Strawbees.

BIRDBRAIN TECHNOLOGIES LLC

Halloween Webinar

HALLOWEEN WEBINAR

Spooky Smart Halloween Fun with Strawbees & BirdBrain Technologies

Sarah FitzHenry

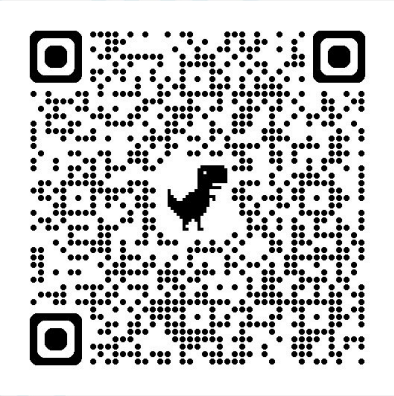
Erik Thorstensson

@birdbraintech @Strawbees

Outline

- Meet BirdBrain Technologies and the Hummingbird Kit
- Meet Strawbees
- Strawbees + Hummingbird
- Spooky inspiration time 🎃 👻 🕷
- Lots of free resources!
- Giveaway announcement
- Questions

Link to slides:



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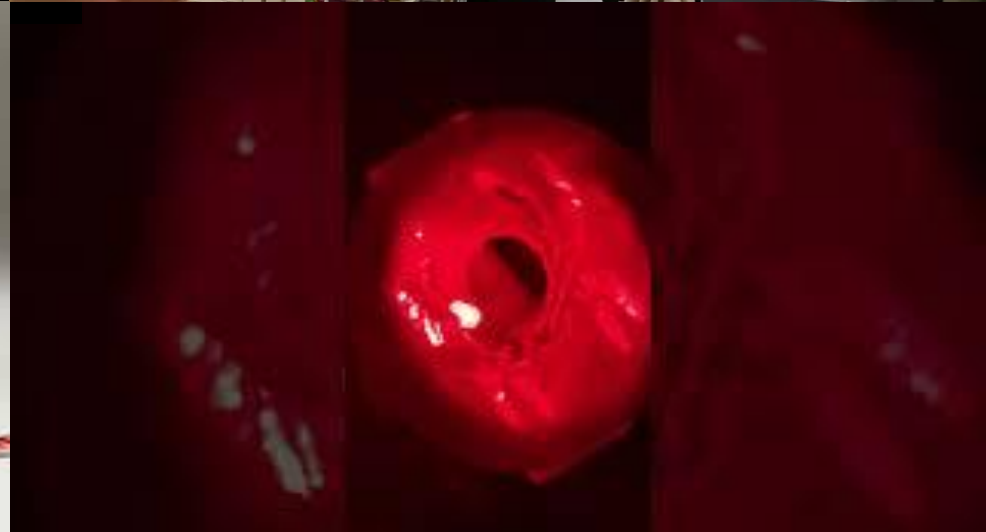


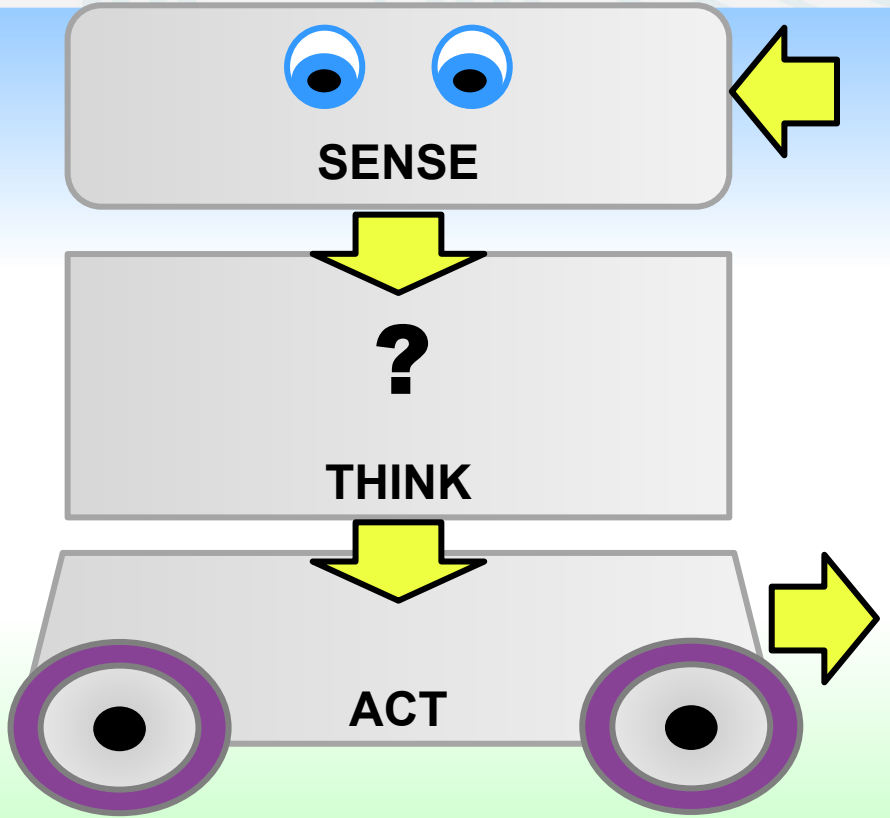
What is a robot?

Sense-Think-Act Robot

Sense the environment…

Plan how to react…

Do something!



MEET THE HUMMINGBIRD ROBOTICS KIT

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BirdBrain Technologies' mission is to inspire **deep and joyful** hands-on learning in **all students** .

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Hummingbird Robotics Kit

Flexible - Creative - Reusable

Design, build, and program a personally meaningful robot out of any materials, with any device, in multiple programming languages.

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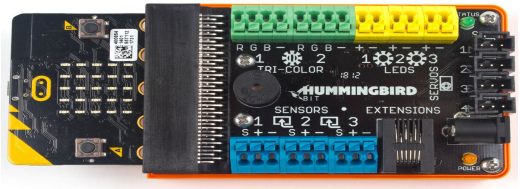
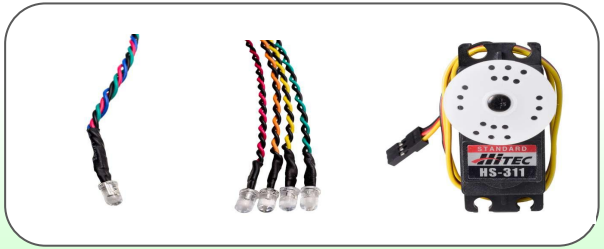
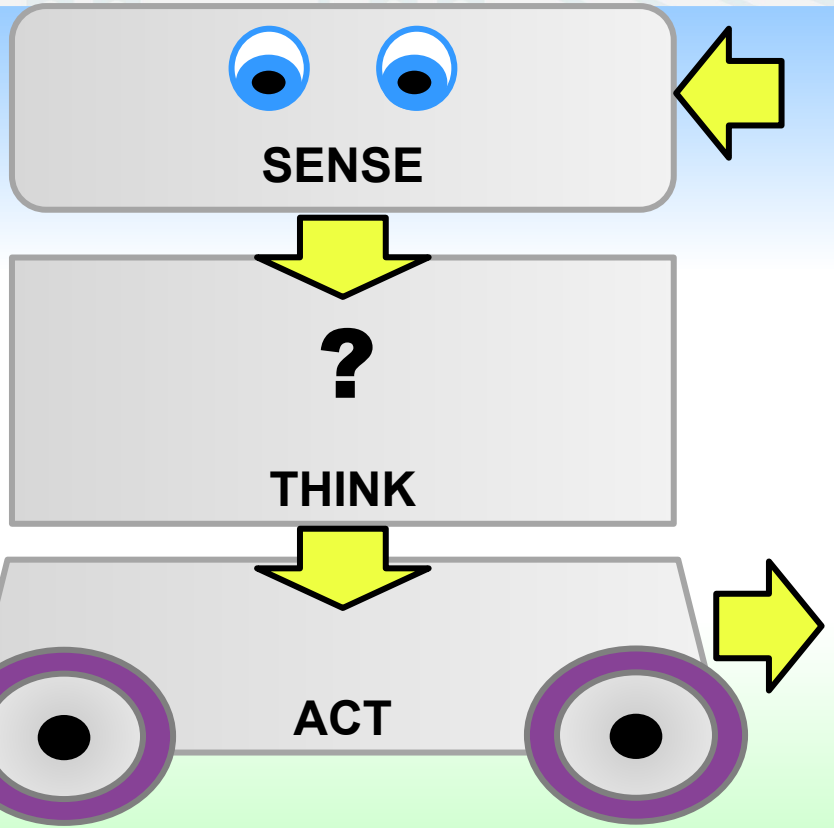
Take a peek inside

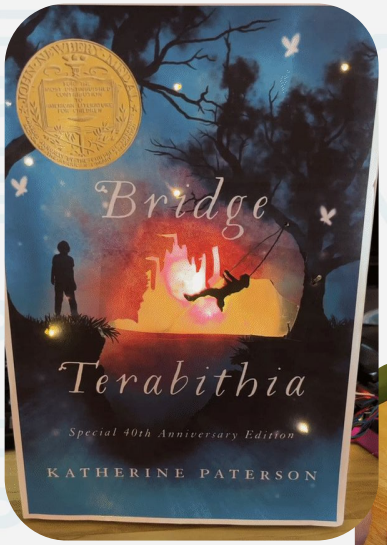
Sense-Think-Act Robot

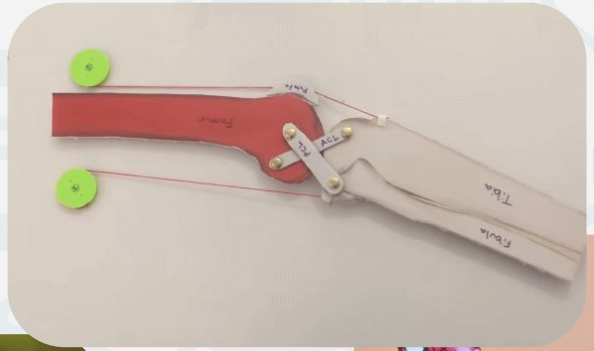


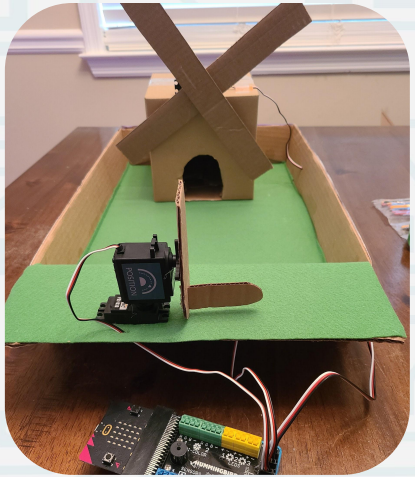




What can you make with the Hummingbird Kit?







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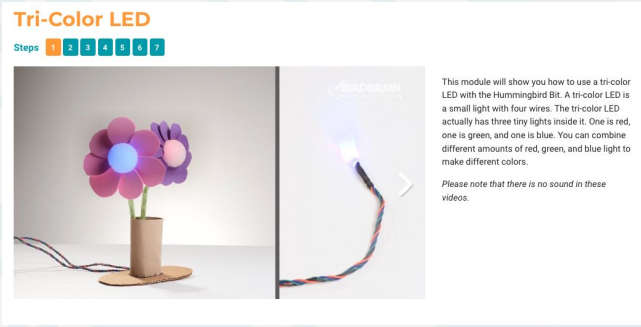
Hummingbird Resources

[Start Teaching]



[Programming Tutorials]

[Professional Development]

Borrow a Kit for FREE!

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More Hummingbird Resources

Borrow HB Kit Free → birdbraintechnologies.com/demo

Purchase HB Kit → store.birdbraintechnologies.com

HB Project Library → learn.birdbraintechnologies.com/hummingbirdbit/projects/

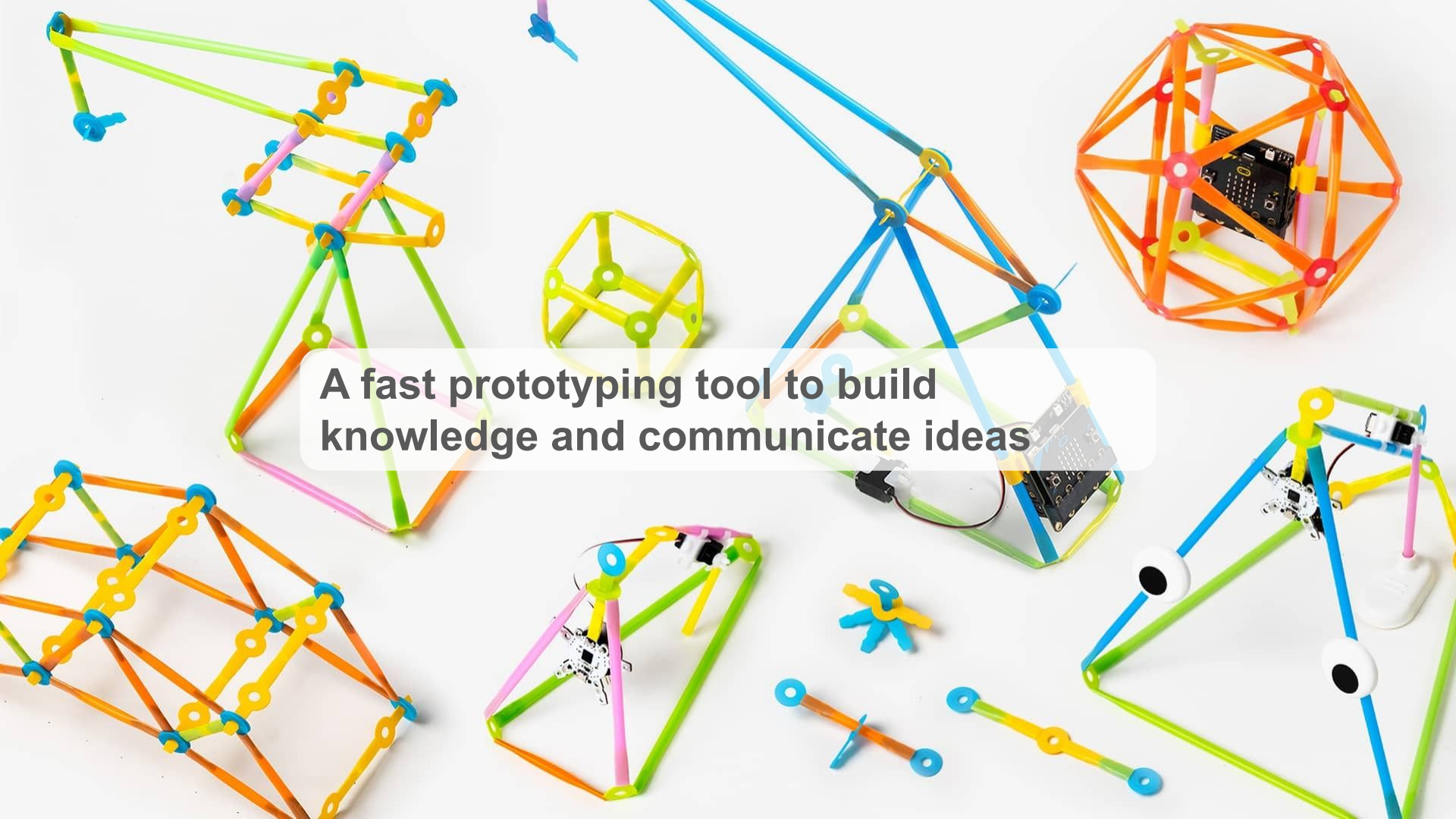
Flocking Amazing Podcast

Facebook Educators Group

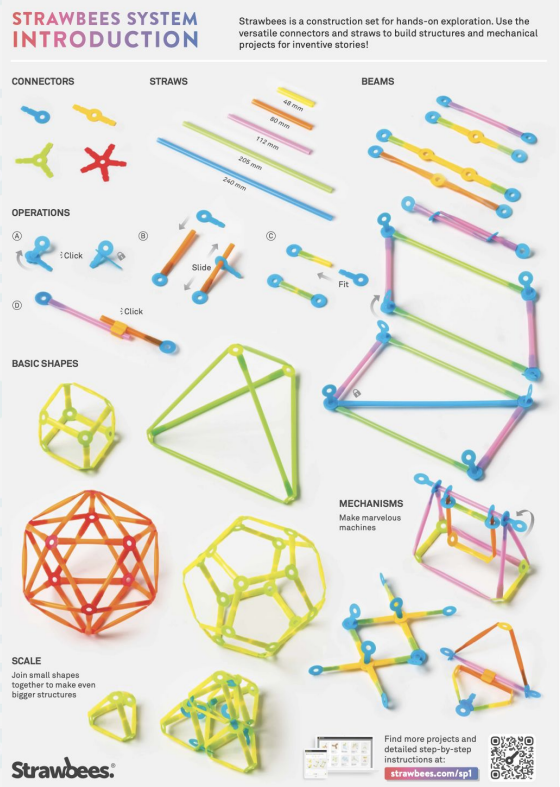
@birdbraintech

What questions do you have?

MEET STRAWBEES


A fast prototyping tool to build
knowledge and communicate ideas

Strawbees introduction



You and your best friend have developed a secret language. Create the letters of your name in this new language!

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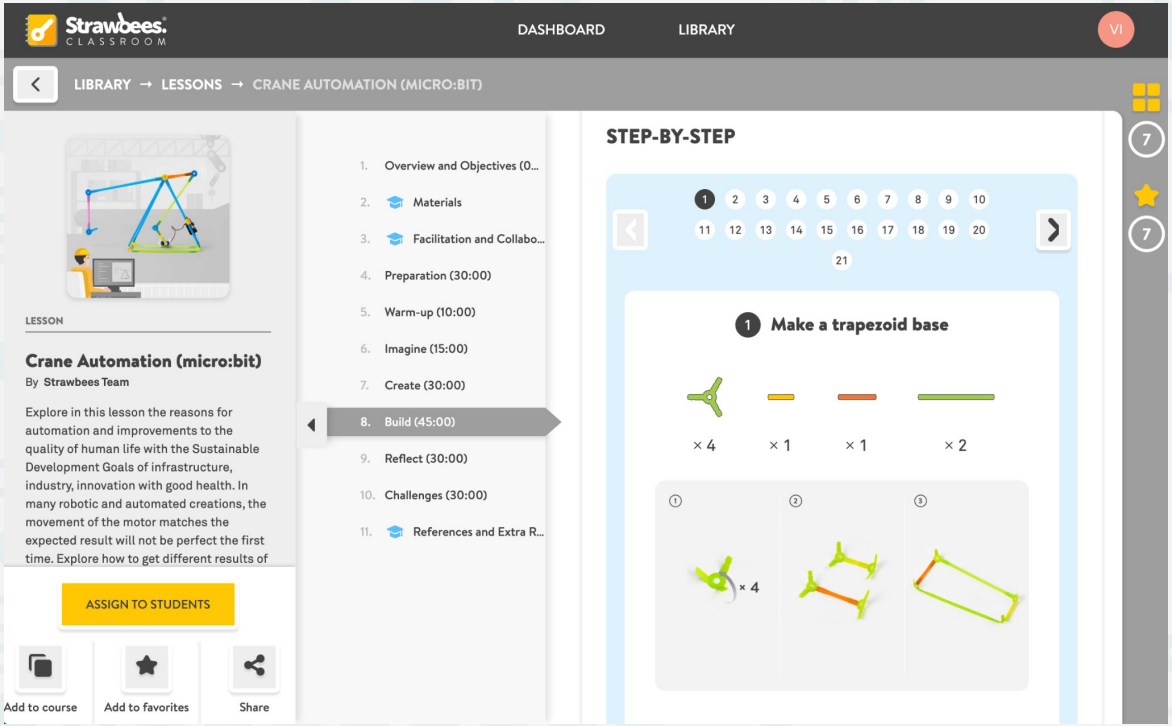
Classroom content & Collaborative Builds



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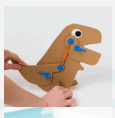
Strawbees Resources

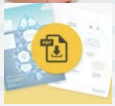
Free Access to Strawbees Classroom - sign up 👉 Link

Strawbees Classroom Walkthrough Link

Strawbees Summer Camp Course Link



Simple STEAM Ideas Downloadable PDFs Link (no Strawbees needed!)



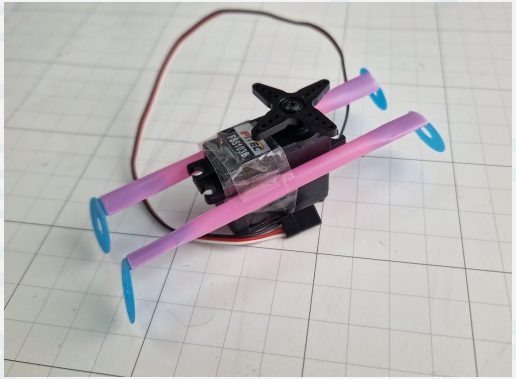
Deep Learning Free Downloadable PDF Link

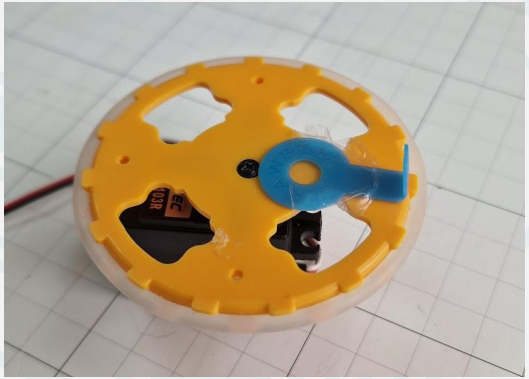
Teacher Support Link

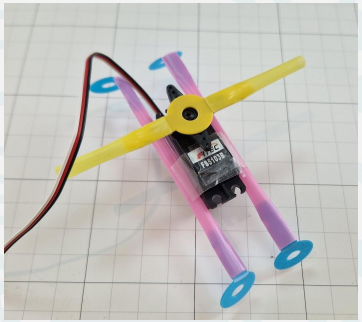
What questions do you have?

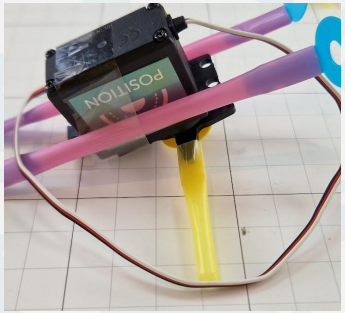
STRAWBEES + HUMMINGBIRD

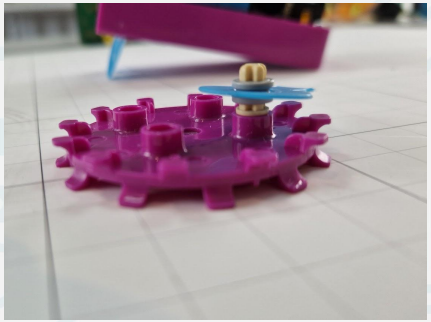
Strawbees + Hummingbird basics

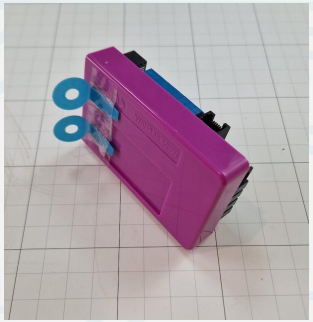


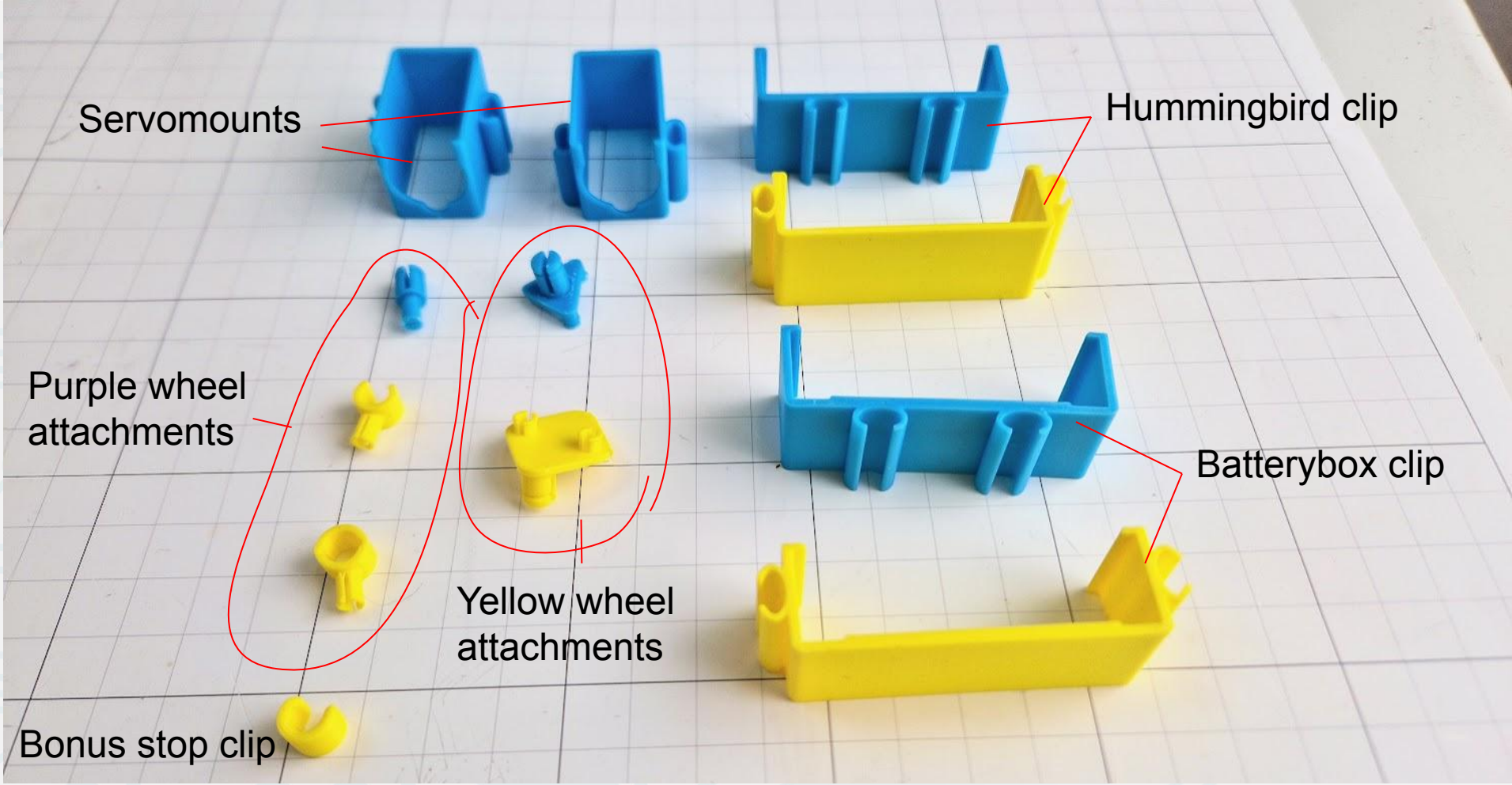


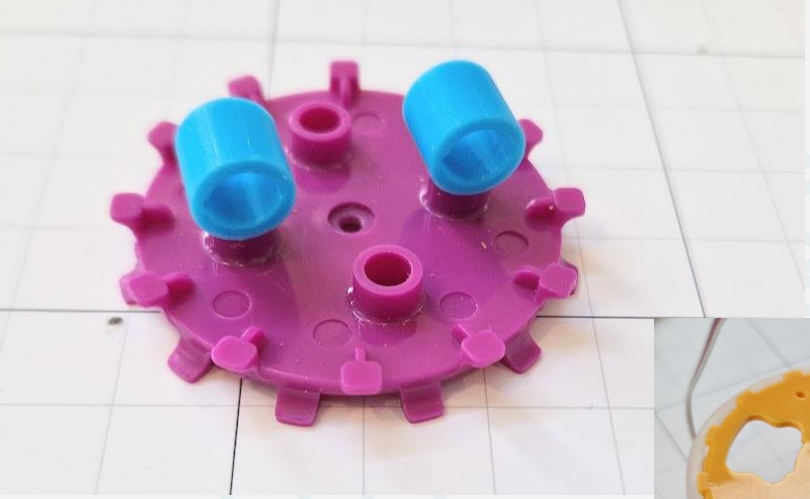


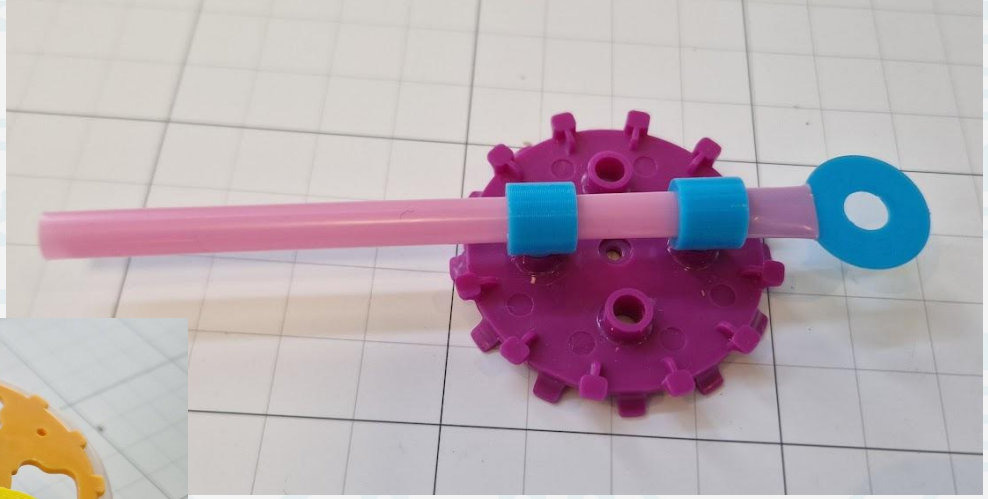


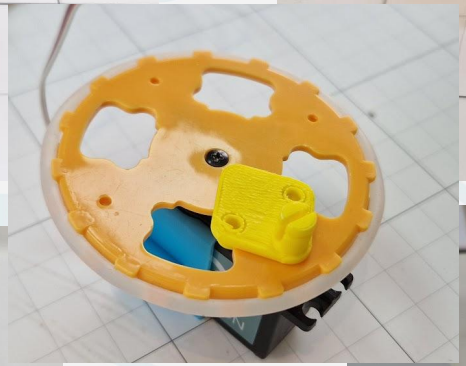


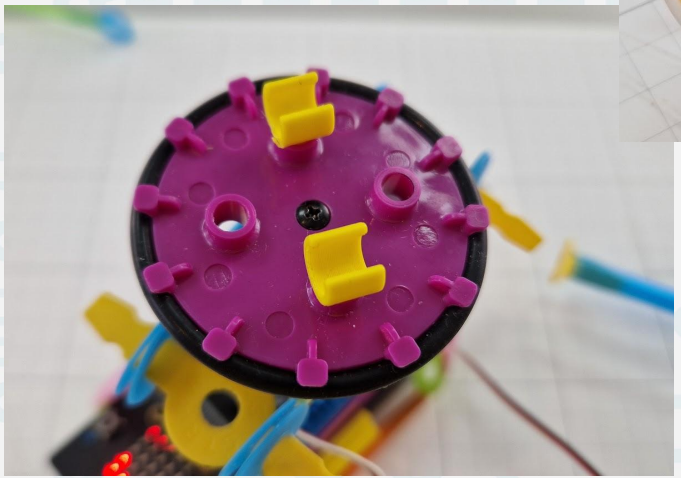


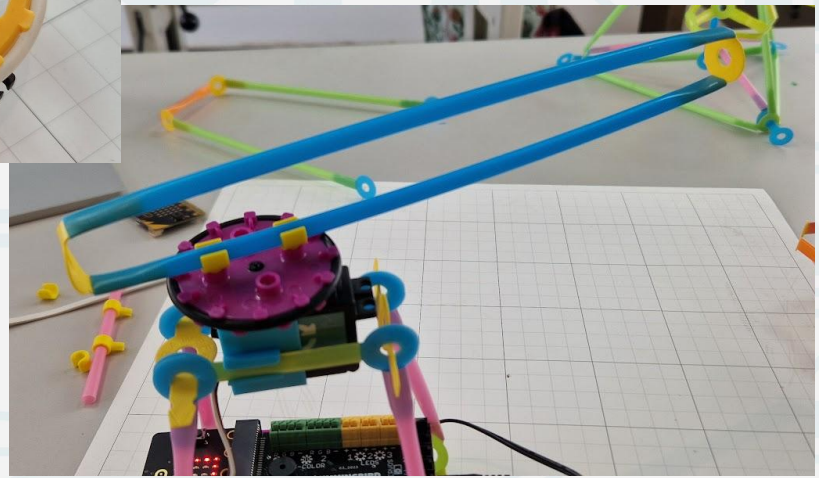

Servomounts
Hummingbird clip
Purple wheel attachments
Yellow wheel attachments
Batterybox clip
Bonus stop clip











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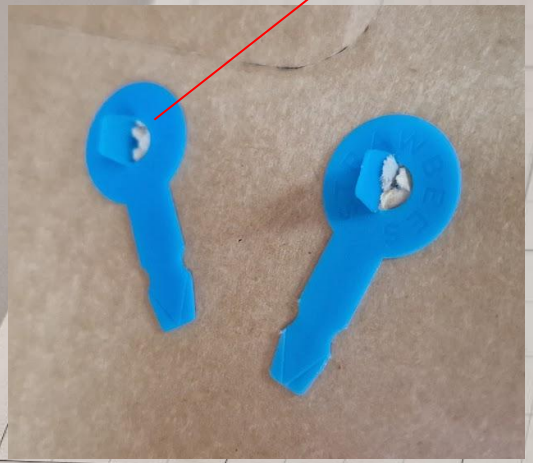
Rails

Locks or connection points



Connection points

Pencil holes

Strawbees®
VIRTUAL INSTRUCTION

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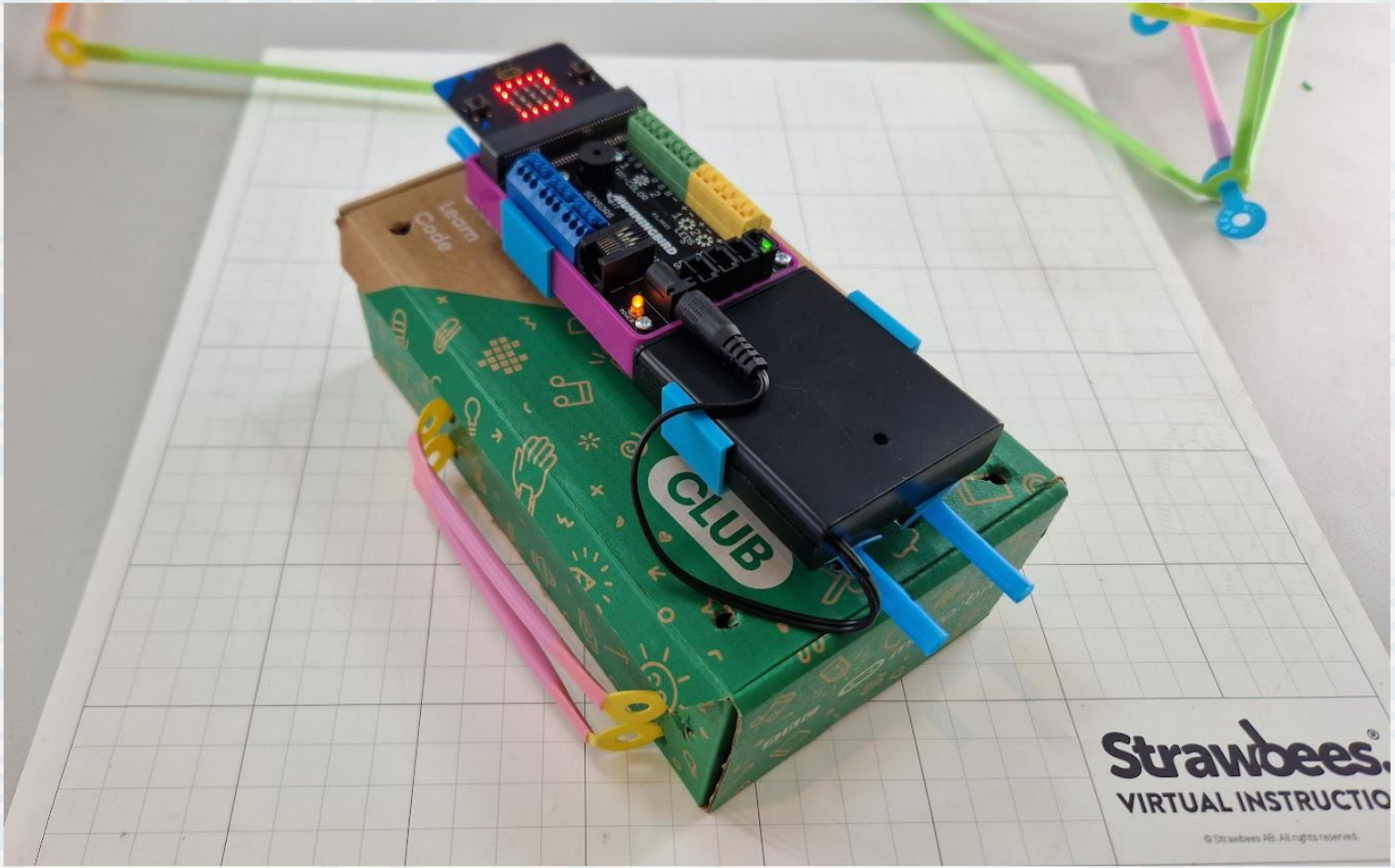

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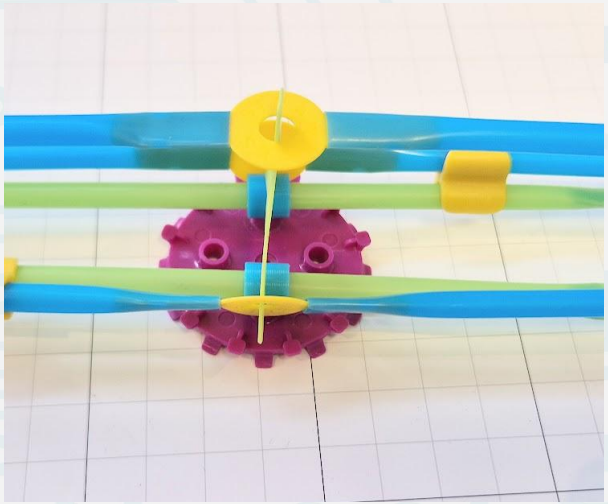
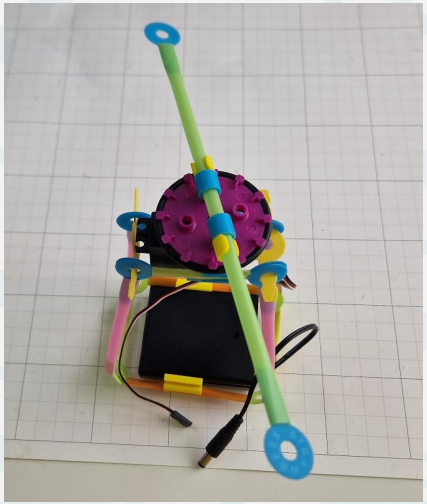
Combining 3D prints, cardboard hacks on birdbraintechnologies.com with rails holes and connection points makes for a highly iterative and creative design process.





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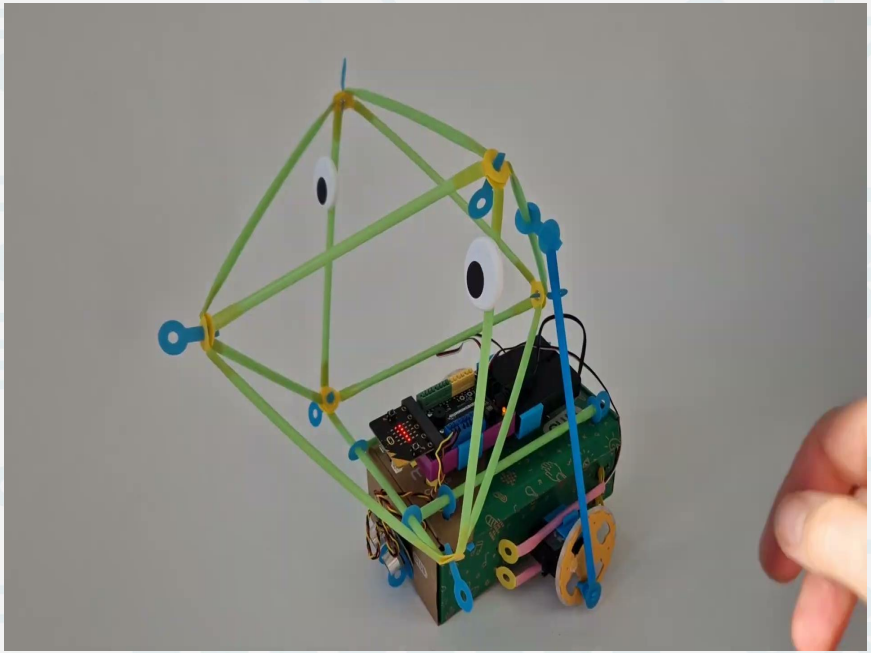

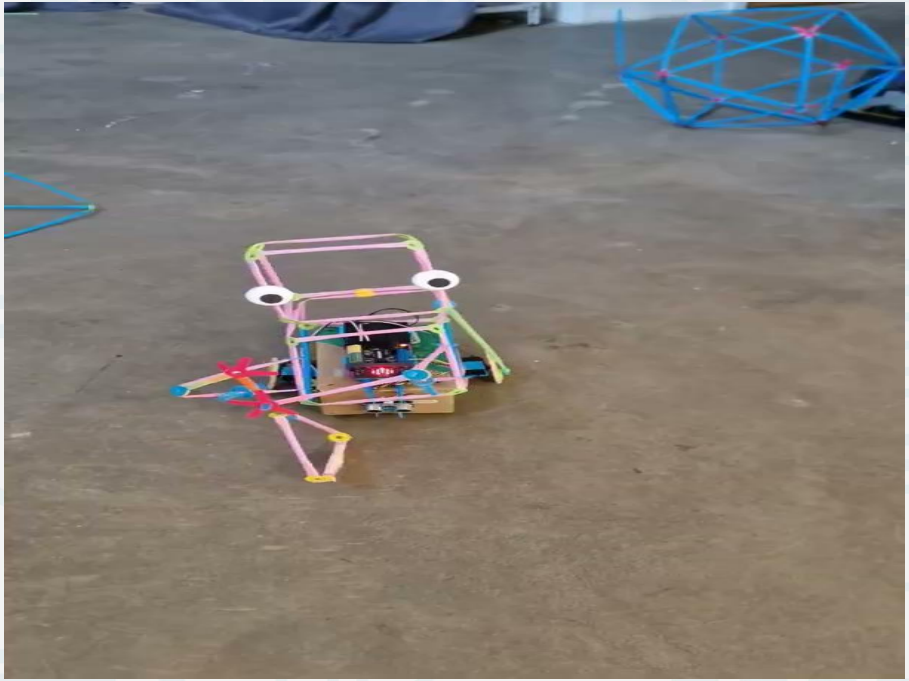

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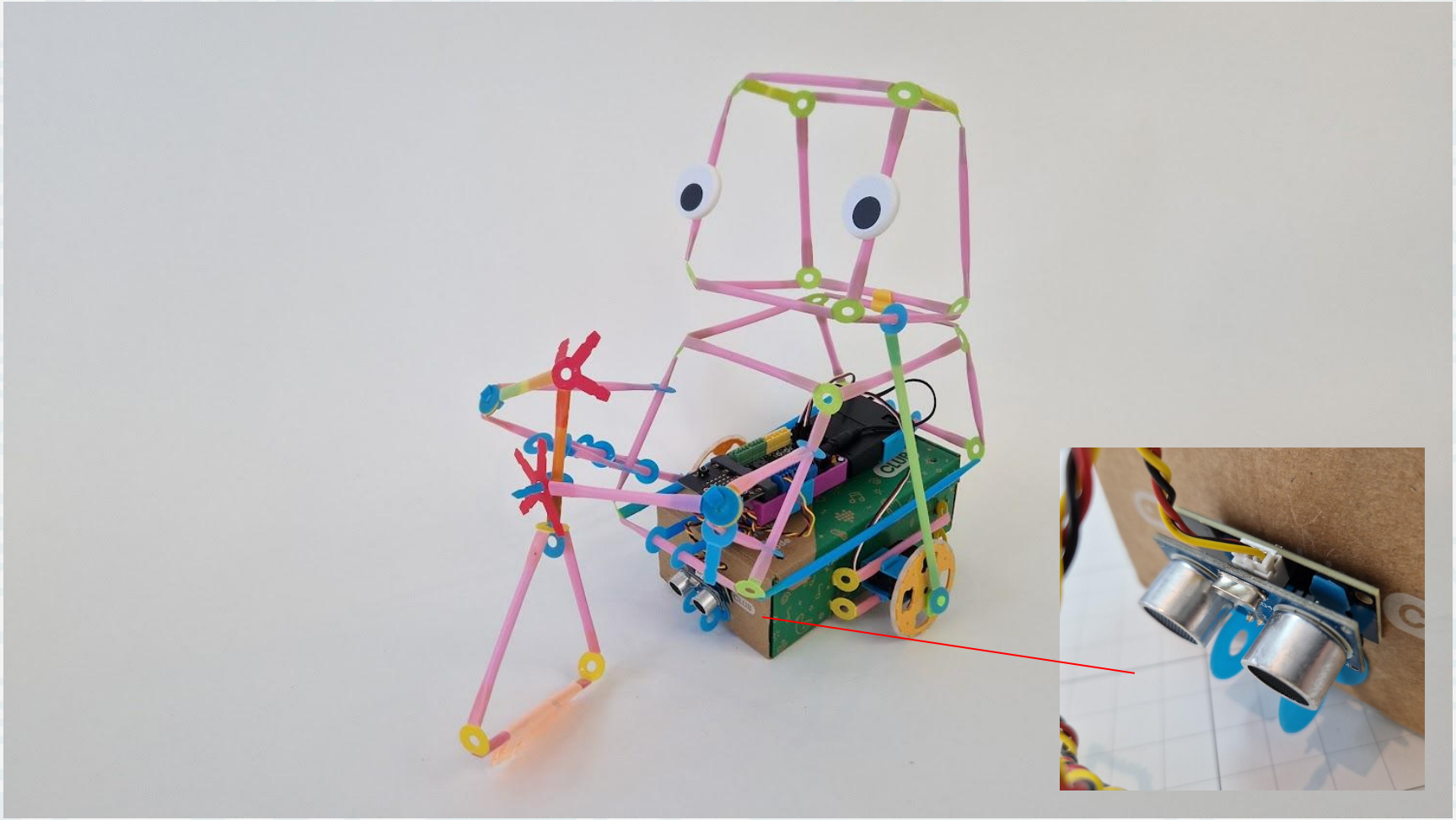

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What questions do you have?

LET'S GET SPOOKY!

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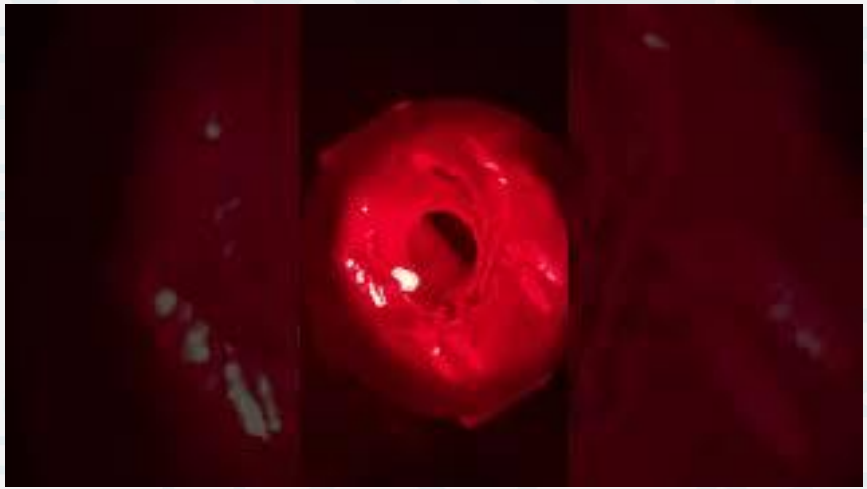
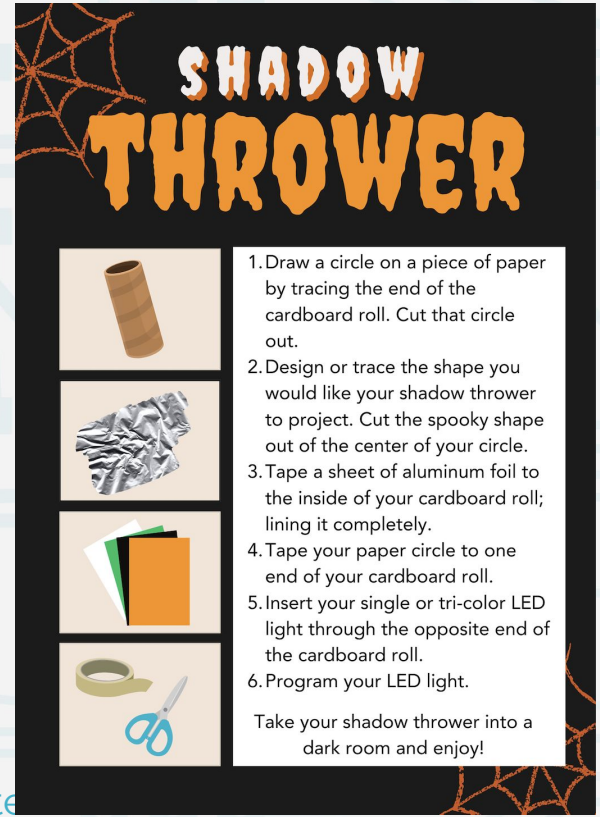
Shadow Thrower

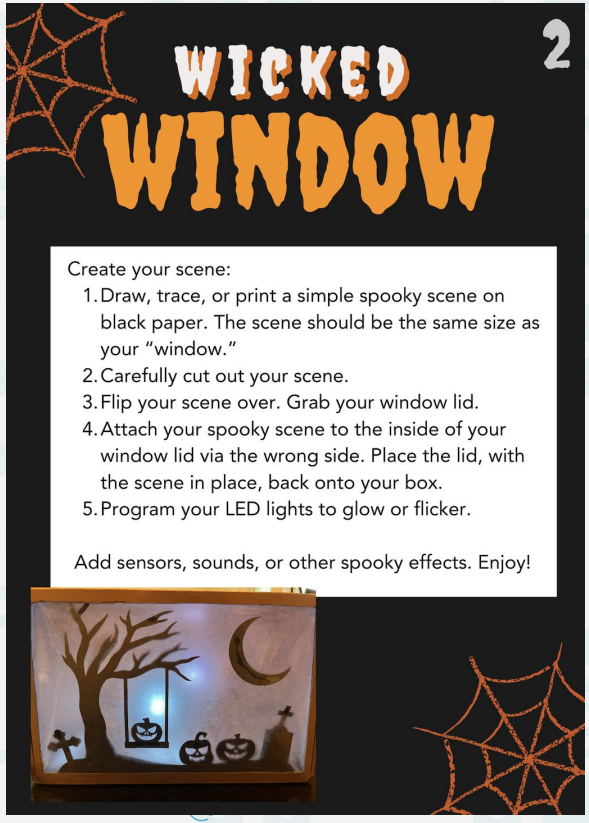


Sample Code:



@birdbrainte

Wicked Window



Sample Code:

Jump Scare

JUMPSCARE BUILD

Share your work! @CodeJoyEdu

Step 1:

- ☐ Create the front layer
- ☐ Create the "jump out" element

The front layer should be big enough to completely hide the element that "jumps out."

Step 2:

- ☐ Attach the "jump out" element to a popsicle stick
- ☐ Attach the popsicle stick to the servo horn with hot glue or tape

Step 3:

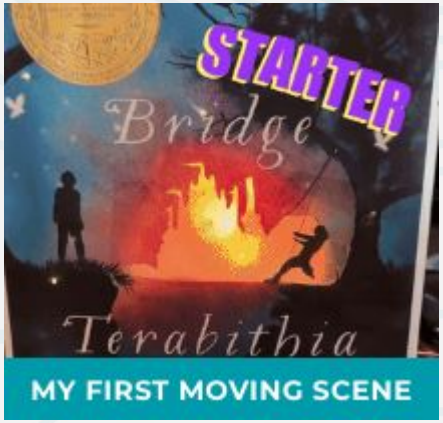
- ☐ Snap on the servo horn with the "jump out" popsicle stick to the motor
- ☐ Attach the servo to the back of the front layer near the bottom with hot glue

Why should it be attached near the bottom?
What range of motion should the popsicle stick have?

Jack-O-Lantern

Sample Code:

Haunted Halloween Card

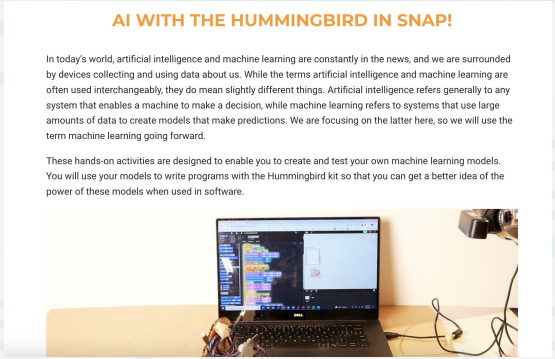


Sample Code:

AI Zombie Rover

First:

Next:



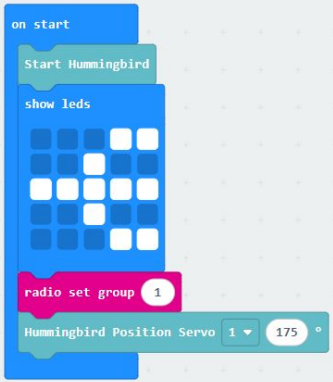
Halloween scares

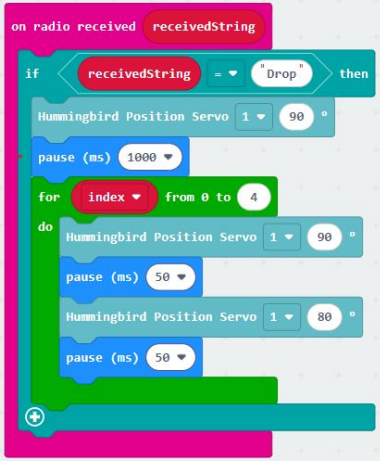
Series of fun Halloween jump scares built & prototyped using the same basic code with local and wireless trigger. Makes prototyping much easier works with both Robotic inventions and Hummingbird.

https://makecode.microbit.org/S18403-78254-12863-03602

https://makecode.microbit.org/S18403-78254-12863-03602

Remote code





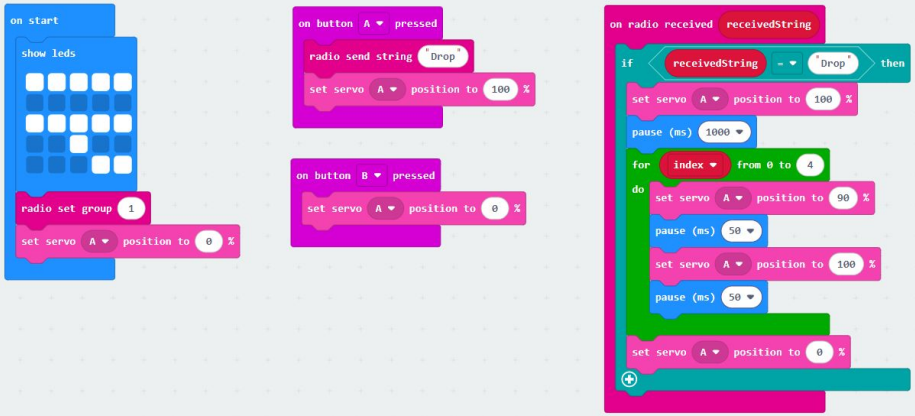
https://makecode.microbit.org/S18403-78254-12863-03602

Strawbees code

https://makecode.microbit.org/S18403-78254-12863-03602

Hummingbird code

Remote code



https://makecode.microbit.org/S18403-78254-12863-03602

Strawbees code

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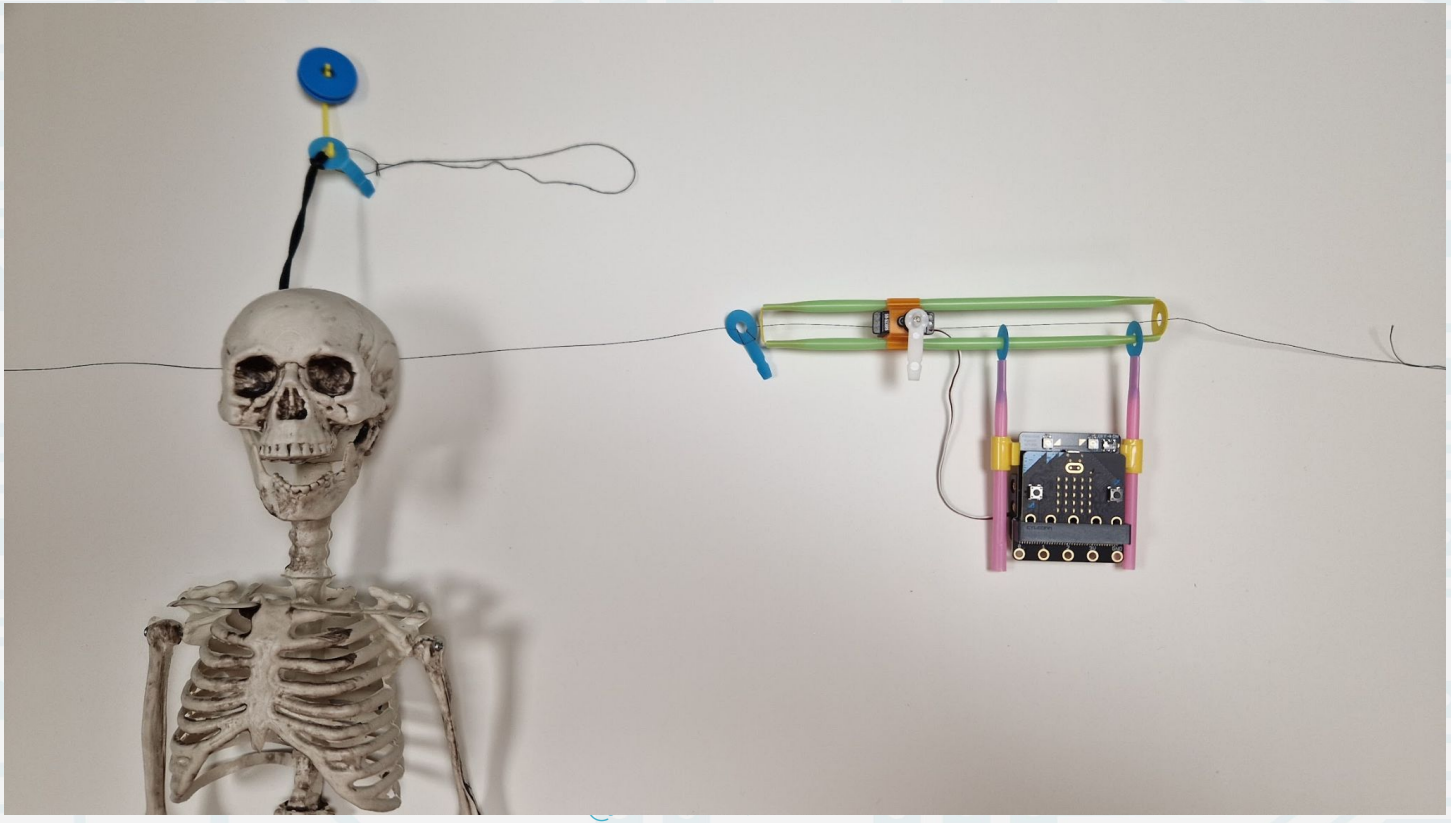
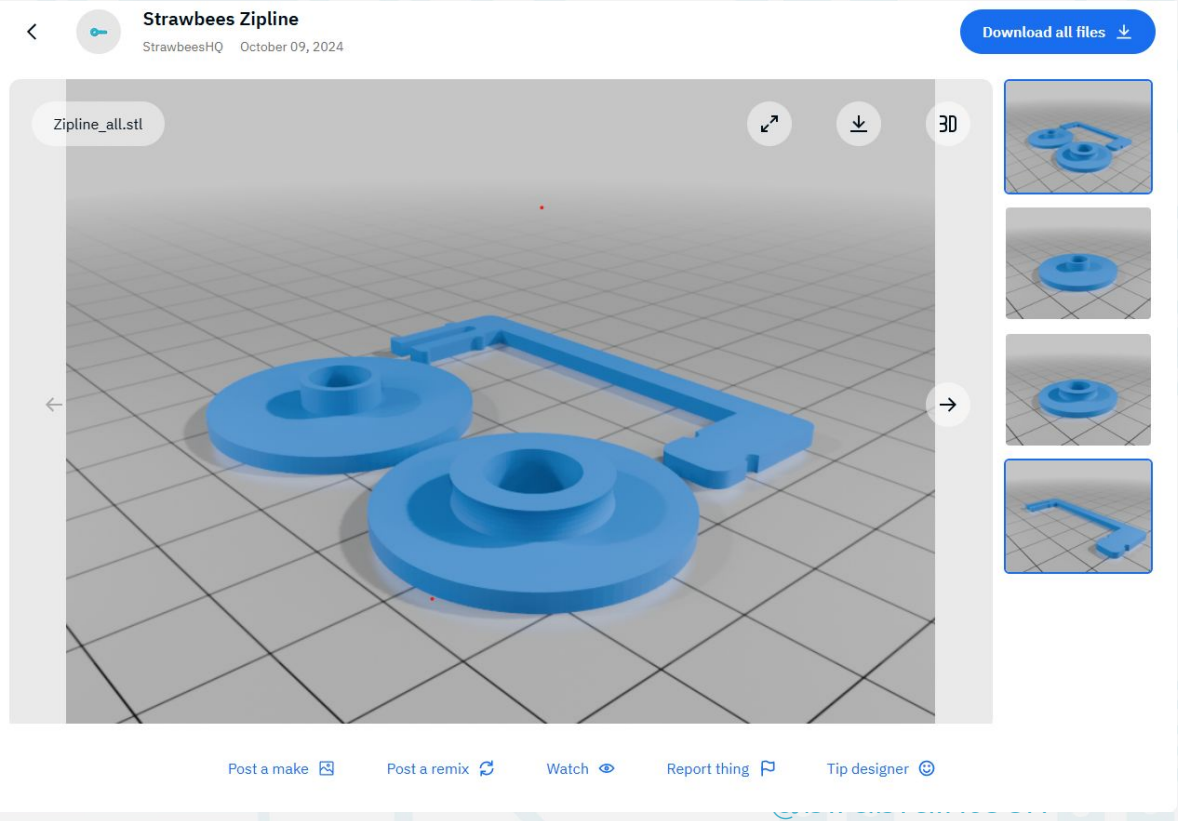
Hummingbird code

Zipline launcher

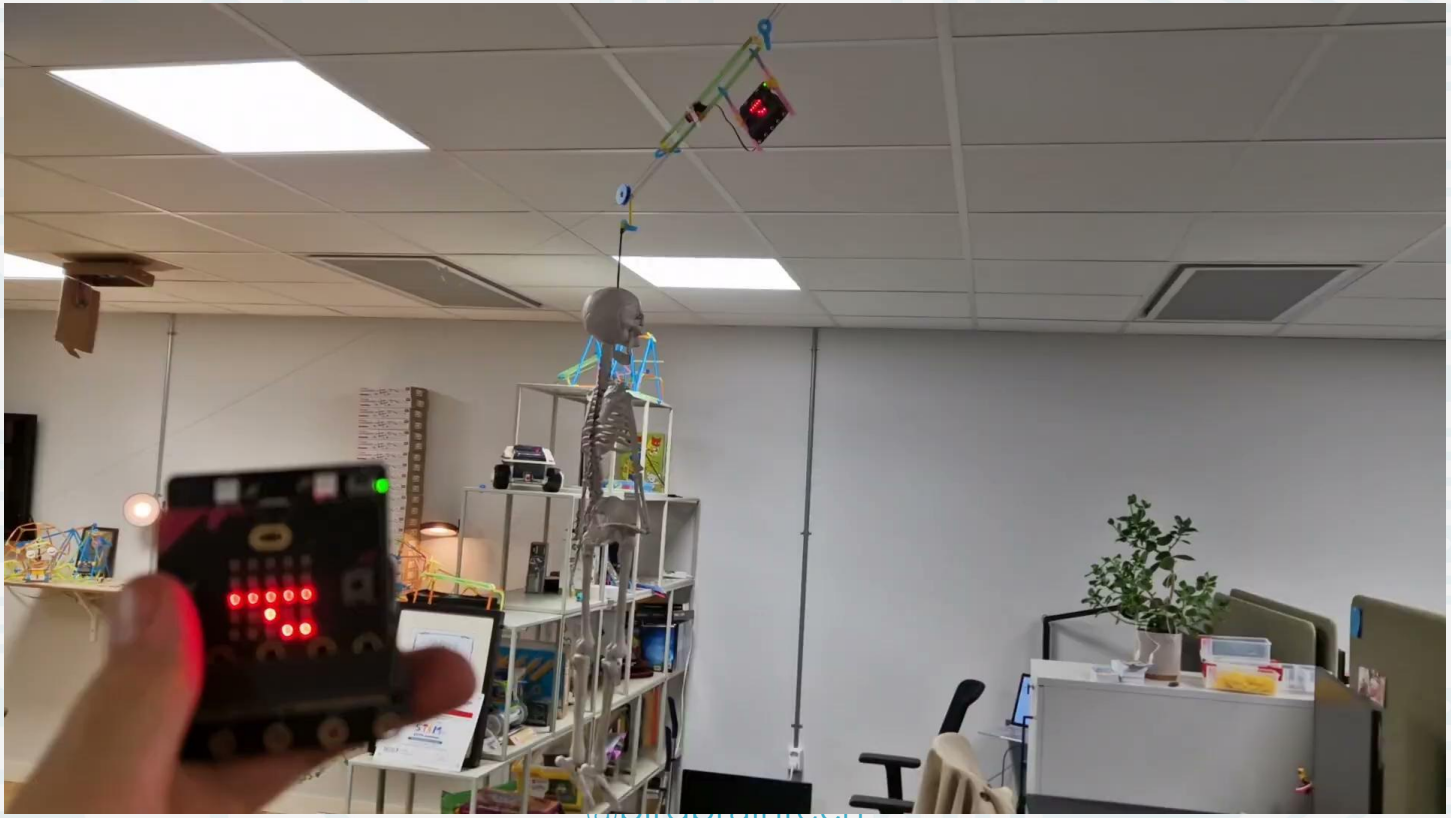


Zipline launcher

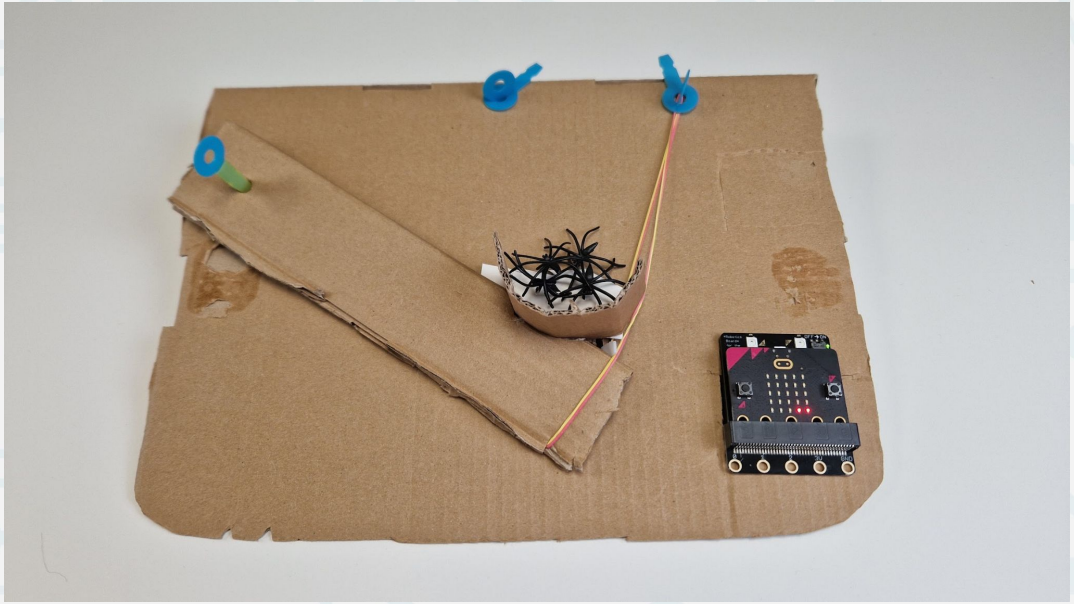


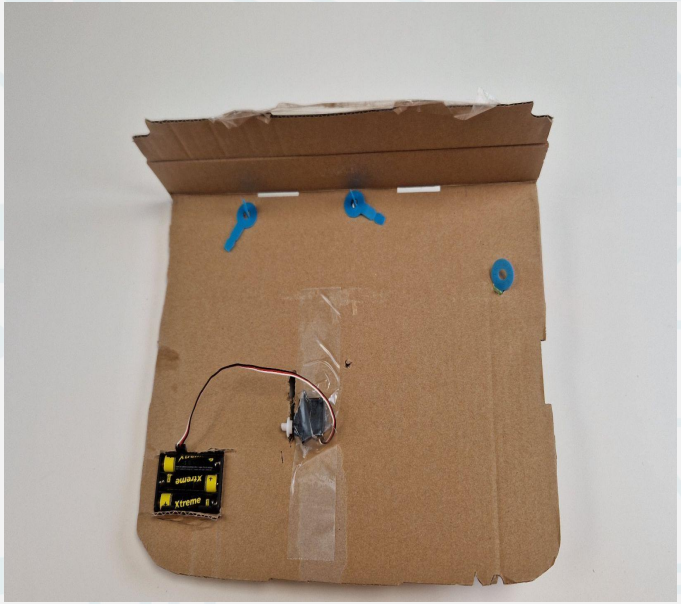
https://www.thingiverse.com/thing:6792047

Zipline launcher



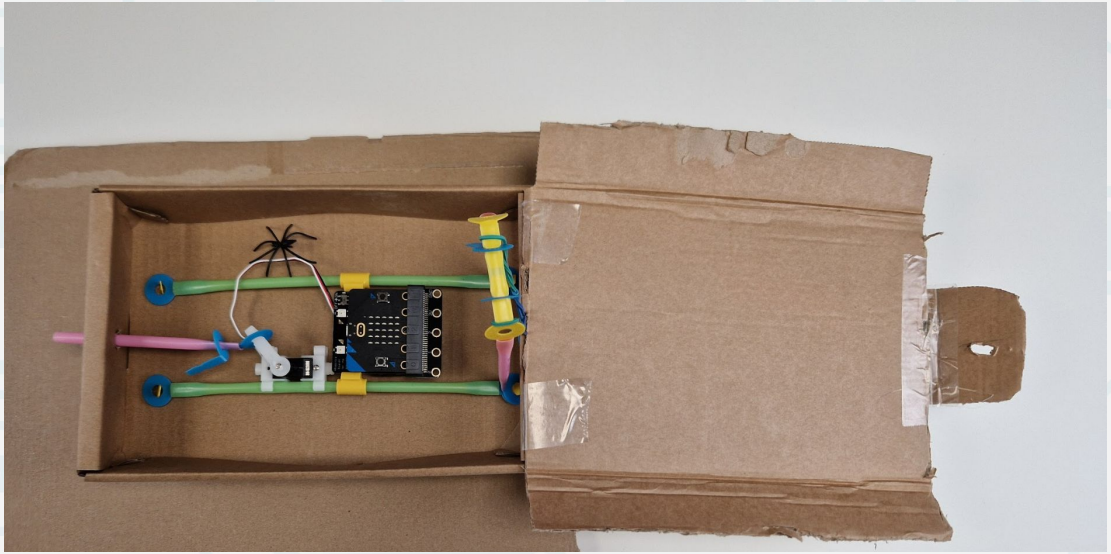
Spider (small object) launcher

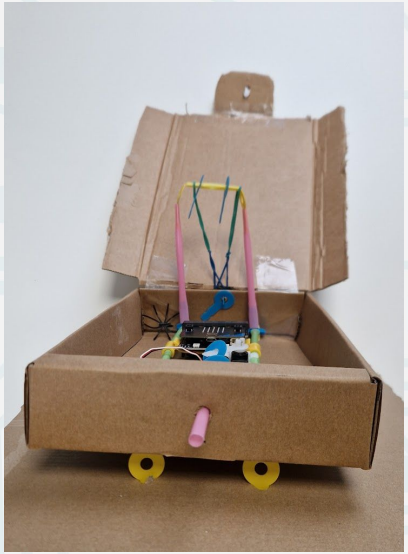




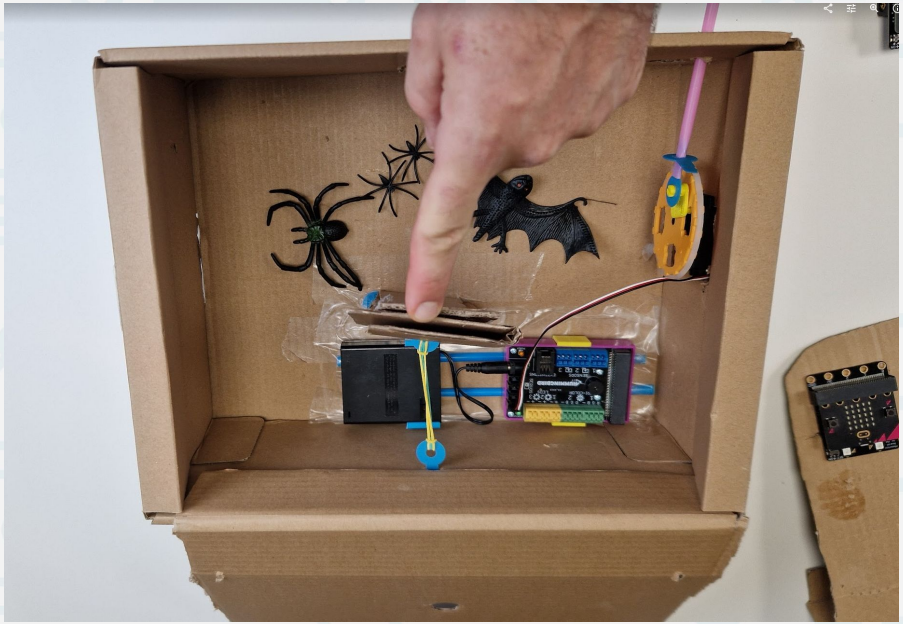
Spider (small object) launcher

SMALL SPIDER/BAT DROPBOX

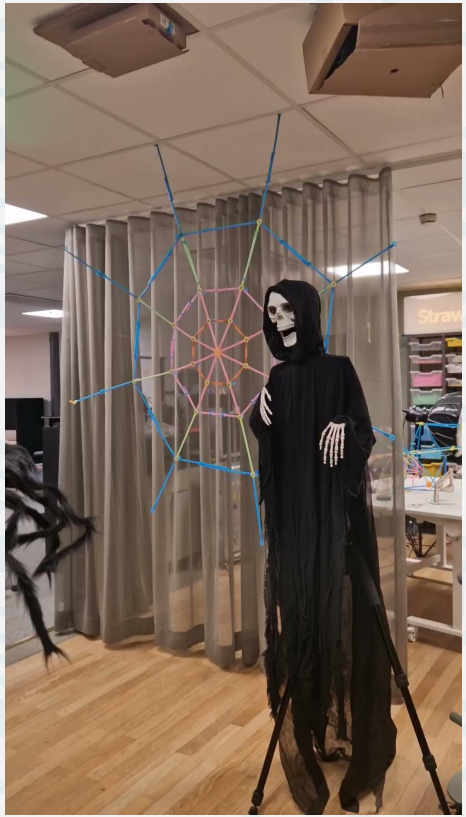




BIG SPIDER/BAT DROPBOX



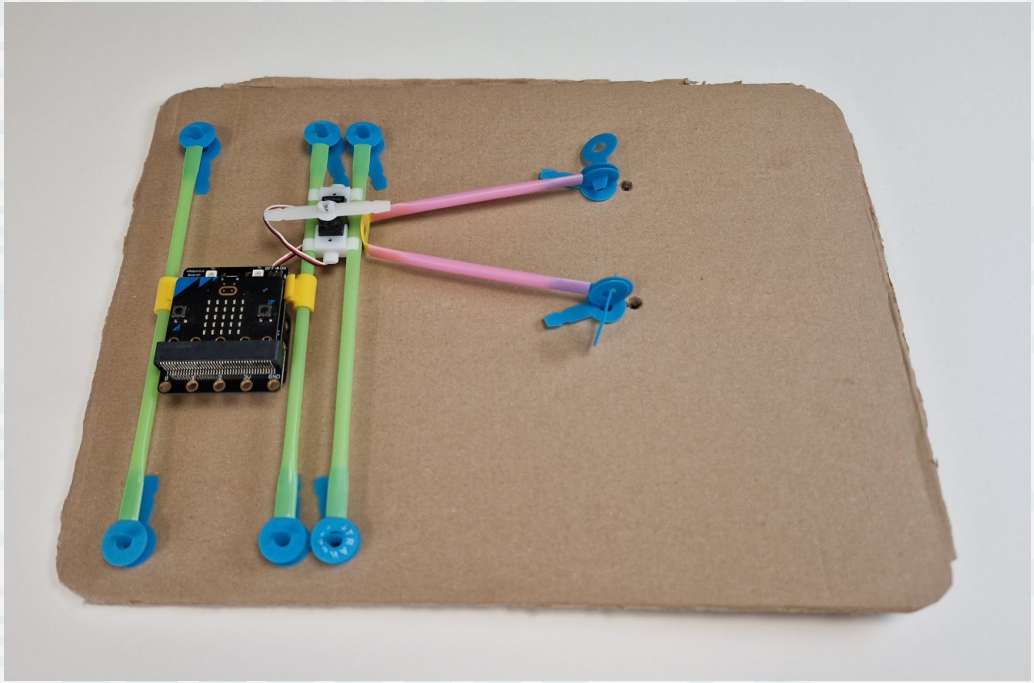
SPIDER/BAT DROPBOX



MOVING EYE PAINTING

Remote button press

SPIDER SWING



AI triggered jumpscares

Make teachable machine model

Teachable Machine

→

Replace remote with AI transmitter

https://makecode.microbit.org/_HMfC08esiLUY

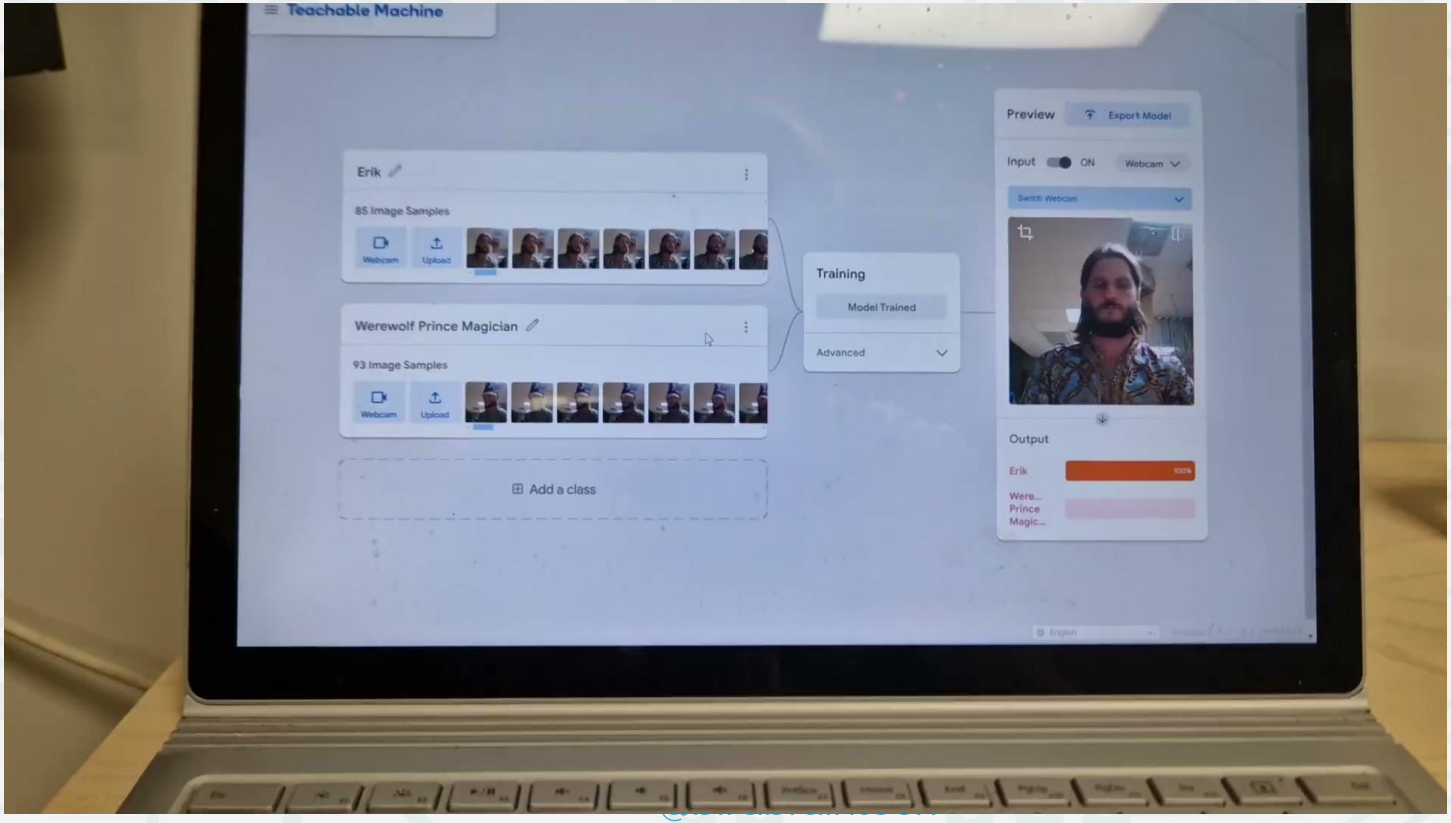
→

Connect Micro:bit to Teachable machine using https://makeairobots.com/

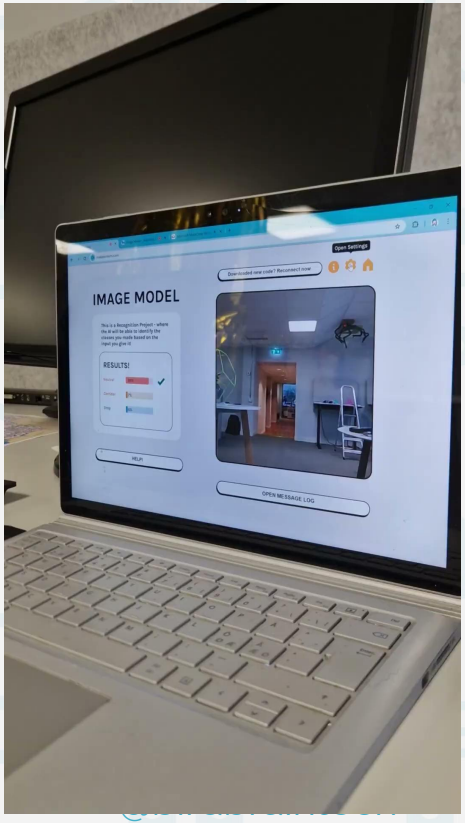
AI triggered jump scares

https://makecode.microbit.org/S67434-60864-45923-08536

AI triggered jump scares



AI triggered jump scares



Halloween “pranks”

1	2	3	4	5
ZIPLINE LAUNCHER	SPIDER SHOOTER	SPIDER SWING	SPIDER/BAT DROPBOX	MOVING EYES PAINTING

FREE RESOURCES

@birdbraintech @Strawbees

Slideshow Links

Strawbees Halloween Webinar Blog Post (all resources included!)

- Shadow Thrower video
- Wicked Window video
- Jump Scare video, Jump Scare lesson plan
- Jack-o-Lantern project materials
- AI Zombie Rover video, AI with Hummingbird in Snap! activity directions
- Micro:bit & Teachable machine for Strawbees Ai Training (makeairobots.com)
- Strawbees AI pdf https://www.strawbees.com/ai-classroom-activities
- Strawbees Zipline 3D print https://www.thingiverse.com/thing:6792047

BirdBrain Resources

- BirdBrain website
- Borrow a Hummingbird Kit free for 60 days
- Buy your own Hummingbird Kit (or a Flock)
- Hummingbird Resources:
  - Start Teaching: This guide has everything you need to start teaching with the Hummingbird Bit Robotics Kit
  - Programming Page: Step-by-step video tutorials to program your Hummingbird Kit
  - Build Page: Instructions and tips for building robots
  - Projects Page: Projects to integrate the Hummingbird Bit with your curriculum
  - Printables Page: Classroom-tested printables, planning tools, and more

Get started with Strawbees

STEAM Classroom

Suitable for classroom > 30 students

STEAM Classroom Robotics – micro:bit

Suitable for classroom > 30 students

FREE ACCESS

Strawbees. CLASSROOM

Over 200 Resources

Curriculum-aligned Lessons

Training

ISTE

Aligned with ISTE Standards for Students and Educators

classroom.strawbees.com

Contact us: info@strawbees.com
Shop: strawbees.com/shop
Find us on social: @strawbees

Thank you for being here!

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