

The words from the Lego Robotics Instructor, Mr. Li:

LEGO released its new Robot Inventor set in June 2020. The previous generation, the EV3 set, was released 7 years earlier. There are many improvements by the Robot Inventor set over its EV3 predecessor. Many websites comparing features between these two sets will come up if you search using the keywords “ev3 vs robot inventor”.

I have been contemplating replacing EV3 with Robot Inventor for my LEGO robotics classes at MIOT since 2020, especially since one can only buy an EV3 set on eBay these days. After much internal debate, I decided to continue to use the EV3 set for the 2022-2023 school year because several features of the EV3 set that I consider important are missing in the Robot Inventor set:

1. The EV3 set has a remote beacon that works with the infrared sensor to allow users to control a robot remotely. This is a great feature that is well-liked, especially by beginners, and offers an extra dimension of creativity. The Robot Inventor does not have a remote beacon.
2. The EV3 brick has a faster CPU and larger RAM than the Robot Inventor hub, although it boots slower and is twice as large. The EV3 bricks run the Linux OS, which is extremely versatile, while the Robot Inventor hub runs a lightweight embedded OS. A key reported issue that is related to the hardware difference is the lack or difficulty of hub-to-hub communication for Robot inventors. This is another major feature in my intermediate and advanced classes that will be absent if the switch is made. I also saw people deciding not to use Robot Inventor in FLL competitions because of its hardware limitations.
3. The EV3 set has a touch sensor. Although the touch sensor has limited functionality, it is nevertheless extremely easy to understand and use for beginners.

I fully understand the hesitation by some parents to invest \$500+ on an EV3 set that their kids might not play with after one year while a new Robot Inventor costs \$300+ and has full support from LEGO. To help, I will set up an EV3 set rental program for students registered in my classes: a student only needs to pay \$100 to use a lightly used EV3 set between August 2022 and June 2023. To start, I have prepared 5 sets. First come, first serve.