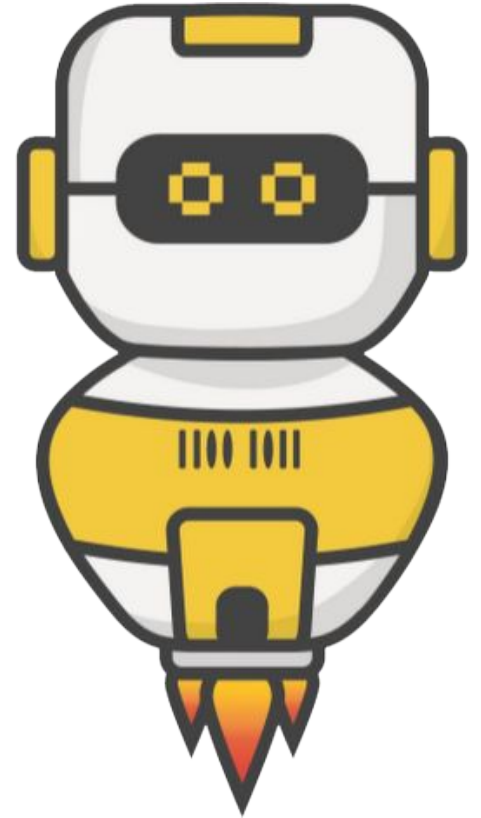# Mission 6 Remix

Create your own project from Mission 6

Warm-up

In your Mission 6 Remix Log, answer the pre-mission preparation questions:

- How would you describe Mission 6 to your friends?
- What was challenging about Mission 6?

# 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

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

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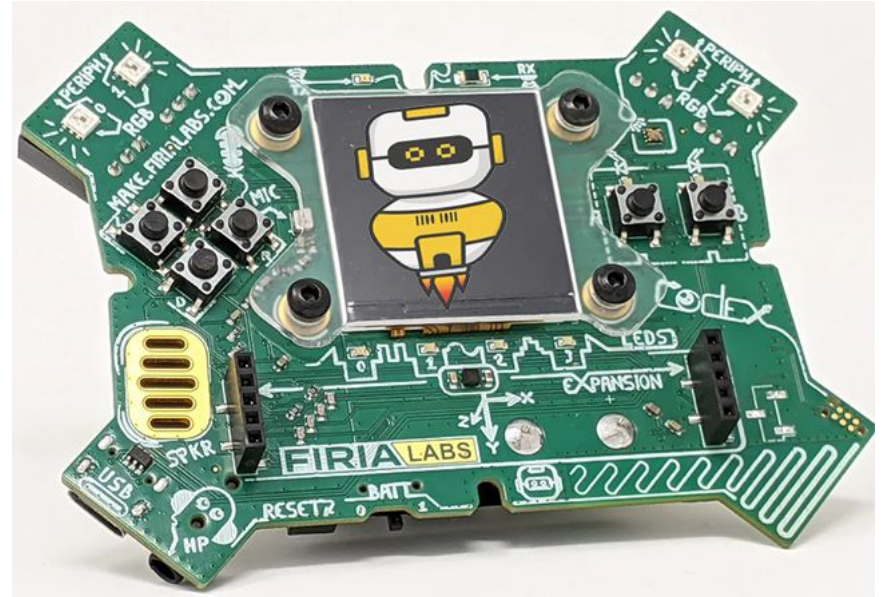
Step #1

Review the mission

- Open your project from Mission 6
  - What does the program do?
  - What skills were used or concepts learned?

DO THIS:

- Fill out the information in the Mission 6 Remix Log for **Step 1**
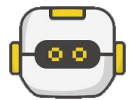
```python
from codex import *
from time import sleep

delay = 1

while True:
    # one heartbeat
    display.show(pics.HEART)
    sleep(delay)
    display.show(pics.HEART_SMALL)
    sleep(delay)

    if buttons.was_pressed(BTN_A):
        delay = delay + 0.2

    if buttons.was_pressed(BTN_B):
        delay = delay - 0.2
```

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Step #2

Brainstorm ideas

- Read through remix suggestions from your teacher

Eight suggestions are on the next 4 slides. You can use any of these ideas or come up with your own.

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Step #2 Remix Ideas

🌶️ Mild

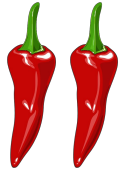Make one or more pixels flash on and off instead of an image on the screen.

🌶️ Mild

Add flashing pixels to the heartbeat. You have one, two or all of the pixels flashing during the heartbeat.

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Step #2 Remix Ideas

🌶️🌶️ **Medium**

Add another if statement for a different button press that will break out of the loop to stop the program.
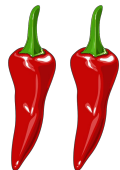
🌶️🌶️ **Medium**

Change the flashing image to pixels that roll, turning on one at a time. One sequence will be pixel 0, then pixel 1, then pixel 2, and then pixel 3. Repeat the sequence in a loop, with the option to speed up or slow down.

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Step #2

🌶️🌶️ **Medium**

Add two pitch sounds to the heartbeat, one for each image. Use the delay variable in the pitch statement instead of a sleep statement
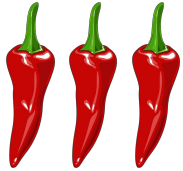
    Example:
`audio.pitch(440, delay)`

🌶️🌶️🌶️ **Spicy**

Add code that will prevent the runtime error. Remember: the error happens when delay is below 0. How can you make sure this doesn't happen?

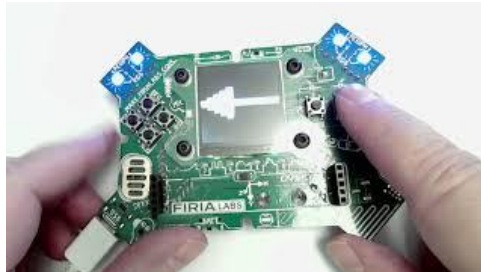*You can include any of the options in the spicy remix.*

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Step #2

🌶️🌶️🌶️ **Spicy**

Change the flashing image to a left (west) or right (east) arrow. Use different button presses to change from one image to the other.

🌶️🌶️🌶️🌶️ **Extra Spicy**

Add a menu that explains what each button press will do, and another break to hold the menu until they want to start. Also, include an ending message. If you include flashing pixels, add another variable for the color.

Step #2

Brainstorm ideas

- Read through remix suggestions from your teacher (previous slides)
- 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 6 Remix Log for **Step #2**

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Step #3

Make a plan

- What variables will you need? What will you use them for?
- What images will you display?
- What pixels will you turn on/off?
- What buttons will you program, and what will each button do?

DO THIS:

- Fill out the information in the Mission 6 Remix Log for **Step #3**

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Step #4

Code your project

- **IMPORTANT:** Go to the sandbox to code the remix project
  - Above toolbox in the lower left corner
- Start with a new file and give it a descriptive name (**Remix6**)
- You can leave any program open, including **Heart2**, and use it as a guide
- Import your modules
- Define your variables
- 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

- 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 6 Remix Log
- Give yourself some feedback Is there something you want to change or improve or add? Fill out the feedback form on your Mission 6 Remix Log

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!

- Complete your Mission 6 Remix Log

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