

ORTOP NXT Programming Workshop

In the ORTOP Workshops I, II, and III, we introduce the attendees to basic programming so that they can begin to program their robots to do some basic tasks. We introduce the following Blocks:

- Move Blocks
- Wait For Blocks
- Loop Blocks
- Touch, Rotation, and Light sensors
- In some past workshops we have also included the Distance sensor

Teams can accomplish quite a bit with these Blocks and Sensors, but as the teams grow in experience, they will want to try more complex tasks.

The goal of the new Programming Workshop is to introduce the attendees to more of the blocks that they are likely to want to introduce to their teams sometime during their coaching careers.

We review the NXT Software and look at all the programming blocks that are provided, noting which have high value in FLL challenges, and which can safely be ignored. We provide several opportunities for the attendees to work together in teams to solve programming problems using the newly introduced Blocks. The Blocks that are introduced in the workshop include:

- More variants of the Loop Block
- Switch Block
- Sensor Blocks
- Use of variables
- My Blocks, which provide the concept of subroutines

The workshop not only shows how to use these Blocks, but it also discusses why one might want to use each Block. Exercises are provided so that each in-class team can try using these blocks. Some additional techniques are also discussed for aid in troubleshooting or debugging programs.

Note that the intent of the Workshop is not to provide information that a coach can immediately take back to show their teams. Instead, the expectation is to provide coaches with additional tools that they can share with their teams and add to the foundation that they are building as the team gains the experience to move to a new level.

REQUIREMENTS: All attendees are expected to have previously attended ORTOP Workshops I and II or to have had equivalent coaching or mentoring experience before attending the Programming Workshop.