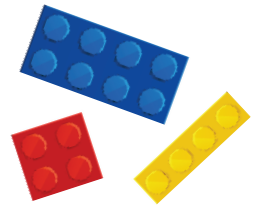


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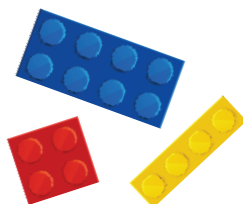
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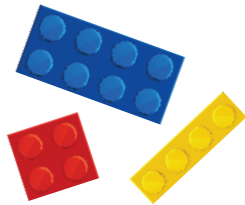
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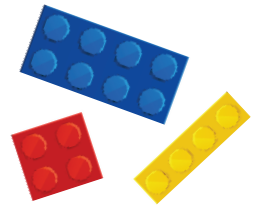
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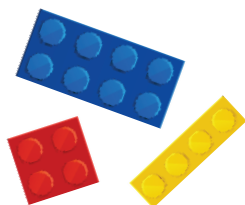
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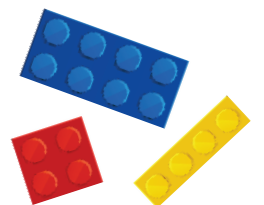
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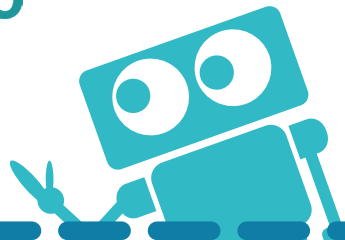


7

Design something you would wear.



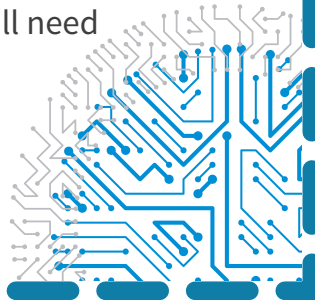
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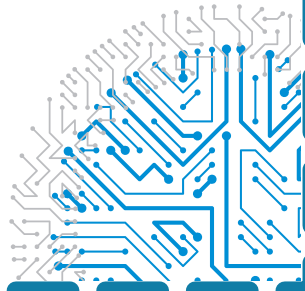
Design a smart home device.

5



Design an automatic nightlight.

6



Design a motion alarm.

7



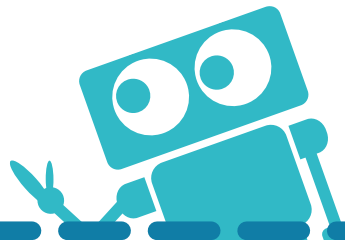
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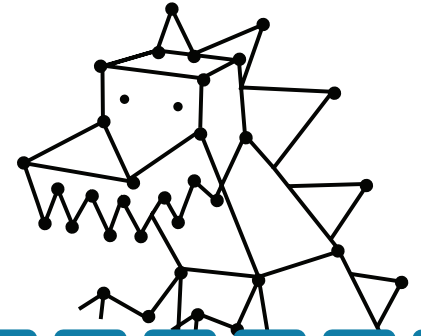


Strawbees.®



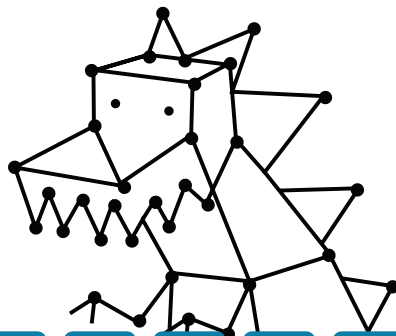
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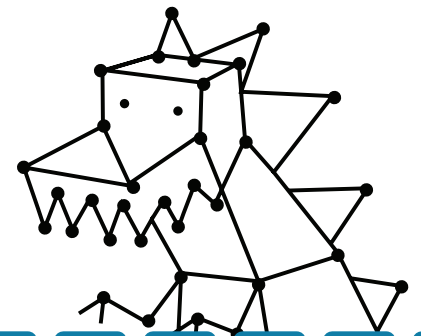
2

Design a throwing arm.



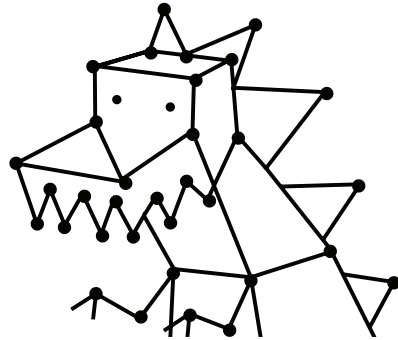
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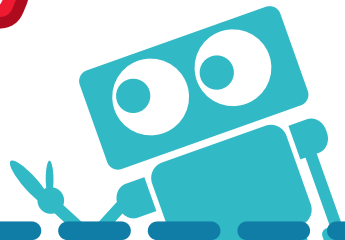
7

Design a living thing and program it to move.

Examples: human walking, snake slithering



8



1

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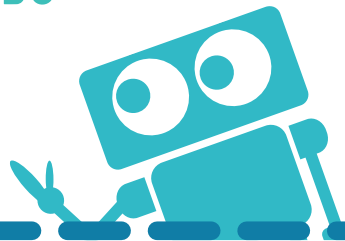
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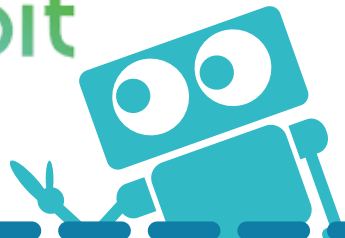


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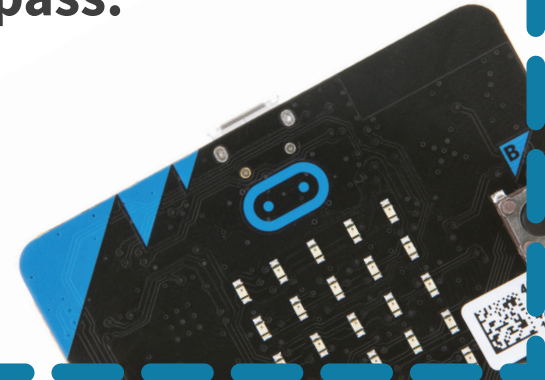


8



1

Create a compass.



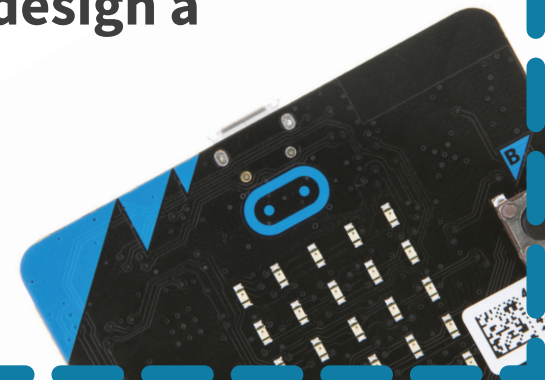
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3

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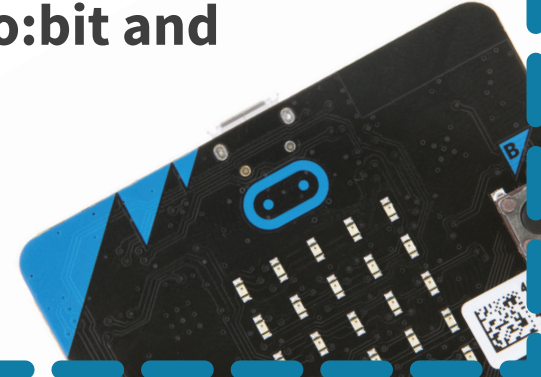
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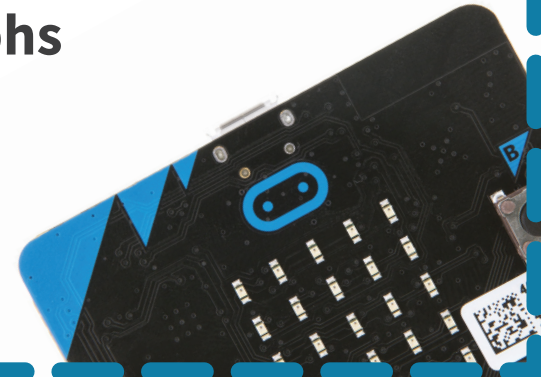
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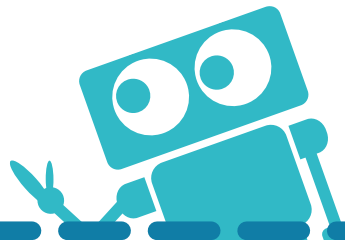


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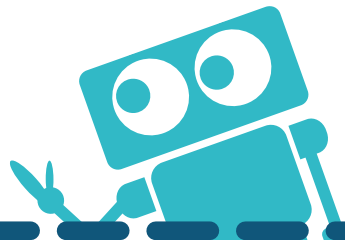


7

Design an obstacle course using other items from the makerspace (LEGO®, Strawbees, K’Nex, etc.) and have time trials against your friends in navigating through the course.



8



1

The Hummingbird Duo can be used with many programming languages, depending on what you'd like to create.

Visit birdbraintechnologies.com for instructions for setting up your controller for various programming languages.

2

Design something to help an animal walk.

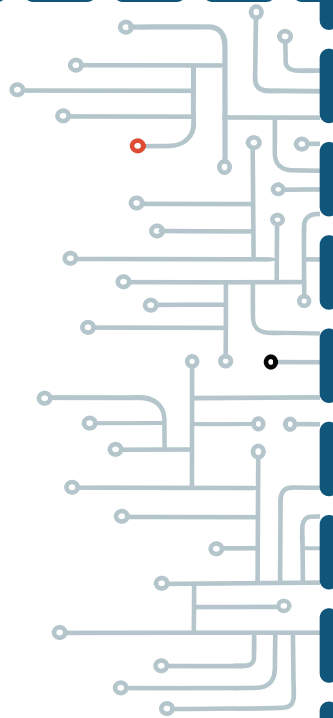
3

Design a fuel-efficient car.

4

**Recreate a scene from
a story or movie.**

5



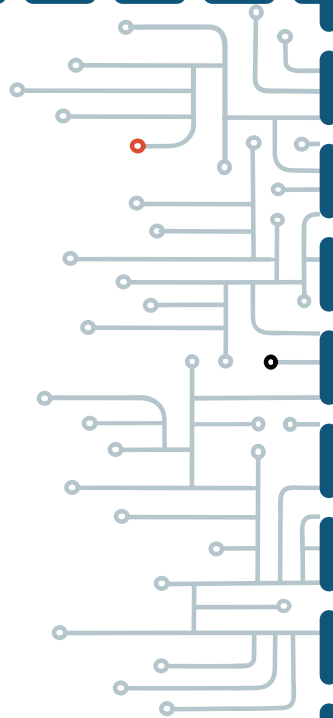
**Design a new
animal that moves.**

6



Design an alarm clock.

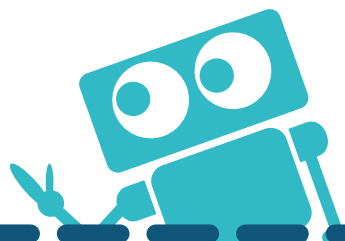
7



Design an arcade game.

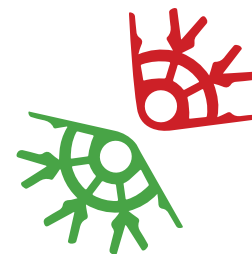
8





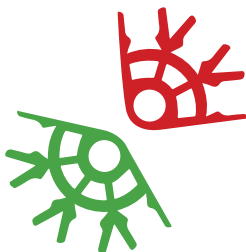
1

Design a DNA strand.



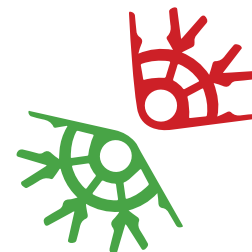
2

Recreate a historical structure.



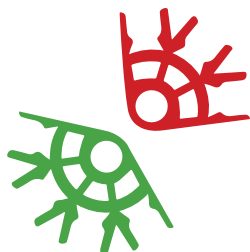
3

Build a scale and test its accuracy.



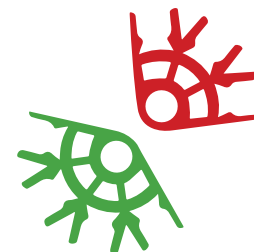
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Build a bridge with no more than 50 pieces and test how much weight it can hold (consider using books).



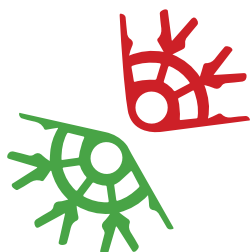
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Design a stand to display something in the classroom (a book, poster, etc.).



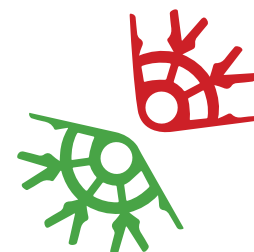
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Design a drawing machine.

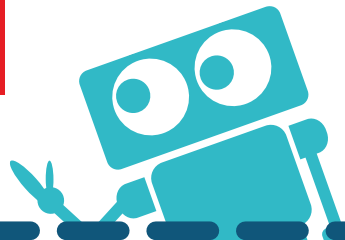


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Design a prosthetic limb.



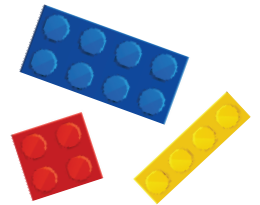
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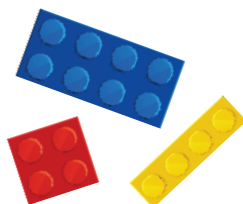
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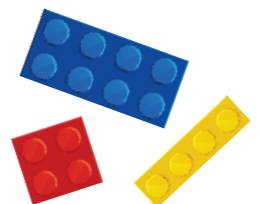
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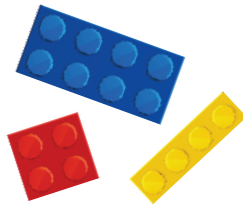
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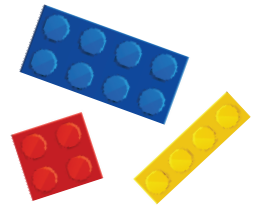
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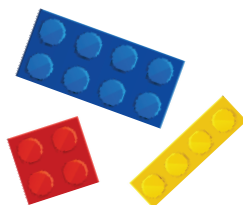
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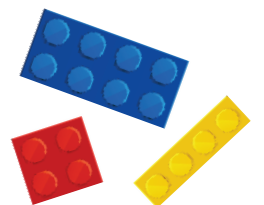
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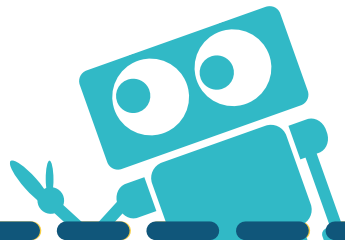
**Design something you would
wear.**



8



littleBits™



1

Design an art spinner.



2

Design a car that can write
your name.



3

Design a fan for really hot days.



4

Can you turn this fan into a bubble machine?



5

Design a device to clean your toothbrush.



6

Design a device to help keep babies safe.

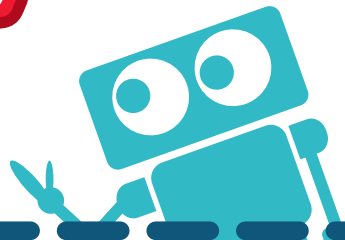


7

Design a game that is controlled from your phone.



8



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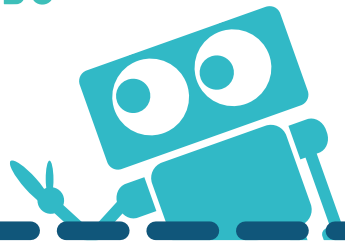
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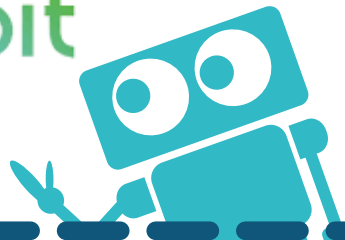


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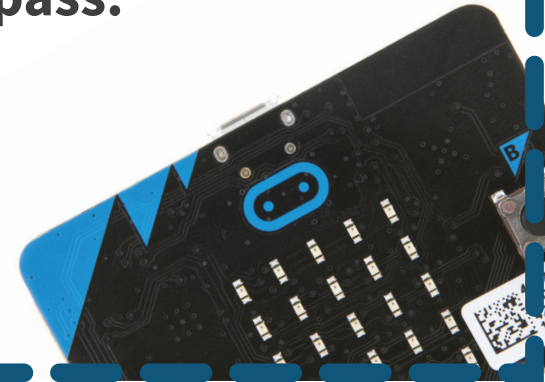
8



1

Create a compass.

2

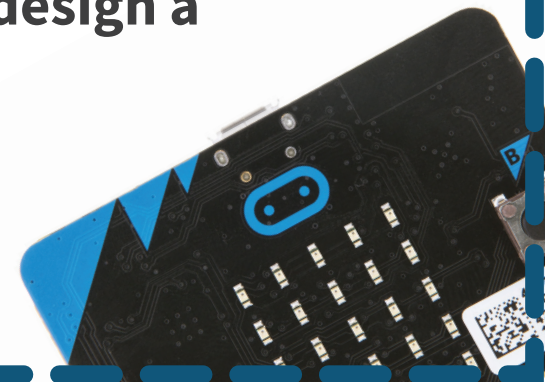


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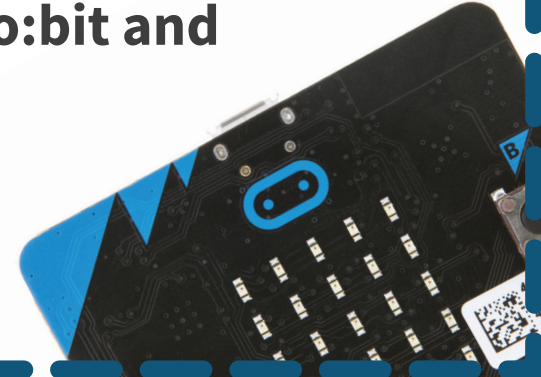
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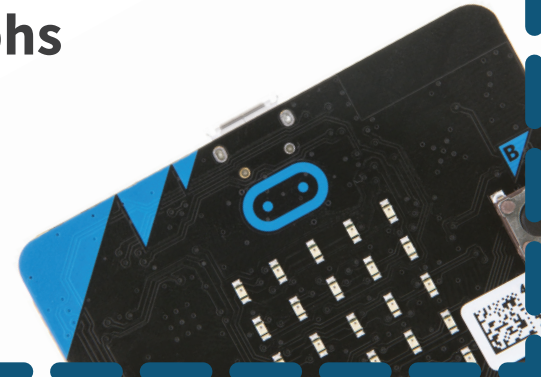
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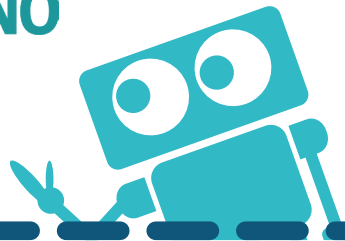


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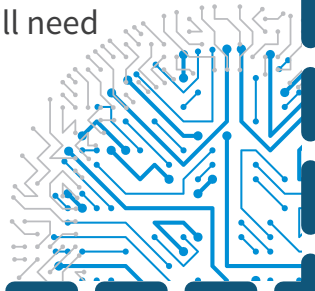
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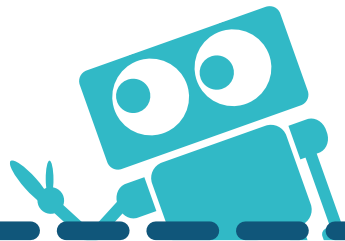
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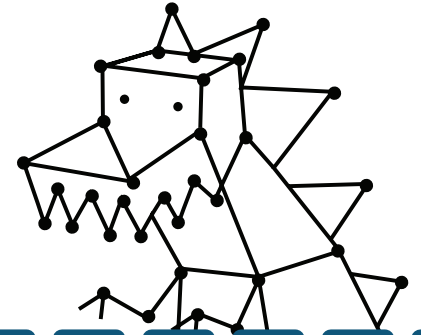


Strawbees.®



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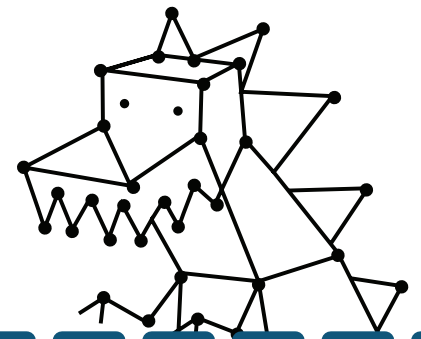
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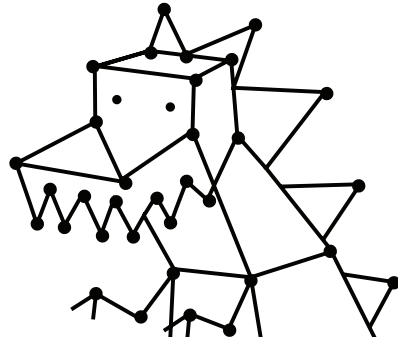
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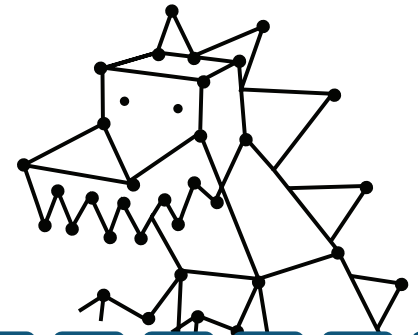
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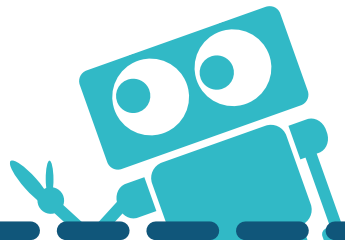
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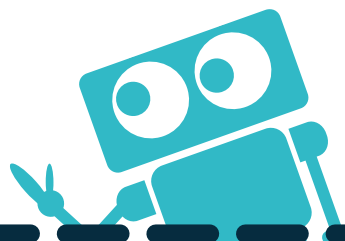


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8



1

Design a toss game with 3 different shapes representing 3 different point values.



2

Design an aircraft that can glide.



3

Design a working gear system containing 3 gears.

A helpful website is <https://geargenerator.com>.



4

Design a stencil to use with a pencil, crayon or marker that represents your school initials or logo.



5

Design shadow puppets for a famous story or movie.



6

Design a robotic hand with fingers that can be controlled with string or rubber bands.

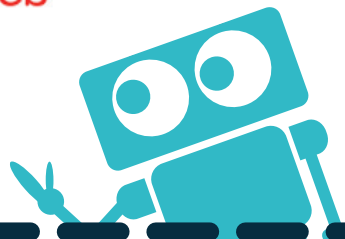


7

Design a house for a hamster that contains 3 stories.

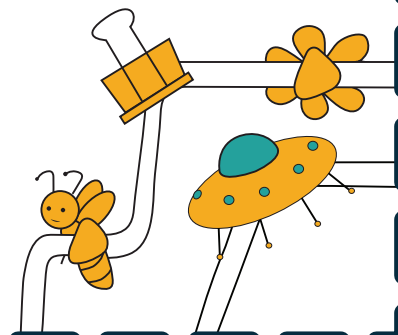


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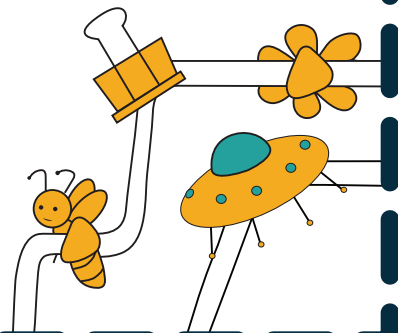
1

Design a “Walk / Don’t Walk” sign that blinks.



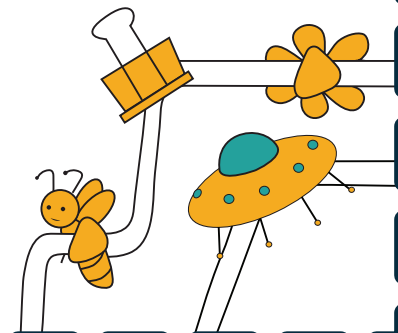
2

Design an “We’re Open” sign that blinks.



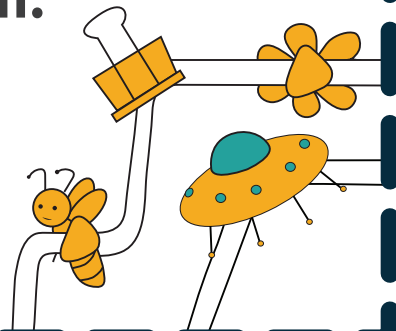
3

Design a greeting card that contains LED lights in parallel.



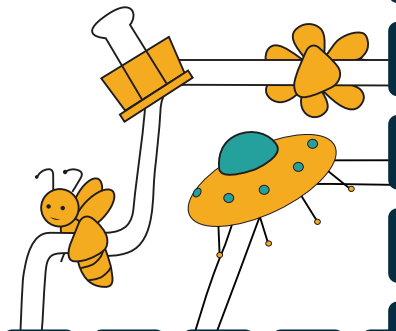
4

Design a greeting card with a pull tab slide switch.



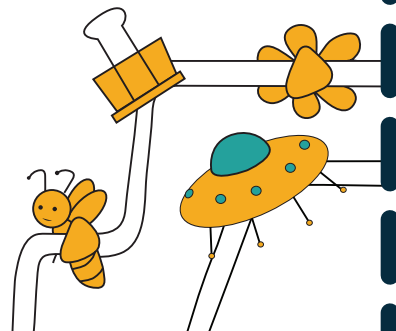
5

Build something runners could wear at night to keep them safe.



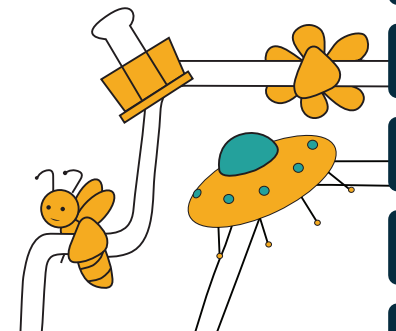
6

Design a piece of light-up jewelry.

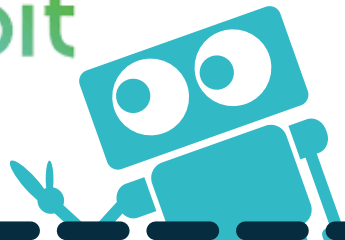


7

Design the constellation for your zodiac sign using a series circuit.



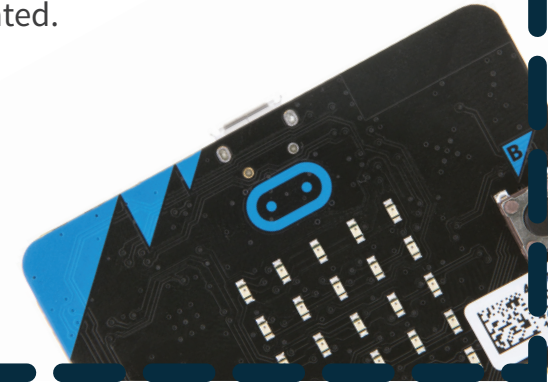
8



1

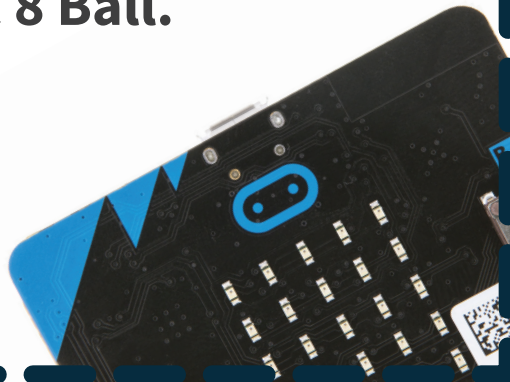
Design a compass.

This needs to be calibrated.



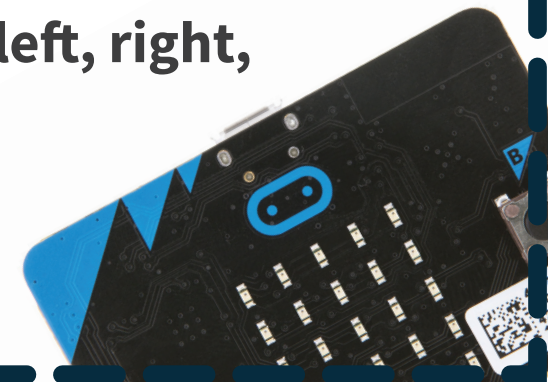
2

Design a Magic 8 Ball.



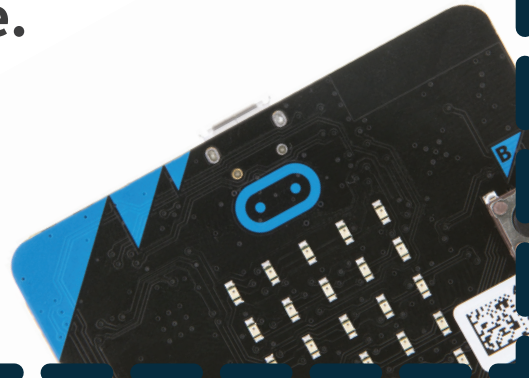
3

**Design a simple pixel image
(5x5 pixels) and animate in a
one direction (left, right,
up, down).**



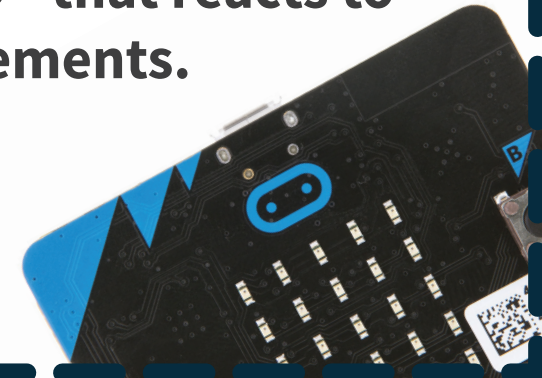
4

Design a Paper, Rock, Scissors game.



5

Design a your own unique “Karel the LED” that reacts to different movements.



6

Design a reaction game.

You will need 4 alligator clips - red, white, green, black from the **ELENCO Alligator Clip Test Lead Set**.



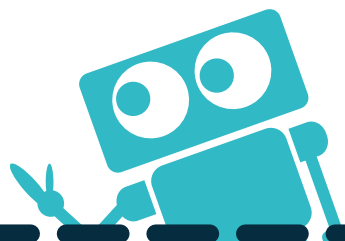
7

Design a Theremin.

A helpful website is <https://en.wikipedia.org/wiki/Theremin>. You will need 2 alligator clips - red & black, as well as 1 pair of earbuds / headphones.



8



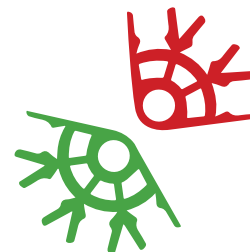
Design a scene with at least 3 elements from a famous story or movie.



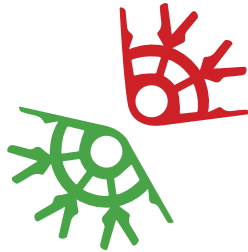
Design a robotic face that has two different facial expressions (ex. happy / sad).



Design a road vehicle that has rolling wheels.

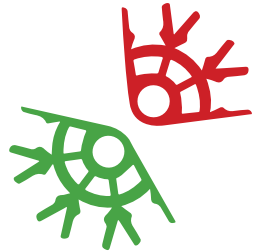


**Design a simple catapult
(you will need a rubber band).**



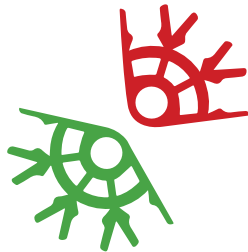
5

Design a complex catapult.



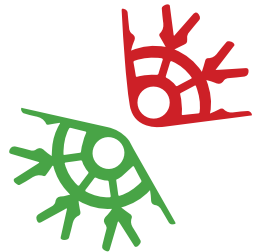
6

**Design a bridge that can span the
distance of a 12" floor tile.**



7

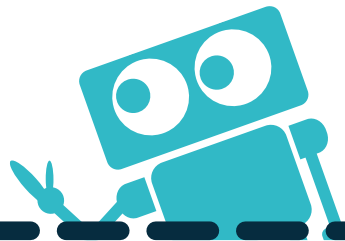
Design a balance scale.



8



makedo™



1

Design an arm that has working joints and try to incorporate movable fingers.



2

Design a scissor extension.



3

Design a variation of a wind ball.



4

Design a ball toss game.



5

Design a cardboard storage unit for your classroom.



6

Design a robot / animal / insect.

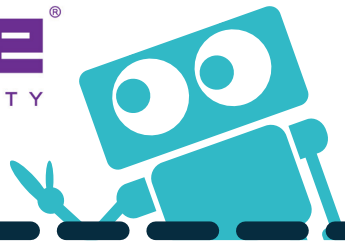


7

Design a bridge.



8



1

Experience the 3D Museum Viewer app with the Merge Cube.

<https://miniverse.io/experience?e=3d-museum-viewer>



2

Experience the Galactic Explorer app with the Merge Cube.

<https://miniverse.io/experience?e=galactic-explorer-for-merge-cube>



3

Experience the Hologlobe app with the Merge Cube.

<https://miniverse.io/experience?e=hologlobe-for-merge-cube>



4

Experience the Defused app with the Merge Cube.

<https://miniverse.io/experience?e=defused-for-merge-cube>



5

Experience the Cube Paint AR app with the Merge Cube.

<https://miniverse.io/experience?e=cube-paint-ar>



6

Design a house on one side of a cube in the Dig! app with the Merge Cube.

<https://miniverse.io/experience?e=dig-for-merge-cube>



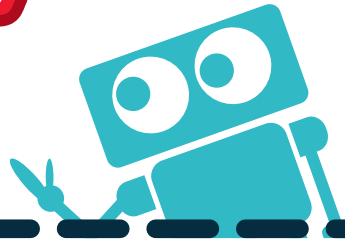
7

Choose an existing 3D object (model format supported .fbx, .obj, .stl, .dae, .blend, and .gltf) and upload it to the Merge VR app and experience it with the Merge Cube.

<https://miniverse.io/experience?e=object-viewer-for-merge-cube> and process https://da7j63g7c7l6t.cloudfront.net/assets/download/Object-Viewer_Getting-Started-Guide.pdf



8



1

Design an Operation-like game containing 3 objects to be retrieved.

2

Design a trigger / controller to introduce yourself, containing your recorded voice saying your name, and minimum of 2 additional spoken phrases.

3

Design a trigger switch to play a sound effect that you recorded.

4

Design a flappy bird game controller.

5

Design a dual slide switch to incorporate into an existing Scratch project.

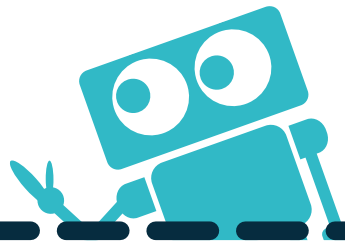
6

Design an interactive quiz for your classroom.

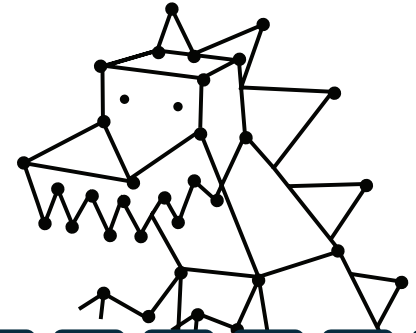
7

Go to Scratch.MIT.Edu and log in to your account. Setup a studio with at least 3 projects that you used during this workshop.

8



Design a building using at least 3 Strawbees basic shapes.



2

Design a mechanical arm.

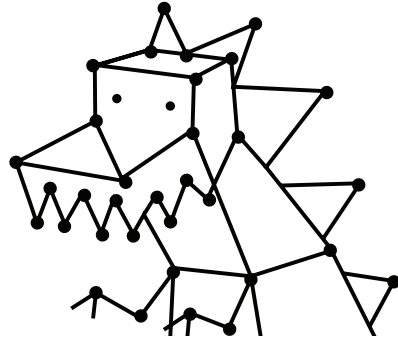


Design a robot / creature that can move a total distance of 3 feet.



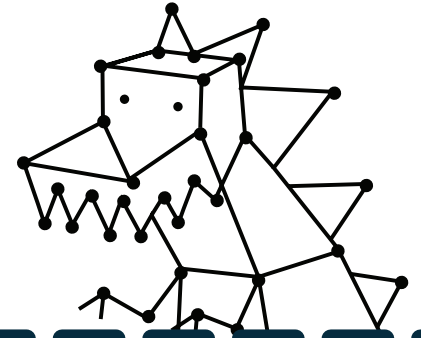
4

Design a robotic waving hand.



5

Design a catapult that can launch a coin the longest distance.



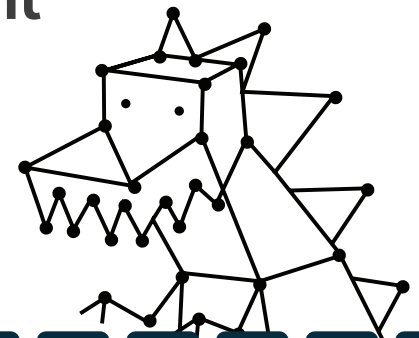
6

Design 2 types of bridges (4" wide x at least 10" long) and determine which one is stronger.



7

Go to <https://code.quirkbot.com/> and log in to your account. Create a musical instrument of at least 5 notes.



8