

BOTS FOR KIDS

Introductions | Meet Your Bot | Resources

About Sam Kass

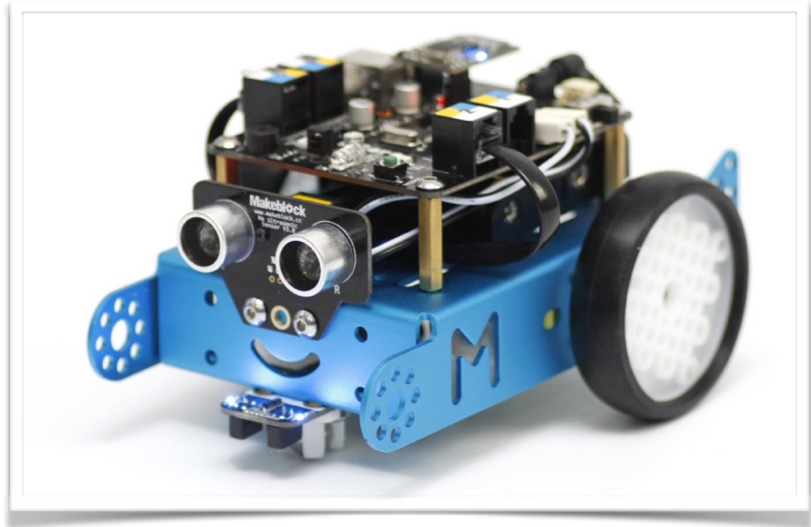
Greetings! My name is Sam Kass and I will be running the class. My background is in software development, but I have been a robot tinkerer for years and discovered IXR over a year ago. My kids have begun to share my enthusiasm for robotics, so we decided to create a club where kids can learn, share, and enjoy.

About Joe Wilkes

Joe Wilkes will be assisting in this class. Joe is a retired electrical engineer who has been working with electronics since he was 12 and is always ready to share his knowledge and help new students. He is one of the organizers at IXR.

About IXR

The Institute for Exploratory Research is a "hackerspace" whose mission is to help lower the barriers to invention, creativity, and innovation by providing access to resources, equipment, and community that an individual "maker" may not have otherwise.



Meet Your Bot

The mBot is an inexpensive beginner robot platform made by MakeBlock.cc. We chose this platform because it is relatively low-cost, sturdy, easily built, and expandable. The variant we will be using is the "2.4 GHz" model, which is best for classroom use because the connection between the computer and robot happens automatically in the background. For home use or for use with a mobile phone or tablet, a Bluetooth module is available as well.

The frame of the robot is a sturdy metal frame that has spots to add additional equipment. It also has enough room to add customized decorations and equipment. The wheels have grippy rubber, which helps with tracking accuracy. The mainboard is installed on metal risers and screwed in securely. We found it to be an especially strong build for the price.

The electronics are also quite capable. The robot is based on the Arduino platform, which is used around the world to build many



This Location

Our location has a rich history of communications, scientific research, and electronics. It was once Marconi's trans-Atlantic radio receiving station, and later an Army research facility.

Radar research here contributed to detecting planes in WWII and later detecting storms and severe weather, and many advancements in radio and communications were demonstrated here.

It was closed in 1993 and turned into a science and history museum, with radio, antique computers, and maritime disasters, among many other exhibits.

Robot Class Info

Sundays starting
Oct 11, 2015
1-3PM

IXR at InfoAge Science and History Museum
2201 Marconi Road,
Wall, NJ 07719

RSVP at meetup.com/IXR-NJ

robot projects. The mainboard comes with an IR transmitter and receiver, multi-color LED lights, a light sensor, a buzzer that can play notes, a programmable button, and connectors for additional equipment. The mBot includes modules for an ultra-sonic range finder and a line following attachment, and other can be purchased from their site. For testing and demonstration it comes with an IR remote (2025 battery not included). Finally, it comes with a battery pack that takes standard AA batteries (also not included).

The Arduino platform is normally programmed in a C/C++ language, but the mBot simplifies the programming by adapting MIT's "Scratch" environment to robotics. Scratch is a great way for kids to learn programming, and uses graphical blocks to represent programming concepts. MakeBlock created a version for their robots called mBlock that adds sensors, motors, and robot connectivity to the package. Together it allows powerful robotic programming, yet is easy to get started.

I hope you enjoy your robot, and I look forward to helping you learn with it.



Additional Resources

Here are some additional links to sites that might help you learn at home.

- mBot basics: <http://learn.makeblock.cc/mbot/>
- Learning Scratch: <http://learn.makeblock.cc/learning-scratch/>
- MakeBlock Store: <http://www.makeblock.cc/categories>

In addition, IXR regularly meets Monday nights ("Microcontroller Mondays") and has a Yahoo mailing list to keep in touch at http://groups.yahoo.com/group/ixr_nj/. We are also on Facebook at <https://www.facebook.com/IXRNJ>.