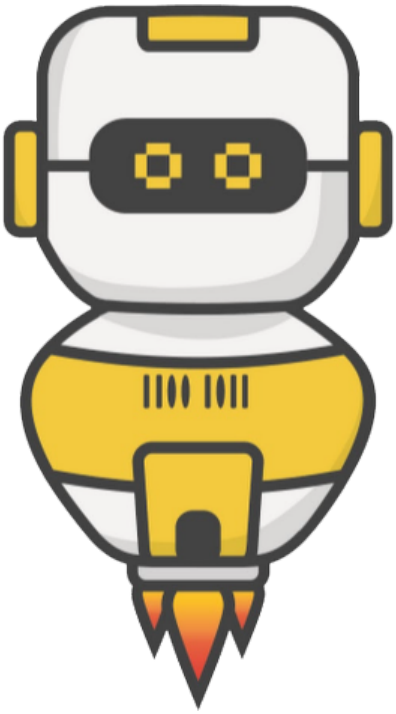
Mission 8:
Remix

Student Workbook

FIRIA LABS

Make a list and then get random!

This assignment will let you be creative and come up with your own program for the CodeX to run.



Go to the Mission 8 Remix Log and fill out the Pre-Remix preparation.

Time for a project remix

A remix can be:

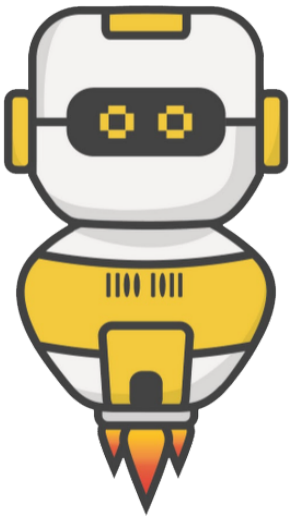
- A new program created by adding new code to a program you already created
- You can combine parts of two or more programs in a remix
- Use a similar idea in a different way

Creating a remix will let you:

- Master the skills and concepts practiced in the mission
- Be creative
- Remember code from earlier programs and missions
- Work with your peers
- Design an original program and write the code all on your own

Step #1: Review the mission

- Review your programs from Mission 3 through 8
  - What do the programs do?
  - What skills were used or concepts learned?



DO THIS:

- Open your project from Mission 8 – Answer Bot
- Review what the program does
- Review the programming concepts and skills you learned
- Fill out the information in the remix log

```
import random
from time import sleep

# What's for lunch?
answers = ["Pizza", "Burger", "Salad",
           "Burrito", "Nothing", "Pasta"]
my_choice = answers[6]

while True:
    # Flashy pixels
    color = random.choice(COLOR_LIST)
    pixels.set(0, color)
    color = random.choice(COLOR_LIST)
    pixels.set(1, color)
    color = random.choice(COLOR_LIST)
    pixels.set(2, color)
    color = random.choice(COLOR_LIST)
    pixels.set(3, color)
    sleep(0.25)

    # Display random answer from list when
    # Button A is pressed
    if buttons.was_pressed(BTN_A):
        my_choice = random.choice(answers)
        display.print(my_choice, scale=3)
```

Step #2: Brainstorm ideas

- Read through remix suggestions.
  - Six ideas are on the next pages. You can use any of these ideas or come up with your own.
  - You can combine any parts of the suggestions into your own mild, medium, spicy or extra spicy remix.
- Use your creativity to come up with your own idea for a project.
- Decide with your partner what project you will do.

Mild Remix #1A

Create a list of colors. When a button is pressed, pick a random color and turn on all four pixels. Or use two buttons – Button A for pixels 0 & 1, and Button B for pixels 2 & 3

Video of Remix #1A (all four) / Video of Remix #1A (two buttons)

Mild Remix #1B

Create a list of images and/or colors. When a button is pressed, pick a random image/color to display. Also program a button to break out of the loop and end the program.

Video of Remix #1B

Medium Remix #1C

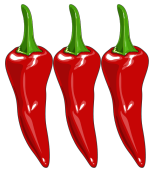
Create a list of sounds. When a button is pressed, pick a random sound to play. Also program a button to break out of the loop and end the program.

Video of Remix #1C

Medium Remix #2

Create two lists. The items can be colors, text, images or sound. The lists do not need to be similar items or the same size. Use BTN_A to select one of the lists and BTN_B to select the other list and display a random item from the list when pressed. Program a button to break out of the loop and end the program. Include instructions and a “wait” button.

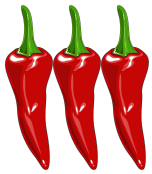
Video of Remix #2 / Video of Remix #2 with JPG images



Spicy #3A

Create 2 different lists, selected with BTN_A and BTN_B buttons. Program BTN_L to scroll backwards, BTN_R to scroll forwards, and BTN_U to select a random item from the chosen list. Include an intro, wait button and exit button.

Video of Remix #3A / Video of Remix #3A (with JPG images)



Spicy Remix #3B

Create a dice roller, showing the number of a 6-sided die. Change the scale of the text so the number is large. Show a message, like "rolling" before displaying the number.

Video of Remix #3B / Another version of Remix #3B

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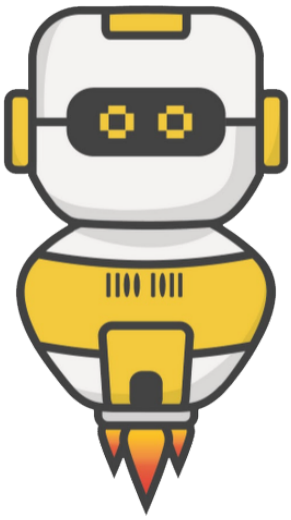
Step #2: Brainstorm ideas



DO THIS:

- Decide with your partner what project you will do
- Fill out the information in the Mission 8 Remix Log for **Step #2**

Remix Step 2: Describe what your remix project will do:

_____

_____

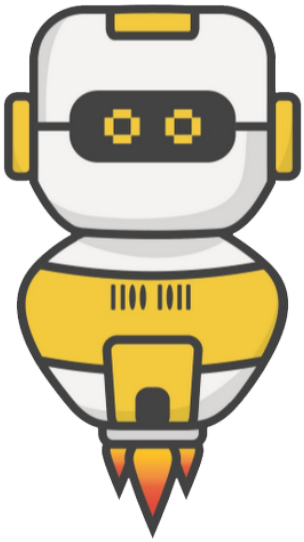
_____

_____

Step #3: Make a plan

Now that you have an idea for your remix, you need a plan.

- What variables will you need?
- What lists will you use, and what will be their items?
- What buttons will you program, and what will each button do?



DO THIS:

- Fill out the information in the Mission 8 Remix Log for **Step #3**

Remix Step 3: Plan your code. What variables will you use in the project?

You do not need to fill out every line if you don't need that many variables.

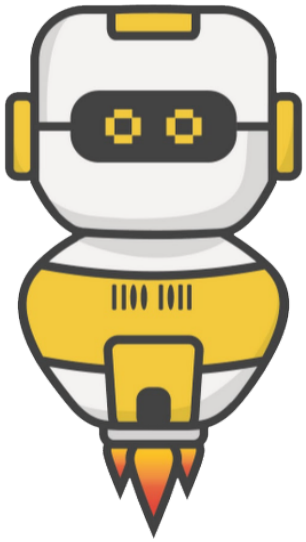
Variable Name	What it will be used for

First list name:	
Items in list	
Second list name:	
Items in list	

Button	What it will be programmed to do:

Step #4: Code your project

- **IMPORTANT:** In CodeSpace, go to the sandbox: 
- You can leave any program open, including **Answer Bot**, and use it as a guide



DO THIS:

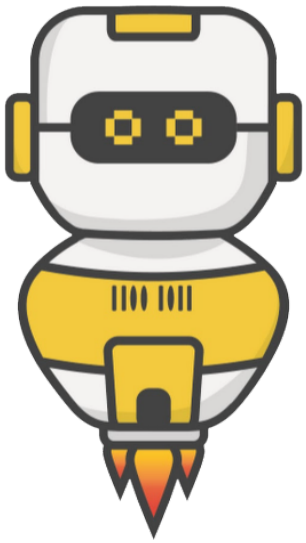
- Start with a new file and give it a descriptive name (**Remix8**)
- Import your modules
- Create your lists
- Define your variables
- Write your code, testing frequently

Reminders!

- 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

Step #5: Documentation

You should always make your code readable and easy to follow.

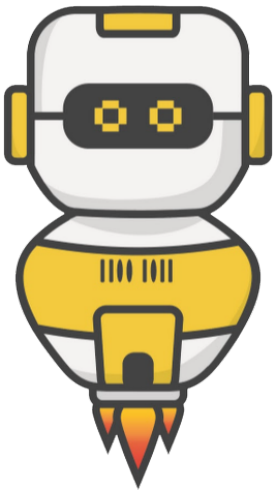


DO THIS:

- Add blank lines where needed to divide sections of code
- Add a comment at the top with your name and the name of the program
- Add a few more comments to sections of your code that explain what they do

Step #5: Get feedback

Getting feedback and reflecting on your code can help you make the program even better.



DO THIS:

- Show your code to another student
- Have him/her fill out the feedback form on your Mission 8 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 8 Remix Log

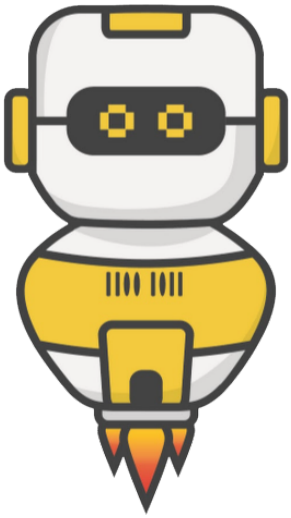
Modify your code to make your project even better

Congratulations!

Now you have your own remix! Great job! Share your project with your friends.

By completing this remix you have:

- learned more about programming
- used skills and concepts from the missions
- been thinking!
- and problem solving
- and much more!



DO THIS:

- Run at least three projects from other students
- Complete the Mission 8 Remix Log
- Don't forget to clear your CodeX by running your **Clear** program