

# Maker Camp



## Making in the News

Every day, people are coming up with new ways to use robots and drones to make our world better. Robots and drones can perform dangerous tasks, work without taking breaks, and operate over and over again without making mistakes. The US Navy has been testing a drone that can refuel a jet while it is flying. In June, the MQ-25 Stingray Drone was able to fly a few feet in front of a F/A-18 Super Hornet and attach its probe to refuel the jet in the air. Research teams are now hard at work analyzing the data collected during



of each aircraft affected the other's flight. On land, farmers are using robots and drones to help with planting, fertilizing, and keeping watch over crops as they grow. This allows farmers to reduce time and resources needed for growing the food we eat. It also allows for more accurate

use of fertilizers or pesticides, which limits pollution and contamination. Tractors that drive themselves, guided by GPS systems, will become more common.



Robots that pick, clean, and package fruits and vegetables are also being developed that use software and sensors to make sure the food we eat is the freshest it can be.

### Questions:

...What are some jobs that could be done with robots or drones?

...What are some problems that could happen with using robots or drones?

...Can you think of some jobs that robots can't do?

**Learn more about robots & drones:** [Here](#) & [here](#)

## Cool Career: Medical Robots

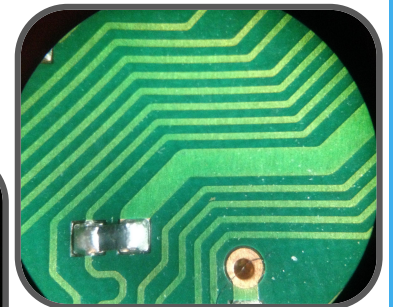
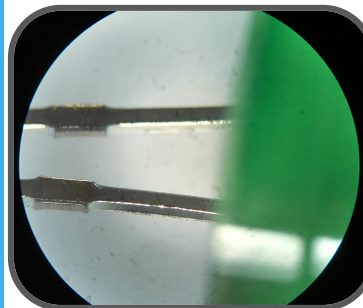
Do you like helping people when they're sick or injured? Doctors and nurses do amazing work to help people every day in hospitals, but did you ever wonder where the technology they use comes from?

Biomedical engineers use knowledge of how the human body works to create all kinds of hi-tech devices used in hospitals. They've even started creating robots to help patients recover after surgery, deliver medications to patients, and sanitize rooms in hospitals. There are even robots being used to perform surgery on people, especially helpful when a doctor isn't available in a certain area. If you like robotics and helping people, learn more about careers with [Robotics in Medicine](#)



## Mystery Photos

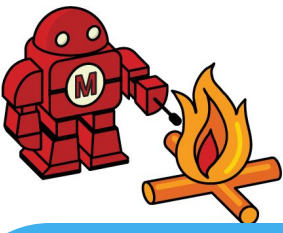
Can you identify the mystery computer science items under the microscope?



Decode the answers using tapcode (if you don't know what tapcode is, read about it [here](#))

13 24 42 13 45 24 44 12  
34 11 42 14 31 15 14 12

45 31 12 13 11 32 15 42 11 35 23 34 33 15

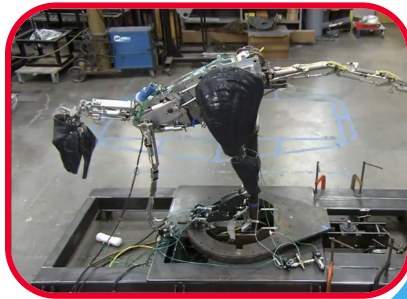


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## How Things Get Made

Have you ever visited a zoo or museum and saw a statue that moved on its own? Animatronics is the field of study that combines puppetry, sculpting, and robotics to make people think they're seeing a real person or animal. Since dinosaurs are extinct, animatronic dinosaurs give us the experience of interacting with these marvelous creatures. Building them takes a lot of hard work and skill. How do you think they are created? Watch [the process](#)



## Maker Camp Events

Ask your Maker Camp leader to attend live events!

### CodeJoy Live Virtual Sessions: Robot Aerobics

July 19-23, 4 pm ET / 1 pm PT

During this [live coding session](#), Kelsey and Matt the Robot are leading a dance fitness class designed to get the robots of the world moving, and they need YOUR help to code the dancers! Groove along with the robots as you program their servo motors to move to the beat. CodeJoy participants will learn the basics of coding position servo motors and creating sequences and algorithms.

**Coming Soon!** Mario the Maker Magician [Live Zoom Party](#) on July 29 at 10 am PT / 1 pm PT.

## Maker Challenge

Have you tried all of the challenges for this Adventure? If not, ask your Maker Camp leader for info about these fun projects: [Robot Mini Golf](#) [Ultimate Stomping Pad](#) [Your First LED](#)



## Q & A with a Maker

**Matt Chilbert: Filmmaker, Educator, & Tinkerer from [CodeJoy](#)**

1) *When did you start making?*

When I was a kid, I was obsessed with the movie Hook. I spent a lot of time building treehouses and forts in an attempt to recreate the Lost Boys' island. These structures were rarely stable and always included some overly complicated pulley system to open a window or release a trap door. These projects were probably more make believe than making, but they did allow me to play the role of inventor at a young age.

2) *What is your favorite part of making?*

No matter what I set out to create, there is always a community dedicated to making something similar. Making provides endless opportunities to meet new people and exchange ideas.



3) *What was your biggest "fail" when making something?*

I spent about 3 years and more money than I want to admit trying to make a Disney-style dark ride. In the end, I could not afford to keep the project going. Thinking about that project still hurts, because I can clearly see every detail of a project that does not and may never exist.

4) *What do you want to learn about next?*

I would like to get better at coding in Python.

