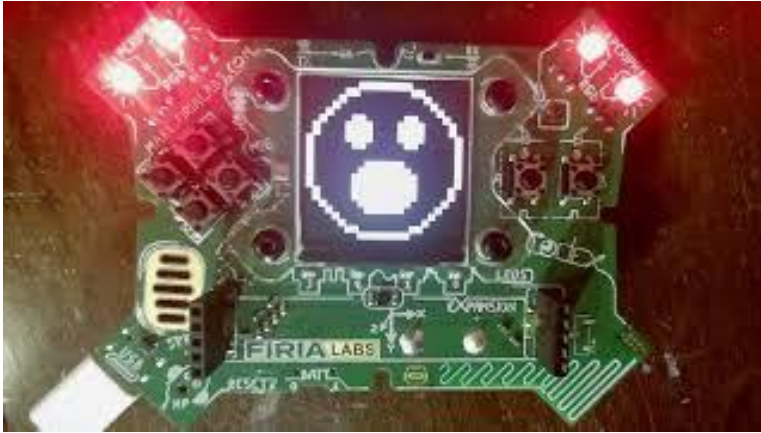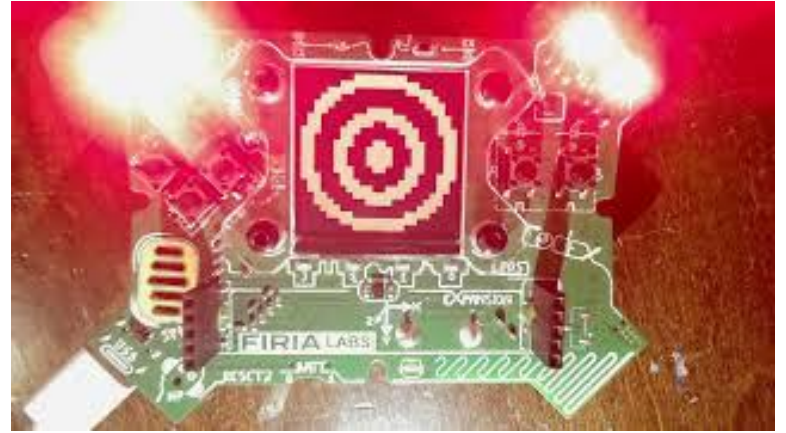

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Step #2 Remix Ideas

🌶️🌶️ Medium-2B

Change CodeX to an alarm. When room light is detected instead of dark, an alarm will sound. Otherwise, display a peaceful picture.

🌶️🌶️🌶️ Spicy-3

Add more level variables for CodeX, with each variation of light intensity displaying a different picture and pixel color. Try five levels.

Step #2

Brainstorm ideas

- Read through remix suggestions from your teacher (previous slides)
- Use the suggestions as presented, or combine some of the options for your own mild, medium, or spicy project
- Use your creativity to come up with your own idea for a project
- Decide with your partner what project you will do

DO THIS:

- Fill out the information in the Mission 12 Remix Log for **Step #2**

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Step #3

Make a plan

- What variables or constants will you need? What values will they hold, or what will you use them for?
- What if statements will you need for the program?
- What buttons will you program, and what will each button do?

DO THIS:

- Fill out the information in the Mission 12 Remix Log for **Step #3**

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Step #4

Code your project

- **IMPORTANT:** In CodeSpace, go to the sandbox
- Start with a new file and give it a descriptive name (**Remix12**)
- You can leave any program open, including **NightLight**, and use it as a guide
- Import your modules
- Create variables and constants as you go or when you see a need
- Write your code, testing frequently

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Step #4

Stop and test frequently!

- Don't try to write all the code at one time
- Think about the steps:
  - Just get one thing to work, then move on
  - Step by step!
- Mistakes happen, so find them early
- Type just a few lines of code and then run the program
- If there is an error, fix it before continuing
- Use the debugger and your other programs for help

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Step #5

Documentation!

- Make sure your code is readable by adding blank lines
- Add comments to sections of your code that explain what they do

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Step #5

Get feedback

- Show your code to other students.
- What do they think? Have them fill out the feedback form on your Mission 12 Remix Log.
- The Mission Log has space for two people to give feedback. The feedback can come from two peers or one peer and yourself.

Modify your code to make your project even better

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And now you have your own remix!

Congratulations!

By completing this remix you have:

- learned more about programming

- practiced the skills and concepts from the missions

- been thinking! And problem solving and much more!

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Mission Reflection

- Wow! Great job!
- Share your project with your friends!
- Run projects from other students
- Complete your Mission 12 Remix Log

- Don't forget to clear your CodeX by running your **Clear** program

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