BOTS FOR KIDS

## Building Tips | Your First Program

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.

Assembly
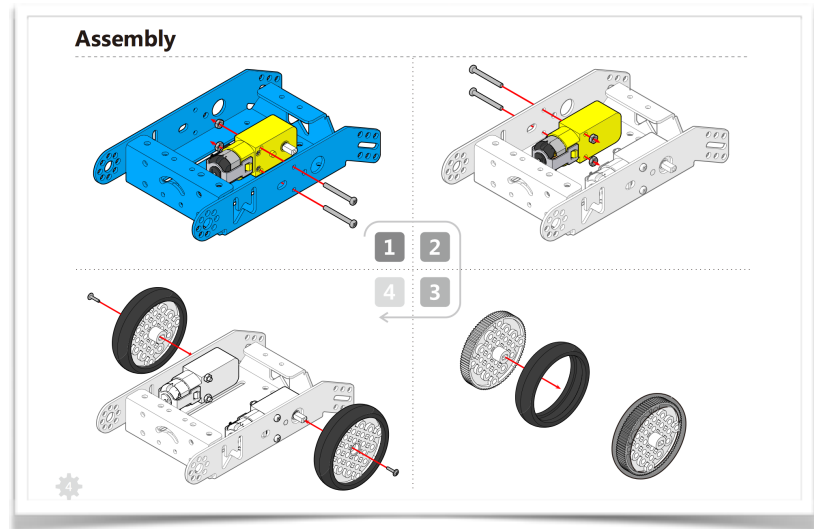
Building Tips

This week, we will start by building our bots. All required tools are included in the mBot box along with visual instructions. The instructions are fairly straightforward, but I have a few tips based on what we've seen to help keep you on track.

On page 1, when screwing on the motors be sure the nut holding them on is tight. We have lost at least one tiny little nut when it came loose after use.

On page 2, make sure the wire coming up from the line following module is going to the correct side of the circuit board *before* screwing down the circuit board. Otherwise, the circuit board will have to be removed again and the wires sorted out.

Finally, when wiring, looking down from the top, Motor 1 is on the left and Motor 2 is on the right. Swap those, and you'll have a very confused bot.

Otherwise, follow the directions and we'll help.

Your First Program

We will be programming our mBot through a program called mBlock, which is a derivative of the "Scratch" system created by MIT. A program will look something like this:

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.
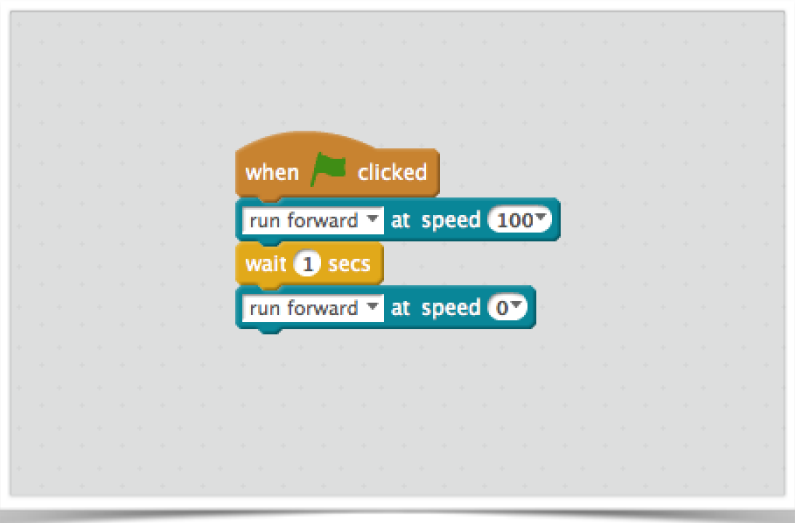
Robot Class Info

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

Tips & Tricks

Here are a few tips based on our experimentation of mBlock:

1. It can be very handy to have a 'When space is pressed, stop' function defined in case your bot starts misbehaving. Do that by adding this anywhere in your program:
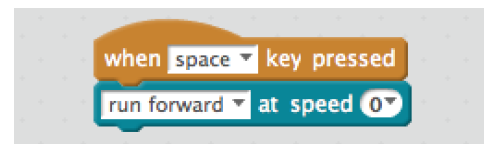
2. If a sensor or motor is not responding like you think it should, make sure the "port" in the green command matches the one on the robot.

3. To see a value, make the panda "say" it. The "say" command is under the "looks" section, and the value can be any other block: