

Guide to FIRST Tech Challenge Video Training Resources

Hardware Tutorials

YouTube Playlist - https://www.youtube.com/playlist?list=PLEuGrYI8iBm4j83wiDenn9sQh4g1_gmqQ

- 1 - Components of a Robot - <https://www.youtube.com/watch?v=E6bOTkQWaTI>
- 2 - Connect Driver Station to Controller - <https://www.youtube.com/watch?v=LQqcX9rBX38>
- 3 - Powering & Wiring Your Robot - <https://www.youtube.com/watch?v=D9AHTRGDp3k>
- 4 - Configuring Your Robot - <https://www.youtube.com/watch?v=qm9mcyrjY54>
- 5 - Configuring Gamepads - <https://www.youtube.com/watch?v=mAivzV7jaRQ>
- 6 - Testing Motors - <https://www.youtube.com/watch?v=w3yTD6H4baY>
- 7 - Testing Servos - <https://www.youtube.com/watch?v=IcRVkVHFgaw>
- 8 - Testing Sensors - <https://www.youtube.com/watch?v=3ZvDs5DE-Zk>
- 9 - How to Connect Beams using bolts and nuts - <https://www.youtube.com/watch?v=iv8gvimf-3A>
- 10 - How to Mount Motors and Wheels - <https://www.youtube.com/watch?v=28-VLKM3Wyo>
- 11 - Mounting Electronics on TETRIX Beams - <https://www.youtube.com/watch?v=JSUNeEbpm30&t=16s>
- 12 - Managing Wires - <https://www.youtube.com/watch?v=SzESGsFWZhs>
- 13 - How to mount a Gear - https://www.youtube.com/watch?v=0W1q1_hU57g

- 14 - Inertial Measurement Unit - <https://www.youtube.com/watch?v=eN7fQnQ8zeg>
- 15 - Debugging Using Telemetry - <https://www.youtube.com/watch?v=fgGMq7ulXP4>

Color Sensors

- 1 - Using a Color Sensor (Part 1) - <https://www.youtube.com/watch?v=iQufRF1HFRc>
- 2 - Using a Color Sensor (Part 2) - https://www.youtube.com/watch?v=uSEEO3_JVTI

REV Robotics

- 1 - REV Robotics Expansion Hub Guide - <https://www.revrobotics.com/content/docs/REV-31-1153-GS.pdf>
- 2 - Rev Robotics Electronic Set Opening - Unboxing new hardware | First Tech Challenge (FTC) Team 8742 - <https://www.youtube.com/watch?v=PMxmcs9kXzs>

Video Tutorials -

- 1 - Rev- Components of a Robot - <https://www.youtube.com/watch?v=fU1GXteByJw>
- 2 - Rev- Configuring Your Robot - <https://www.youtube.com/watch?v=VHyKE3B170k>
- 3 - Mounting Rev Electronics on TETRIX Beams - https://www.youtube.com/watch?v=t1hK50_66zs
- 4 - Rev- Powering and Wiring a Robot - <https://www.youtube.com/watch?v=DKwpEyKbTqM>
- 5 - Rev- Managing Wires - <https://www.youtube.com/watch?v=9u3Z0XrrXKQ>
- 6 - Rev- Testing Motors - <https://www.youtube.com/watch?v=SOspcH58tZQ>
- 7 - Connecting two Rev Expansion Hubs - <https://www.youtube.com/watch?v=7rbLDden-Rs>
- 8 - Testing Rev Touch Sensor - <https://www.youtube.com/watch?v=aZYBmU6ocec>
- 9 - Testing Rev Color Distance Sensor - <https://www.youtube.com/watch?v=VAPxENrKRvo>
- 10 - Rev- Testing Servos - <https://www.youtube.com/watch?v=N6YulRyLmCQ>

Servo City Videos

Tech Tips -

YouTube Playlist - https://www.youtube.com/playlist?list=PLHj0bn3rsCbQ0_NYZGY3aITrLGI_7Df7r

FIRST things first

YouTube Playlist - <https://www.youtube.com/playlist?list=PLHj0bn3rsCbRs85-1LVazI-hPFYHeYiV9>

- 1 - Frame Build 1 - <https://www.youtube.com/watch?v=YWQhIFRppIA&list=PLHj0bn3rsCbRs85-1LVazI-hPFYHeYiV9&index=2&t=54s>
- 2 - Frame Build 2 - https://www.youtube.com/watch?v=I_PHa7mqVFs&list=PLHj0bn3rsCbRs85-1LVazI-hPFYHeYiV9&index=3
- 3 - Frame Build 3 - <https://www.youtube.com/watch?v=ntSY8NfttEE&list=PLHj0bn3rsCbRs85-1LVazI-hPFYHeYiV9&index=4>
- 4 - Drive Motors & Wheels - <https://www.youtube.com/watch?v=VJlx9n2ma6g&index=5&list=PLHj0bn3rsCbRs85-1LVazI-hPFYHeYiV9>

Blocks Programming Tutorials -

Blocks Training Manual

- Features new REV - https://www.firstinspires.org/sites/default/files/uploads/resource_library/ftc/blocksprogramming-trainingmanual.pdf
- Features Modern Robotics electronics - https://www.firstinspires.org/sites/default/files/uploads/resource_library/ftc/2017-2018/blocks-programming-training-manual-mr.pdf

YouTube Playlist - <https://www.youtube.com/playlist?list=PLEuGrYI8iBm4A4yrRcatGcK7q0od0LYov>

- 1 – Installing Apps from Google Play – <https://www.youtube.com/watch?v=AKoqwqPo-Vc&index=1&list=PLEuGrYI8iBm4A4yrRcatGcK7q0od0LYov>
- 2 - Connect to Programming Mode - <https://www.youtube.com/watch?v=BL0kvoQcjxU&index=2&list=PLEuGrYI8iBm4A4yrRcatGcK7q0od0LYov>
- 3 – Writing an Op Mode - <https://www.youtube.com/watch?v=o-7z9WE6JAI&index=3&list=PLEuGrYI8iBm4A4yrRcatGcK7q0od0LYov>
- 4 – Saving and Running an Op Mode - <https://www.youtube.com/watch?v=ulthYCxT9eY&index=4&list=PLEuGrYI8iBm4A4yrRcatGcK7q0od0LYov>
- 5 – Moving Forward and Backward - <https://www.youtube.com/watch?v=f8-NQIS3IEM&index=5&list=PLEuGrYI8iBm4A4yrRcatGcK7q0od0LYov>
- 6 – Turning - <https://www.youtube.com/watch?v=PuOKjimrJ0k&index=6&list=PLEuGrYI8iBm4A4yrRcatGcK7q0od0LYov>
- 7 – Game Pads using Joysticks - <https://www.youtube.com/watch?v=8KXQketfarE&index=7&list=PLEuGrYI8iBm4A4yrRcatGcK7q0od0LYov>
- 8 – Game Pads using Buttons - <https://www.youtube.com/watch?v=75ndVZzZjU&index=8&list=PLEuGrYI8iBm4A4yrRcatGcK7q0od0LYov>
- 9 – Game Pads using Triggers - https://www.youtube.com/watch?v=tQW8ZG6B_bQ&index=9&list=PLEuGrYI8iBm4A4yrRcatGcK7q0od0LYov
- 10 – Save Early Save Often - <https://www.youtube.com/watch?v=YDEkcunllYI&index=10&list=PLEuGrYI8iBm4A4yrRcatGcK7q0od0LYov>
- 11 – Rotate Servos - <https://www.youtube.com/watch?v=Qd8iMiAkFGI&index=11&list=PLEuGrYI8iBm4A4yrRcatGcK7q0od0LYov>

App Inventor Programming Tutorials -

YouTube Playlist - <https://www.youtube.com/playlist?list=PLEuGrYI8iBm7XLd4ekLsEmCEXa1Hyllan>

- 1 – Setting up App Inventor - <https://www.youtube.com/watch?v=8hln3vq5cOU&index=2&list=PLEuGrYI8iBm7XLd4ekLsEmCEXa1Hyllan>
- 2 – Writing an Op Mode - <https://www.youtube.com/watch?v=IYecwR1PIZg&index=3&list=PLEuGrYI8iBm7XLd4ekLsEmCEXa1Hyllan>
- 3 – Installing and Running an Op Mode - <https://www.youtube.com/watch?v=08I-ebmWhyo&index=4&list=PLEuGrYI8iBm7XLd4ekLsEmCEXa1Hyllan>
- 4 – Moving Forward and Backward - <https://www.youtube.com/watch?v=4sB2zVvmhXI&index=5&list=PLEuGrYI8iBm7XLd4ekLsEmCEXa1Hyllan>
- 5 – Turning - <https://www.youtube.com/watch?v=jHfas1clv-k&index=6&list=PLEuGrYI8iBm7XLd4ekLsEmCEXa1Hyllan>
- 6 – Using Game Pads - https://www.youtube.com/watch?v=w9E_ICzFih0&index=7&list=PLEuGrYI8iBm7XLd4ekLsEmCEXa1Hyllan
- 7 – Rotate Servos - <https://www.youtube.com/watch?v=rV6qBYYV4U&index=8&list=PLEuGrYI8iBm7XLd4ekLsEmCEXa1Hyllan>
- 8 – How to Drive in a Square - <https://www.youtube.com/watch?v=a6uQ7uGVuiw&index=9&list=PLEuGrYI8iBm7XLd4ekLsEmCEXa1Hyllan>

Java Programming Tutorials –

YouTube Playlist - <https://www.youtube.com/playlist?list=PLEuGrYI8iBm7wW9gyxpLDhBJAOWDZid1P>

- 1 – Installing the Software - <https://www.youtube.com/watch?v=mMrC5kDcUN4&index=2&list=PLEuGrYI8iBm7wW9gyxpLDhBJAOWDZid1P>
- 2 – Writing an Op Mode - <https://www.youtube.com/watch?v=7CDK5-m-vQw&index=3&list=PLEuGrYI8iBm7wW9gyxpLDhBJAOWDZid1P>
- 3 – Registering and Installing an Op Mode - <https://www.youtube.com/watch?v=cRcdGPaZ70Y&index=4&list=PLEuGrYI8iBm7wW9gyxpLDhBJAOWDZid1P>
- 4 – Move Forward and Backward - <https://www.youtube.com/watch?v=dNiGzPqEF9I&index=5&list=PLEuGrYI8iBm7wW9gyxpLDhBJAOWDZid1P>
- 5 – Turning - <https://www.youtube.com/watch?v=Xpgs3UKDiW8&index=6&list=PLEuGrYI8iBm7wW9gyxpLDhBJAOWDZid1P>
- 6 – Using Game Pads - https://www.youtube.com/watch?v=-w_d508i7P8&index=7&list=PLEuGrYI8iBm7wW9gyxpLDhBJAOWDZid1P
- 7 – Rotate Servos - https://www.youtube.com/watch?v=-J7RNUxm_p8&index=8&list=PLEuGrYI8iBm7wW9gyxpLDhBJAOWDZid1P
- 8 – How to Drive in a Square - https://www.youtube.com/watch?v=BLYqh_svu8Q&index=9&list=PLEuGrYI8iBm7wW9gyxpLDhBJAOWDZid1P
- 9 – Using an Optical Distance Sensor - https://www.youtube.com/watch?v=44UIKiU_8us&index=10&list=PLEuGrYI8iBm7wW9gyxpLDhBJAOWDZid1P

OnBotJava Video Tutorial

<https://www.youtube.com/watch?v=tRDSj2AZJul>

Judging Videos –

- 1 – How to Succeed at Judging - <https://www.youtube.com/watch?v=xOcUOEuacCw>
- 2 – Judging – What to Expect (Team 3550) - <https://www.youtube.com/watch?v=gHewNK8m8rM>
- 3 – 2016 FIRST Worlds Judging Video Final (Team 7130) - <https://www.youtube.com/watch?v=cuFHDweALDU>