



Really Robotic Robot Costume - LED Light Animations

Every robot has a good status symbol light. Use maker tape and 10mm LEDs to make an animated LED status light for your Really Robotic Robot.

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INTRODUCTION

Meet Sally Servo - the Really Robotic Robot. :)

In this tutorial, you'll learn how to make an LED status animation like the one on Sally's robot suit.

Every robot has a good status symbol light. Use maker tape and 10mm LEDs to make one for your Really Robotic Robot. This is an easy project and a great introduction to micro:bit with many ways to customize it!



TOOLS:

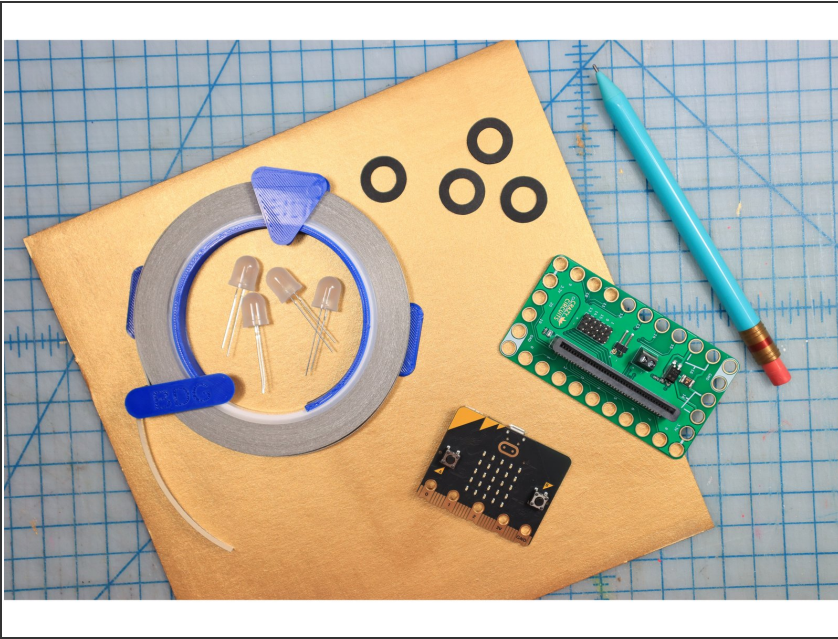
- [Utility Knife](#) (1)
- [Scissors](#) (1)
- [Printer \(to print out the template\)](#) (1)



PARTS:

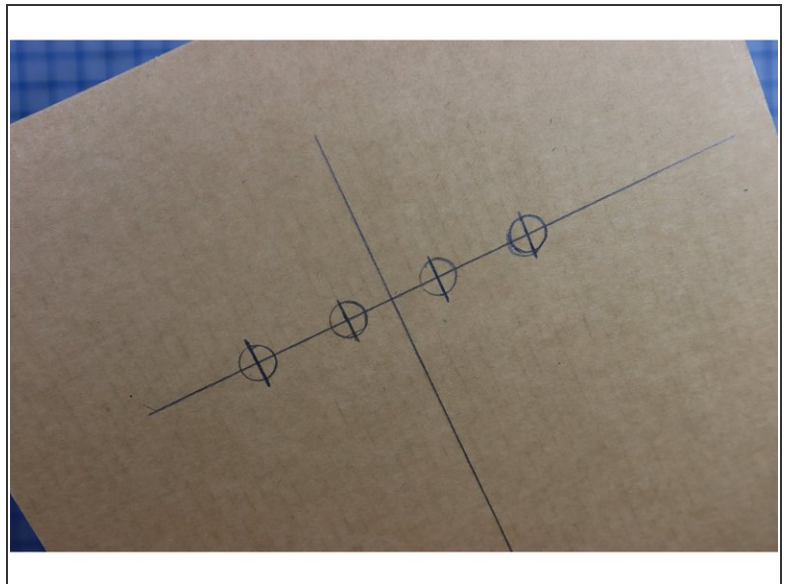
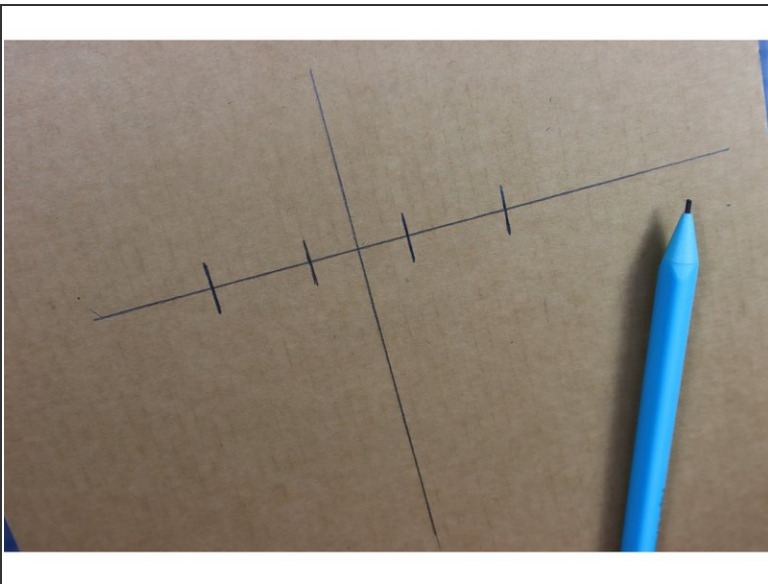
- [Jumbo 10mm Diffused LED](#) (1)
- [Crazy Circuits Bit Board](#) (1)
- [Maker Tape](#) (1)
- [micro:bit](#) (1)
- [Misc LEGO Parts](#) (1)
- [Hot Glue](#) (1)
- [packing tape](#) (1)

Step 1 — Gather Supplies



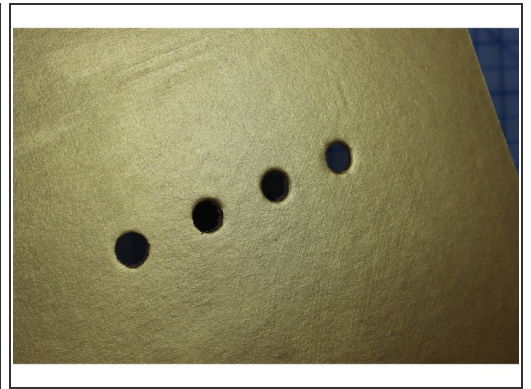
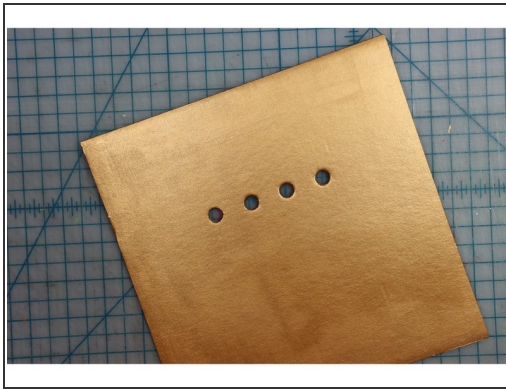
- Gather supplies, and print the template (optional).

Step 2 — Mark the holes



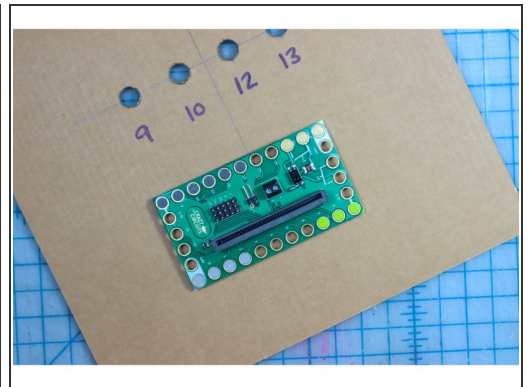
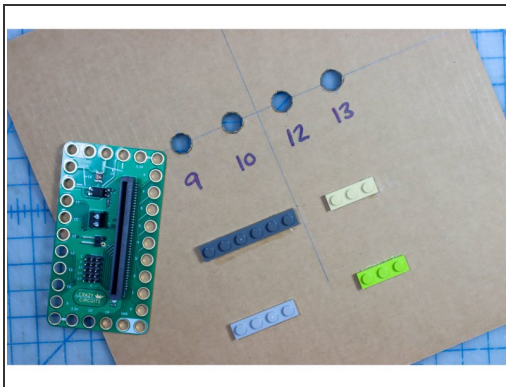
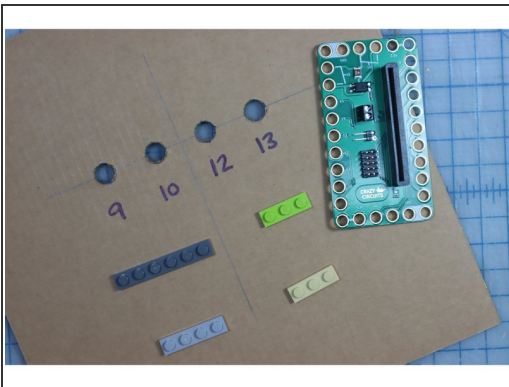
- Mark the locations of the four holes for the LEDs. This photo shows the holes 1-inch apart. You could also use the template to mark the locations if you like the spacing.

Step 3 — Cut the holes



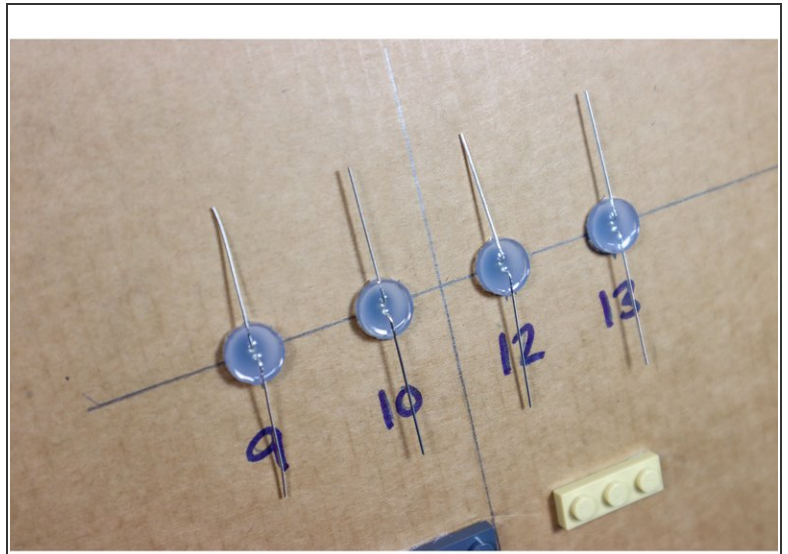
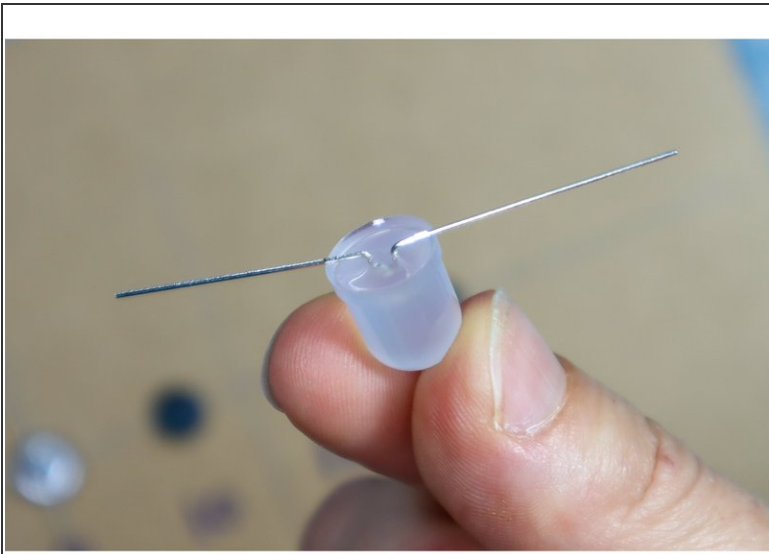
- To cut the holes, we used a craft knife to mark the circles from the back side and then cut out the holes from the front.
- Tip: You can poke the 10mm LED through the holes from the front side to make the edges nice and smooth.

Step 4 — Glue the LEGO



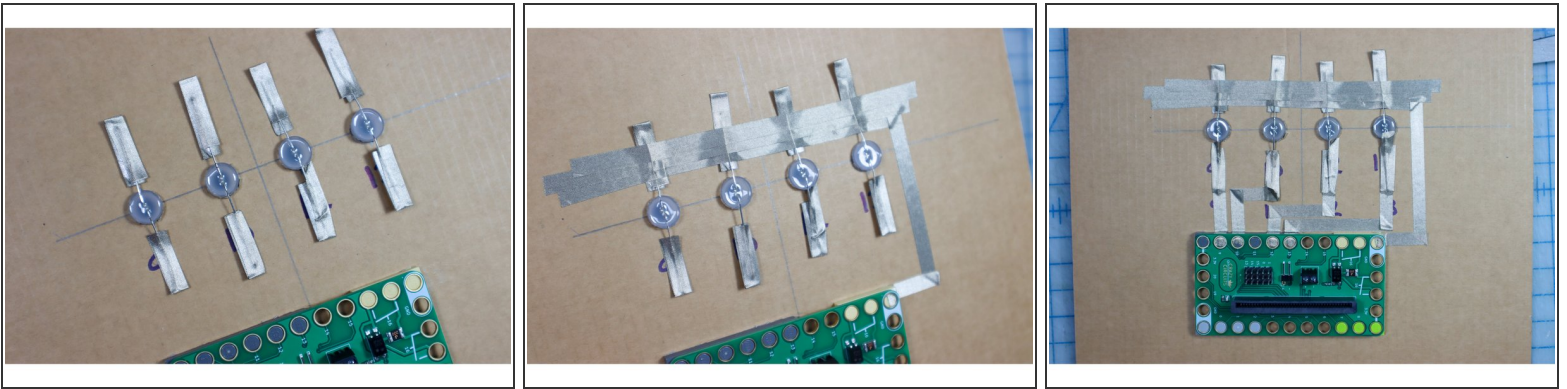
- Position the bit board so that Pins 9-13 are facing the holes.
- Glue LEGO in place, making sure that the holes for pins 9, 10, 12, 13, and GND have a LEGO peg inside them. The other LEGO are just for support.

Step 5 — Place the LEDs



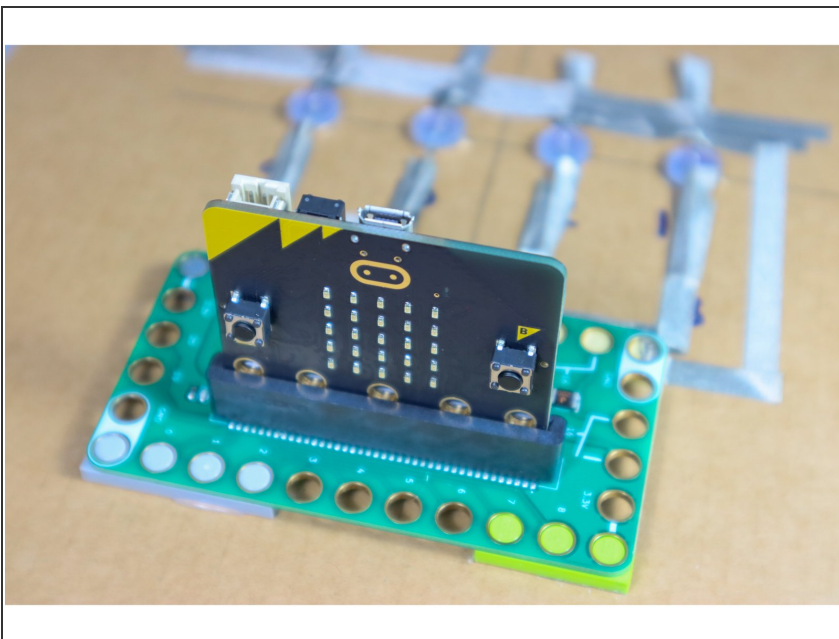
- Make note of the shorter, negative leg of the LED.
- Bend the legs open and flat.
- Place the LEDs in the holes with the negative legs facing away from the bit board.

Step 6 — Add Maker Tape



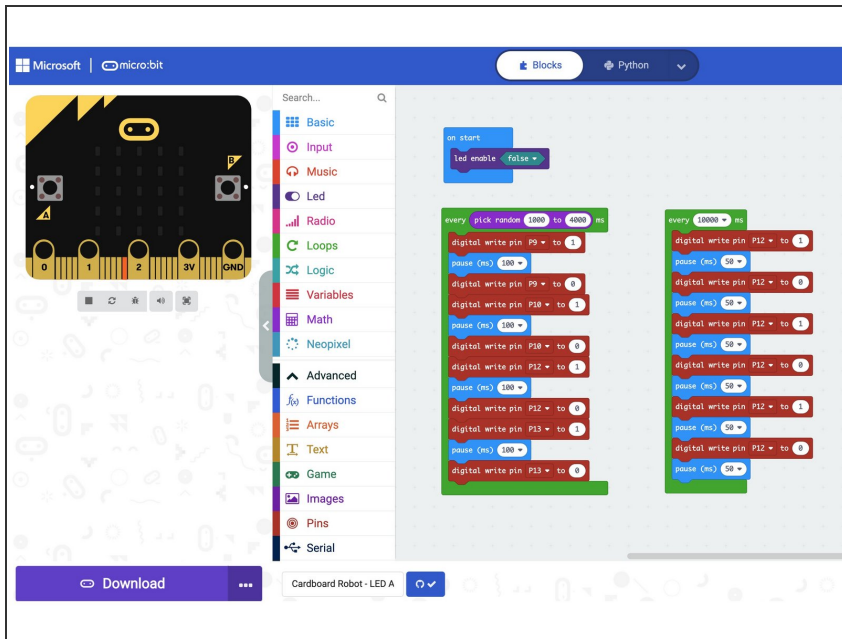
- Fold a piece of Maker Tape around the LED legs as shown.
- Connect a piece of Maker Tape to the Ground Pin and run it across the ground leg of all 4 LEDs. Add extra Maker Tape to secure it.
- Connect each positive leg of the LEDs to pins 9, 10, 12, and 13. Don't use Pin 11 as it is reserved for another process on the micro:bit.

Step 7 — Add the micro:bit



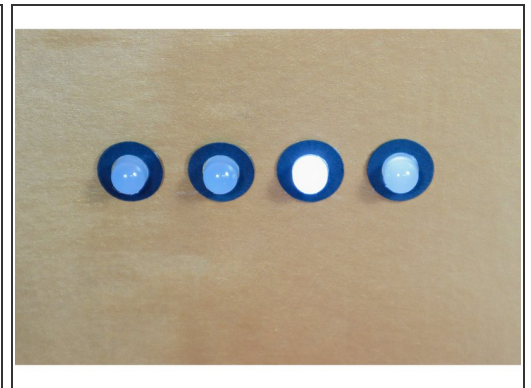
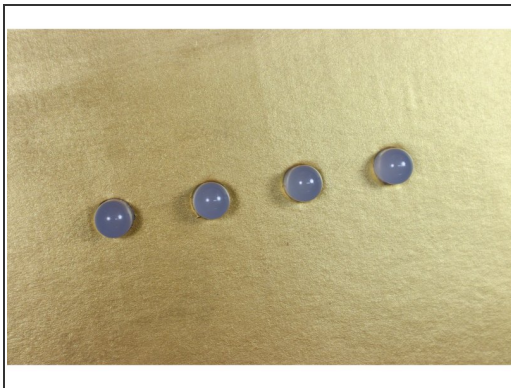
- Insert the micro:bit into the bit board.

Step 8 — Code the micro:bit



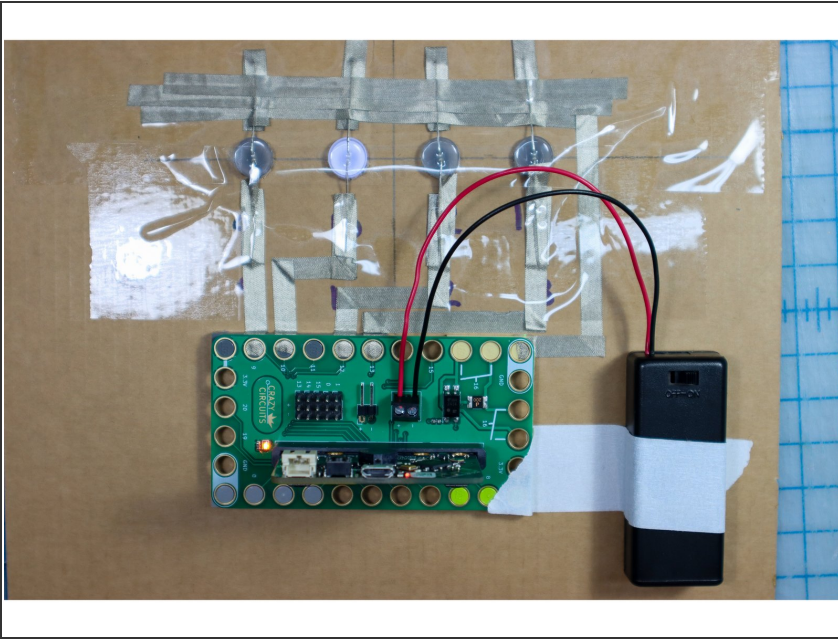
- Download code to the micro:bit, [available here](#).
- This code will create an LED animation of the LEDs blinking in order every 1-4 seconds. In addition, one of the LEDs blinks quickly every 10 seconds to give it a very "robot is computing" vibe.

Step 9 — Embellish the LEDs



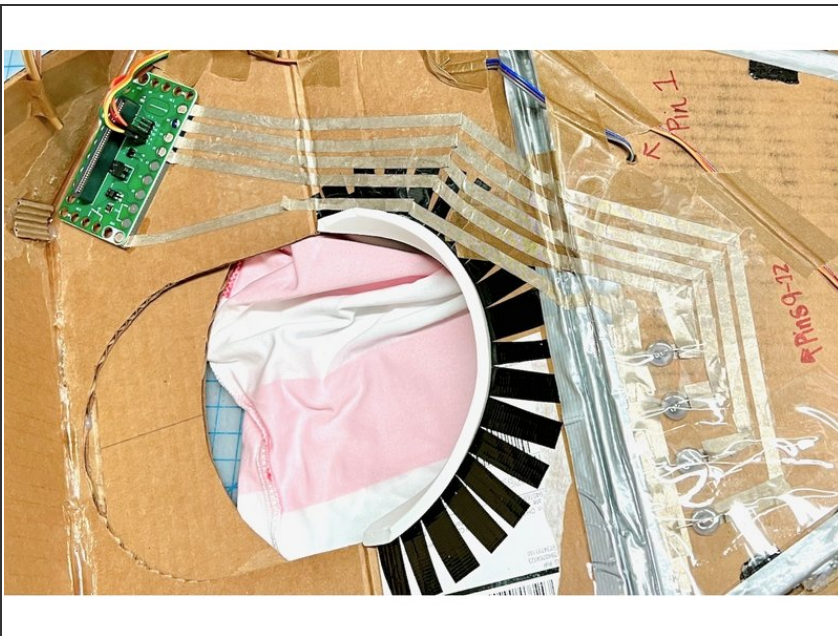
- Use the ring templates to add paper details.

Step 10 — Add a Battery Pack



- Add a battery pack to make it portable.
- We also added clear packing tape over the entire circuit. When wearing a costume, it's easy to snag a loose piece of Maker Tape, so this is a good way to secure it while still being able to see the circuit.

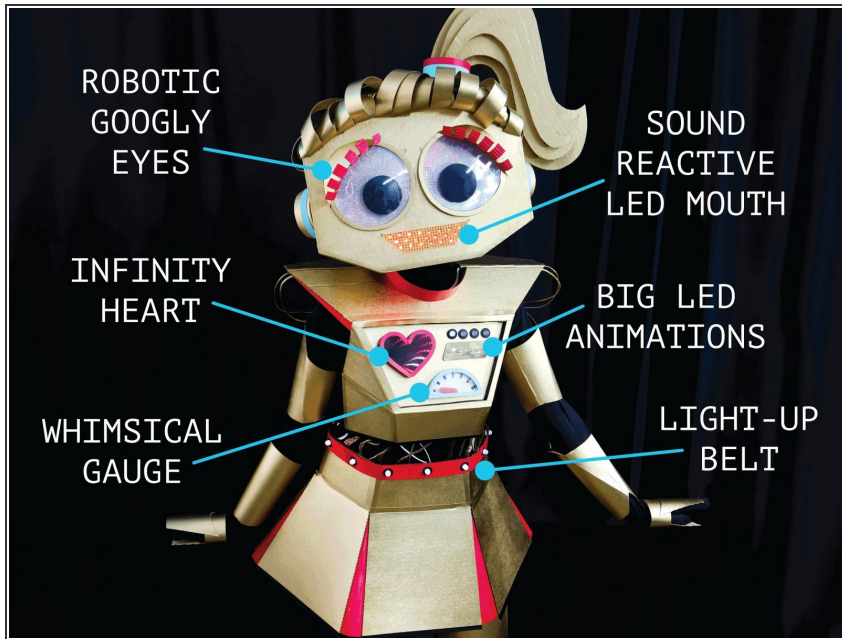
Step 11 — It can go anywhere!



- In our Sally Servo costume, we ran the traces all the way from the front to the back of the costume. This

gave us the chance to place the micro:bit in a comfortable spot for the wearer.

Step 12 — Create the rest!



- Continue to build your Really Robotic Robot costume! For more, view these guides:
 - [LED Belt](#)
 - [Whimsical Robot Gauge](#)
 - [Robotic Googly Eyes](#)
 - [Infinity Mirror Robot Heart](#)
 - [Sound Reactive Robot Mouth](#)