We Made it!

Pinball-a-Palooza
Pinball games from IAP 2021

EDGERTON CENTER
MAKE
4-409

"Welcome to MIT" by Diane Brancazio '90

Video and/or images

Features:

Bumper with buzzer switch so the Mens et Manus guys can "cheer" for you when you give them a bump

Flapper switch that lights up Tim the Beaver as you enter MIT

Stickers: with name of a really fun Makerspace on Campus: Edgerton Student Project Lab 4-409!

Paddle graphics: Beaver tails hit the pinball

What was most fun or interesting
The buzzing bumper, since it was like a real pinball feature and was easy to wire

Meeting lots of students!

Next steps for your machine

Ball dropper - manually controlled

More lights and decoration

B-Ball - Shanti Mickens

Features:
- Pinball Launcher
- Spinner
- B-ball Hoop
- Flippers
- Clear Acrylic Top Panel
- Trans Orange Front and Back Panels

Video and/or images

What was most fun or interesting?

I really enjoyed learning how to design for the laser cutter, and the excitement of waiting for my parts to show up.

Next steps for your machine

Finishing the assembly and using the provided electronics to add in some lights and sounds.

Tangled

By: Alisa Hathaway

Features:
- Gold Star Spinner with LEDs
- 3D printed ramp made with Rapunzel's hair
- Pascal the Chameleon ball launcher
- Pascal the Chameleon Buzzer Bumper
- Rapunzel's 'Laser Printed' tower with fairy lights

- Getting all the electronics to work
- Learning how to use Fusion 360
- Painting!

Improvements: Figure out how to make spinner contact better for longer LED light-up

Ozak's Hallway

by: aquila

MIT Dream

Nicole Shigiltchoff

Features:

- Light-up bumpers
- Miniature models of select MIT buildings
    - MIT dome; spinning dome!
    - Stata; sound!
    - Kresge; rotates!
- Panorama of Boston and the Charles River, as seen from the MIT campus

Best part:
seeing my electronic components work

Hardest part:
getting the electronics to work

Concept:
As a first-year, I have only vague memories of visiting MIT before I even applied. The physical manifestation of MIT exists only in my mind.

Next steps:
Build something else that's cool, mechanical, and electronic!

"That's no moon!" by Daniel Jang

- Clear game objective via the side ramp
  - Knock down Darth Vader and go down the Death Star trench!
  - Ball returns via an opening in the back

- Various themed objects

- Small upgrades
  - Felt bottom corners
  - Flipped the front block to raise the front side for slower play speed

Video and/or images

Tour

Playthrough

What was most fun or interesting
- Getting the side ramp to work
- Decorating with theme
- Learning the various software tools

Next steps
- LEDs and sound for the ramp
- Better mounting solutions for objects
- Ball mechanism for game start
- Incorporate the Death Star panel (flap hole?)
- Install 3D printed parts for side saver
- Finish adding in the inside wall for the ramp

Carnival- Ishita

Features:
- Spinning Ferris Wheel w/ Prizes
- Bumper Car Ball Holders
- Knockdown Food Stand

What was most fun or interesting:

- Using most of the tools and softwares for the first time
- 3D printed models

Next steps for your machine:

- Finish assembling
- Add electronics & side supports
- Test mechanisms

Buzz Lightyear's Space Ranger Spin by Lauren Platt '22
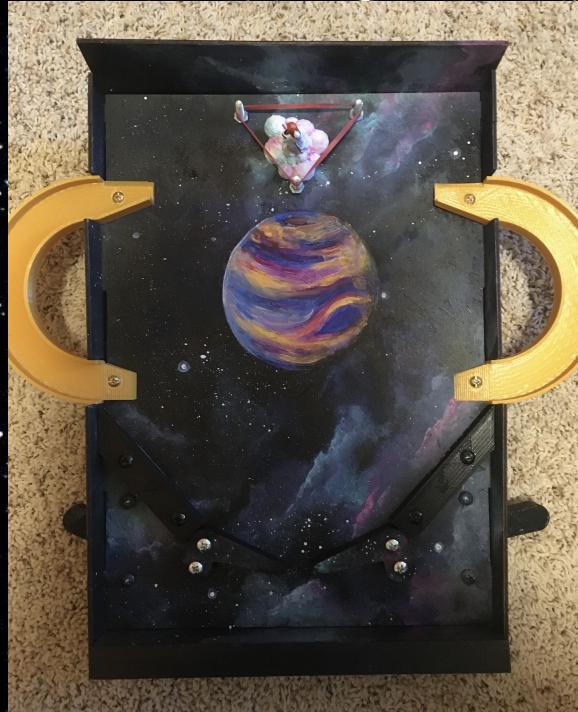
My pinball machine is based on the attraction Buzz Lightyear's Space Ranger Spin at Walt Disney World! My machine features theming from the attraction including Zurg targets, an alien crab, an alien spider, a robot, a battery, blasters, and stars! My machine also features figures of Buzz Lightyear and a Pizza Planet alien! Finally, for gameplay components, my machine features two rubber band bouncers, a spinner, and a ball launcher!

Space Out

Alyssa Keirn

Features:
- Themed side guards
- "Ring" tracks
- Realistic (ish) mini rocket
- Bumper

What was most fun or interesting
- Learning how to 3D model!
- Painting

Next steps for your machine
- Adding a spinner (maybe)
- Making the bumper buzz
- Add lights

50 States of Pinball – Sophie Herscovici
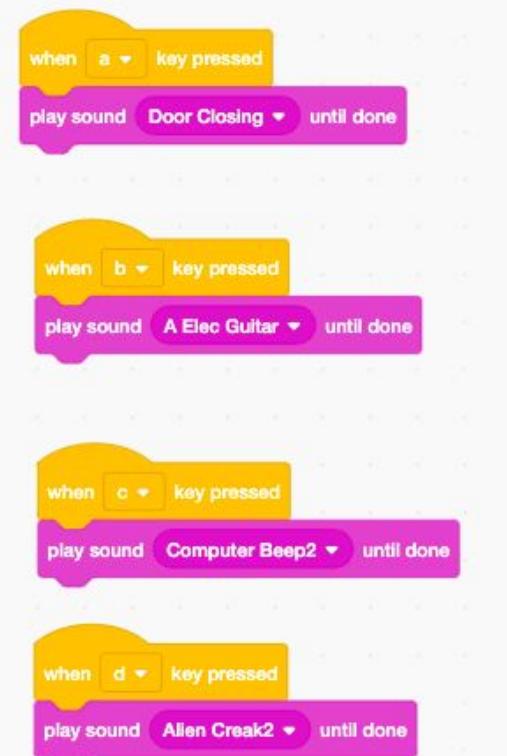
Features:

Buzzer around the statue of Liberty

Basket for the ball to fall in when you lose, or to store the extra balls
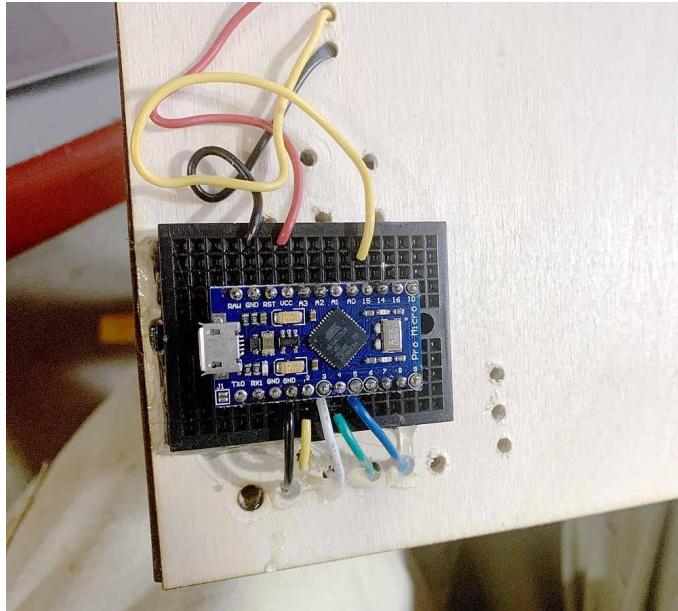
Arduino Leonardo program controls Scratch program by simulating key presses. Keys cause sound effects to be played.


when [a ▼] key pressed
play sound [Door Closing ▼] until done

when [b ▼] key pressed
play sound [A Elec Guitar ▼] until done

when [c ▼] key pressed
play sound [Computer Beep2 ▼] until done

when [d ▼] key pressed
play sound [Alien Creak2 ▼] until done

Jonathan Dietz '73

Adding Pinball sound effects- Jonathan Dietz '73

Switches on the playing field trigger an Arduino Pro Micro to act like a USB keyboard, sending key letter codes to a laptop running Scratch, triggering sound effects
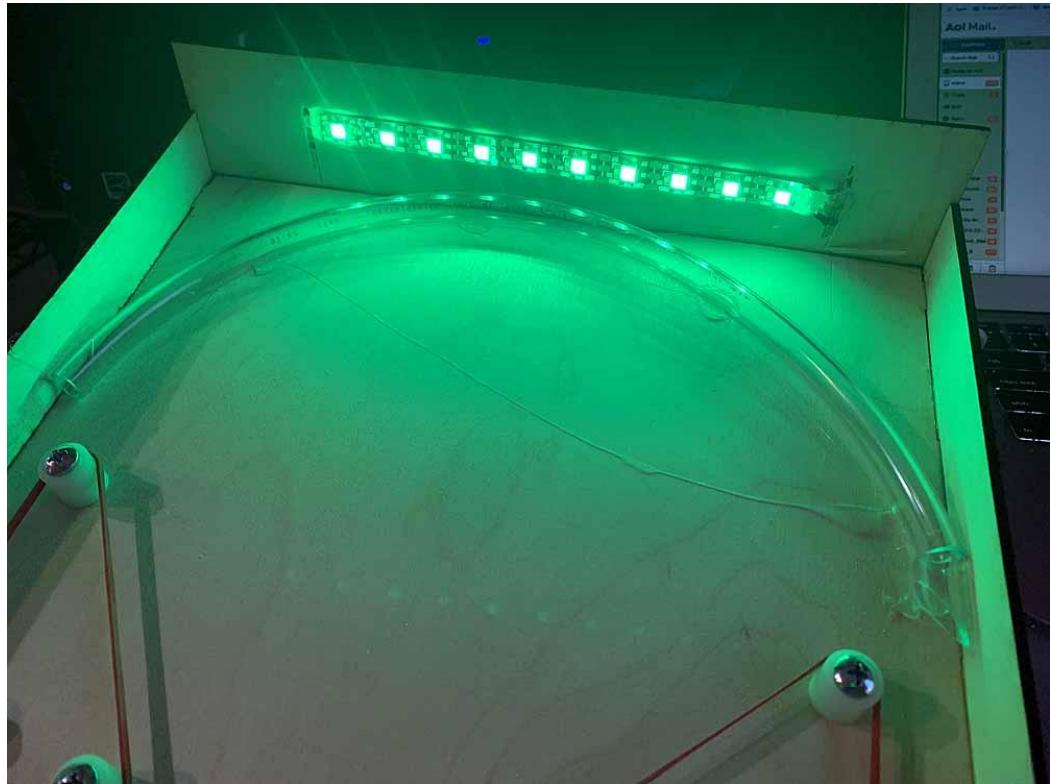

```
6
7    (2) use "Programmer:"Arduino as ISP(ATmega32U4)"
8  */
9  #include "Keyboard.h"
10
11  // set pin numbers for the five bumper switches:
12  const int bumper1 = 2;
13  const int bumper2 = 3;
14  const int bumper3 = 4;
15  const int bumper4 = 5;
16
17  void setup() { // initialize the buttons' inputs:
18    pinMode(bumper1, INPUT_PULLUP);
19    pinMode(bumper2, INPUT_PULLUP);
20    pinMode(bumper3, INPUT_PULLUP);
21    pinMode(bumper4, INPUT_PULLUP);
22
23    Serial.begin(9600);
24    Keyboard.begin();
25  }
26
27  void loop() {
28
29    if (digitalRead(bumper1) == LOW) {
30      Keyboard.write('a');
31    }
32    if (digitalRead(bumper2) == LOW) {
33      Keyboard.write('b');
34    }
35    if (digitalRead(bumper3) == LOW) {
36      Keyboard.write('c');
37    }
38    if (digitalRead(bumper4) == LOW) {
39      Keyboard.write('d');
40    }
41
42  }
```

Switches and Arduino program also control Neopixels, for lighting effects and score keeping

Neopixels are programmable LED strips, with a single data wire able to control individually addressable LEDs.

Neopixel lights on back

Jonathan Dietz '73

Spirited Away   by Alassia Lang

Features:

- From the movie *Spirited Away* from Studio Ghibli
- Spinny house (bath house from movie)
- 2 Characters! (Daikon Radish Spirit and No Face)
- Limited on paint, but had origami paper and a cool box to decorate and make the bumpers

Video and/or images

What was most fun or interesting

Designing the bathhouse! After painting, I feel like it came together well

Next steps for your machine

Electronics! I did not have a chance to add yet, but really excited! I am thinking lights/or a bumper of some sort around one of the characters.

Title and Creator

Features:

Video and/or images

What was most fun or interesting

Next steps for your machine

Title and Creator

Features:

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What was most fun or interesting

Next steps for your machine