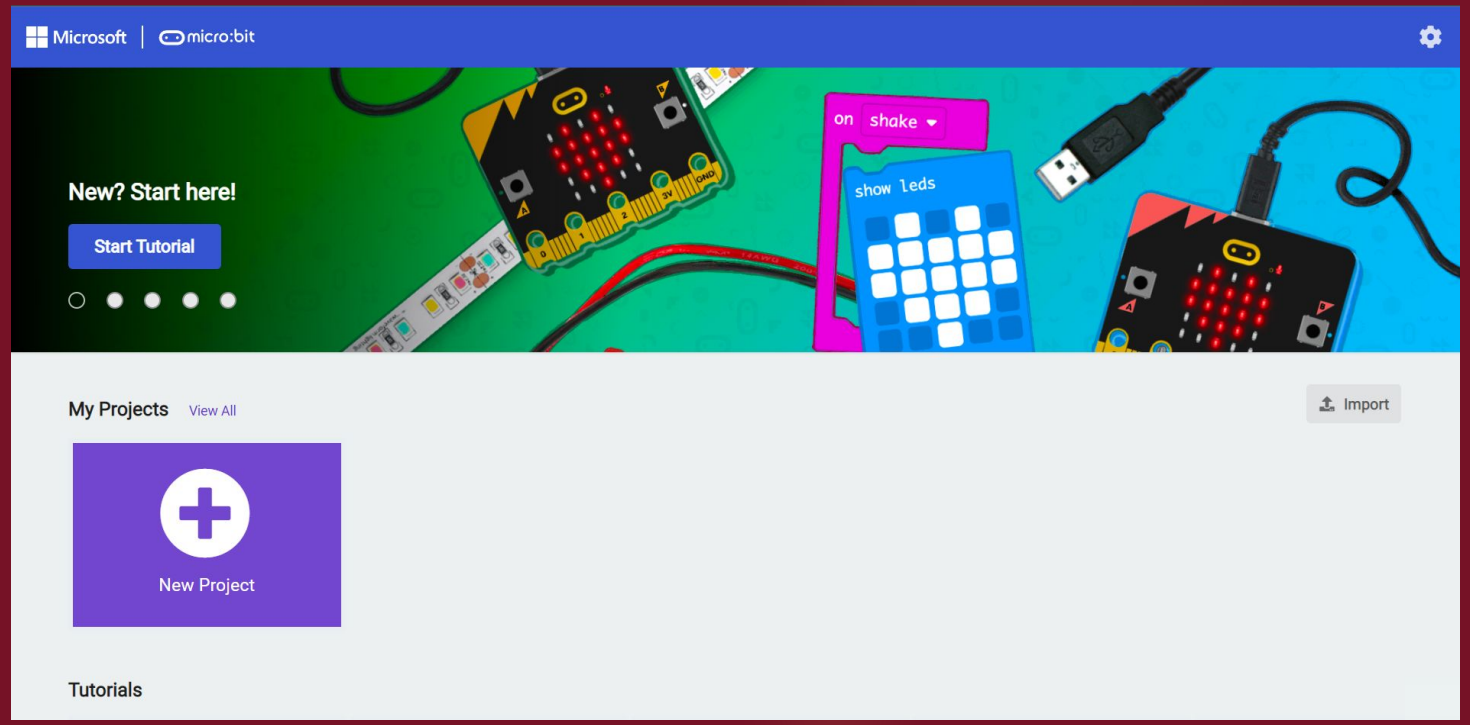
Using Micro:Bit MakeCode Classroom

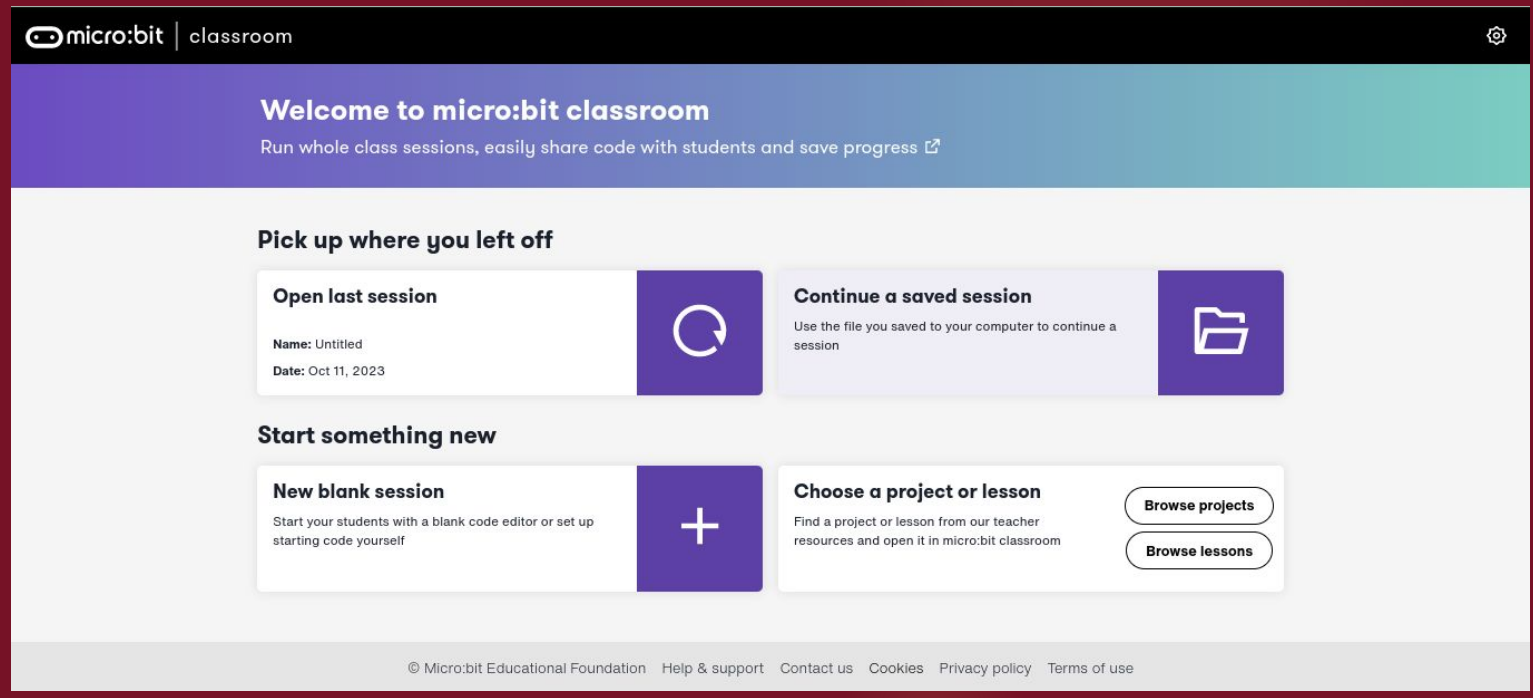
MakeCode for Micro:Bit

- MakeCode is an online **programming platform** made by Microsoft that is used to program a small computer called a Micro:Bit
- The website can be accessed by going to https://makecode.microbit.org/
- The home screen should look like this



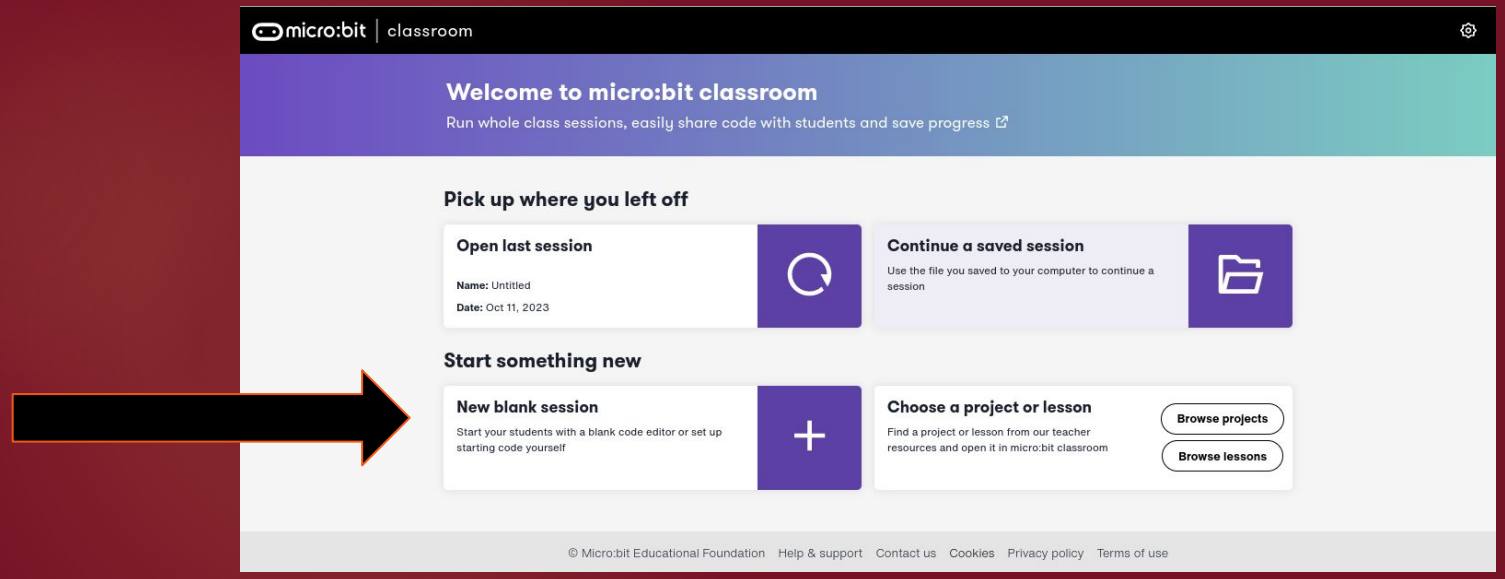
MakeCode Classroom

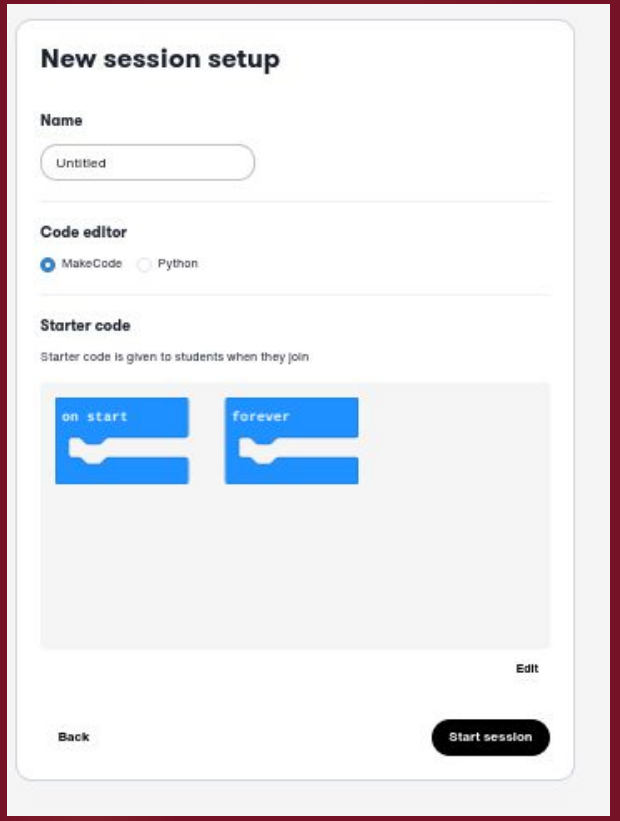
- This home screen is the regular MakeCode server
- For the Classroom setting, go to https://classroom.microbit.org/
- The home screen should look like this



MakeCode Classroom (cont.)

- This is the screen for the teacher to set up a class activity
- Select the Start Something New tab





Creating a Session

- In this section, we can name our activity. This will be the title of the projects that the students will be working on.
- Next, you select the language that you want to use for the lesson
- We are using MakeCode
- The box saying “Starter Code” is where you will put the code you want the students to upload to their microbits.
- Click the edit in order to put the code in to the program.

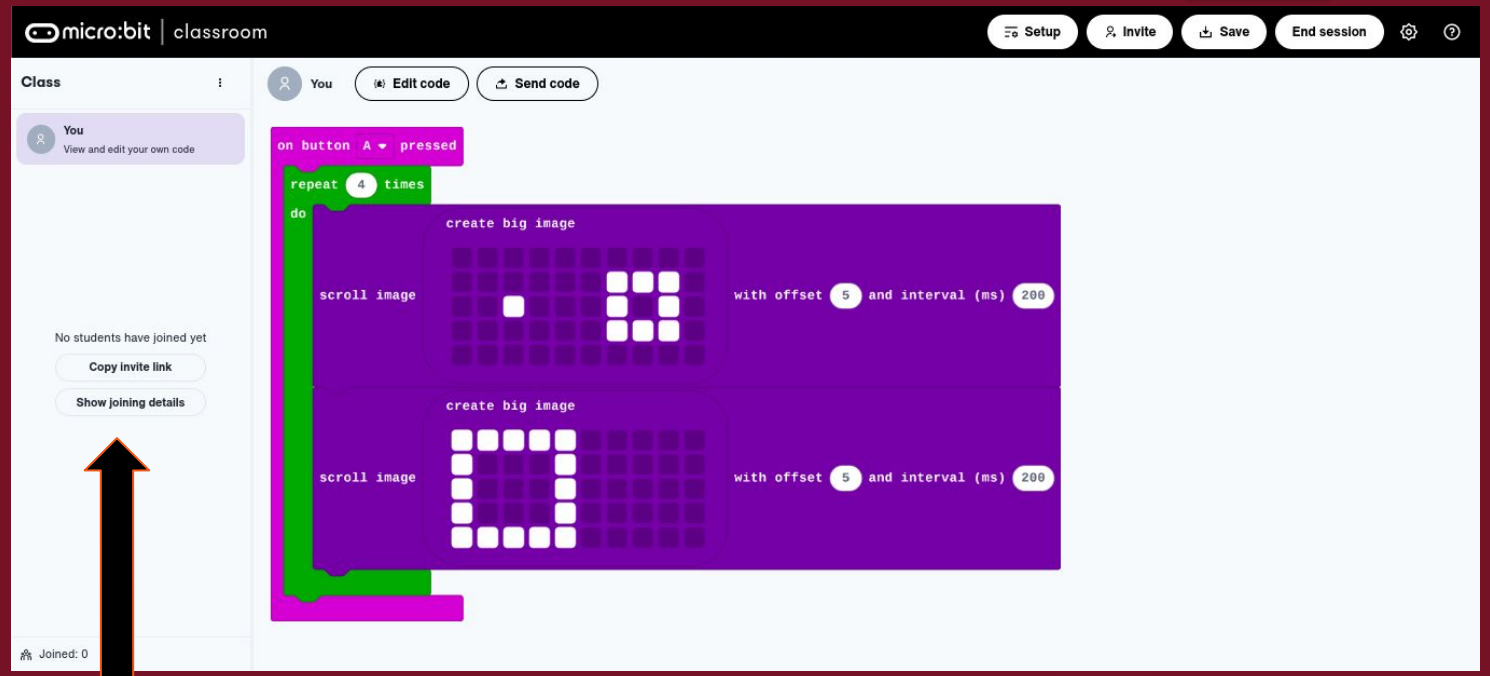
Editing Code

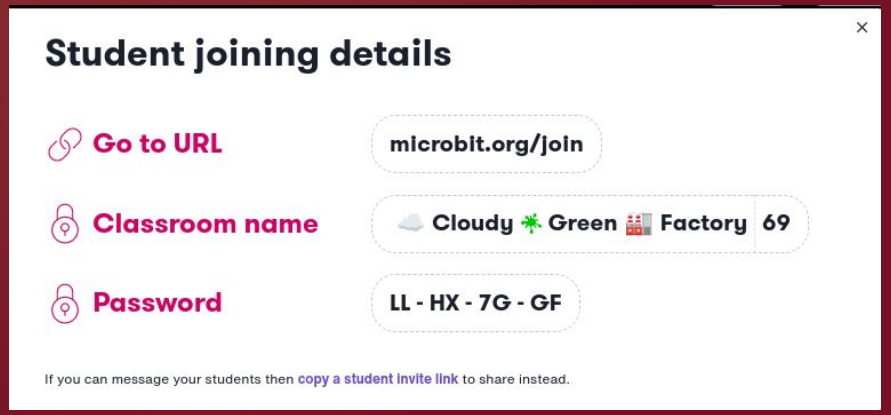
- When you are in the editing code section of the classroom, you can create you code directly in the MakeCode space.
- Or, if you have a code that you have worked on previously, you can save that code to your device and drag the .hex file into the MakeCode project area.
- Then, click back to setup.
- Lastly, start session.
- OR, you could start with a blank editing screen, and use this as a way to watch and share code with the students. Not just give them the code in the beginning.

Start Session Example

- You can share the url link with your students to login on Google Classroom or Canvas. Then the students will need to use the classroom name and password.

- **OR you can share the link with the students via email or chat–I copied the joining link straight to my Canvas page and they bypassed the emojis and pin!**

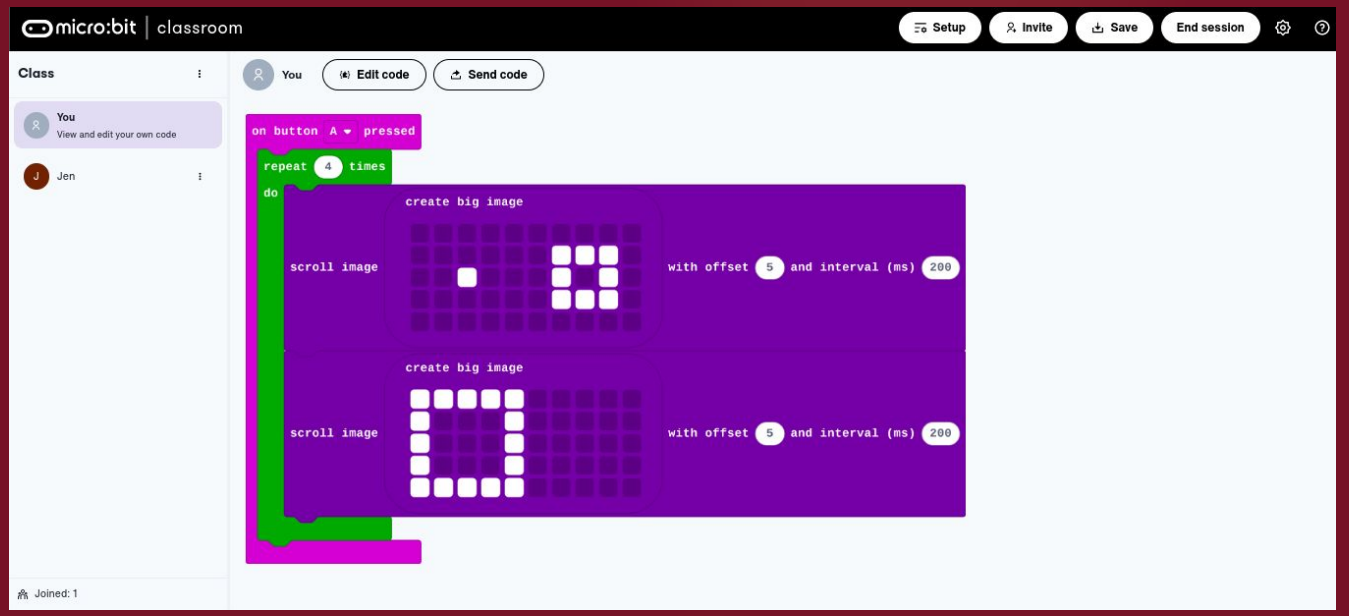




- The URL will **always** be microbit.org/join
- The Classroom Name will be a series of 4 emojis
- The PIN is 6 numbers and letters
- ***These will change with each session***

Dashboard

- After the students put in all of their details, they will need to put in their name.
- As the students join the classroom you will see their name show up on the right side of the dashboard.
- The students will automatically have access to the code that you have written. You do not need to send it to them.



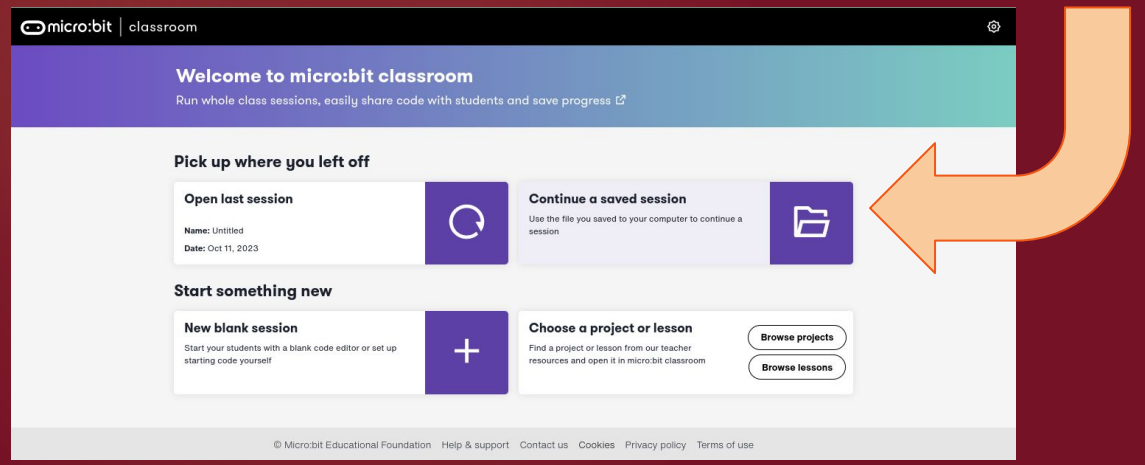
Student Code

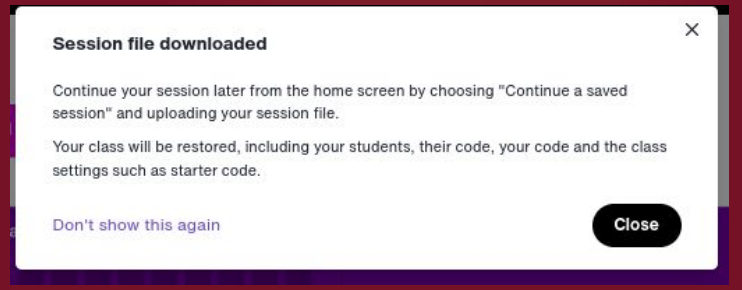
- In order to see the students code, you simply click on their name on the left side, and their code will appear!
- From this screen you can also do a couple of other cool things.
  - You show a code that a student has created to the class.
  - You can resend code to just one student if they need it–maybe they want to start all over again.
  - You can even edit a student's code from your screen.

Save Tab

- The save classroom tab is where you are able to pause and then resume activities at a later time or store the student's codes to view later.
- Save the document to your device. I usually name it with the day and class. Maybe even the activity.
- Your students can even save their code to their device as a .hex file for themselves if they wish by hitting the download button.

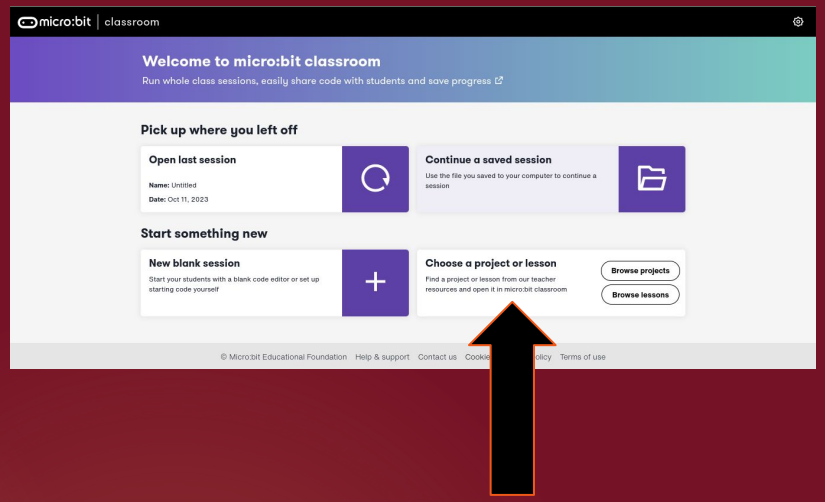
The next time you login to the classroom you will choose this:





- You will upload the same file and upload it.
- When the students log back in, they will find their name, and they will have their code back to them.

Ideas:



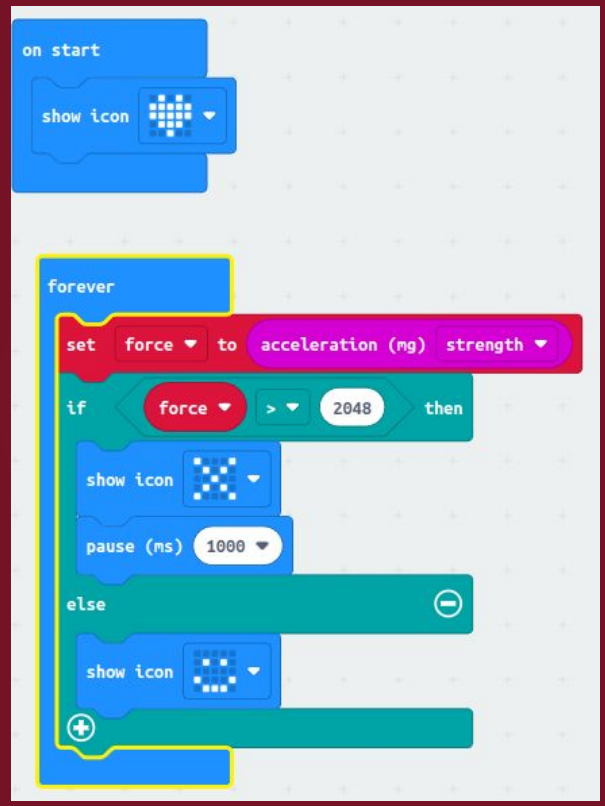
- Once the students are comfortable with the microbits and Makecode software, then teach the block coding lesson.

- **Choose a Project or Plan**
  - Start simple when introducing Microbits to your students.
  - Give them a tour of the drawers in Makecode
  - Teach them to make one of the simple codes in the project plans like beating hearts or animated animals.
  - The Magic 8 Ball lesson looks like a lot of fun!

Egg Drop Experiment

We all know the usual egg drop experiment.

- Students try to build a structure that will prevent a raw egg from breaking when dropped from a significant height.
- The students design and create a device that reduces the amount of energy transferred from potential to kinetic energy on the egg shell.



In this Experiment, the egg is now a microbit. The many trials can be made and data can be collected.

This would be a good use of MakeCode Classroom, so the students can focus on the science and not the coding.

Ideas:

- Decide your goal for the lesson. If you are wanting the students to experiment with the dog, Cutebots, drones, then giving them the code ahead of time may be more efficient, and the classroom function will definitely help with this.

- If you want the students to write the code, you can have them start with the Classroom so that you can share code and see their screens easily.
- Cutebot Measuring Distance Lesson Plan
- Cutebot Line Following Lesson Plan

Additional Resources

- Focus on Solving Real World Problems:
  - Global Goals Microbit
  - Do your Bit
  - Microbit Challenge
- Science Experiment
  - Microbit Science Experiments
- Making Devices
-

Assessments

Some Rubric

Criteria	Ratings		Pts
Communication and Collaboration Partners worked well together. Turned in one project. Agreed on the idea. Each partner participated in the final project.	25 pts Full Marks	0 pts No Marks	25 pts
Code Code is turned in with comment and works.	10 pts Full Marks	0 pts No Marks	10 pts
Paper work Flow chart, Animation, and Code trace papers are turned in on time and completed. Papers need to be easy to read.	15 pts Full Marks	0 pts No Marks	15 pts
Presentation Students present code to class.	10 pts Full Marks	0 pts No Marks	10 pts
			Total Points: 60

Signs!

Pitch Your Passion Project

Published

Argumentative Writing Animation must have the following:

- Citations on the Front page
- State what your topic and opinion is clearly in the beginning.
- A title page at the beginning or end
- A call to action at the end
- State all three points clearly
- NO grammar, spelling, capitalization or punctuation errors.

Turn in your project to the passion project studio in Scratch. You can share your original topic or your new topic. Or both! I will only grade one of them!

Scratch Project

Assessment con't . . . .

Real World Coding

Criteria	Ratings		Pts
Communication and Collaboration Partners worked well together. Turned in one project. Agreed on the idea. Each partner participated in the final project.	50 to >0.0 pts Full Marks	0 pts No Marks	50 pts
Project Project looks like the students put effort into it. Student demonstrated inputs and outputs throughout the project and they are present in the final out come.	50 to >0.0 pts Full Marks	0 pts No Marks	50 pts
Paper work Proposal, Flow chart, Wiring Guide, and Code trace papers are turned in on time and completed. Papers need to be easy to read and stamped by Ms. Jackson.	20 to >0.0 pts Full Marks	0 pts No Marks	20 pts
Presentation Student presents project to class, speaks directly to the class, doesn't read off of the screen, and is prepared for the presentation.	25 to >0.0 pts Full Marks	0 pts No Marks	25 pts
Slide/Canva Presentation Slide presentation must have at least 6 slides and the following information must be represented on those slides: Slide 1-Name and logo and SLOGAN! of your product/service. Slide 2-Description of product. Slide 3-Why people would need this. Slide 4- Where this product/service would be sold. Slide 5- How will this make money? Slide 6- Conclusion/Any additional information.	30 to >0.0 pts Full Marks	0 pts No Marks	30 pts