

Teacher Resources: Sphero Robotics

Table of Contents

Table of Contents.....	1
Contact Information.....	2
Equipment Checklist.....	3
Recommended Set Up Instructions.....	6
FAQ.....	6
Extension Resources.....	8

STEMbound Contact Information




Please contact us as soon as possible if something is missing, damaged, or you would like support or professional development with the equipment. Thank you!



Contact	Contact Information
STEMbound Team	Email: STEMbound@sourcewell-mn.gov

Website Quick Links		
STEMbound Home Page	Equipment Check-out Library	Consultant-led Learning
	Equipment Request	Consultant-led Request
STEM Network	Partnership in Planning Request	Professional Learning

You can access the above links and more at: <https://mn.sourcewell.org/education/STEMbound>

Equipment Checklist

Item	Picture	Quantity
Sphero Case with charging cord, Sphero tape, and heading compass		1 case
Sphero Robots		15 Sphero Bolts
Cones		10
Activity Mat and Cards		1 Space/Soccer mat and 36 activity Cards 1 City/Golf mat and 36 activity cards

		
Sphero Ramps and Terrain Park		8 ramps
Bunny Cages		Set of 24 *Styles may vary

		
Sphero Turbo/Nubby Covers		15 covers- style varies

Images courtesy of Sphero, used with permission

Recommended Set Up Instructions

Charging: You will want to ensure that the Sphero's are fully charged before using them.

- BOLT- 6 hrs to charge/ 2+ hrs of use
- When BOLT is on charger and power cord is plugged in, it will blink blue to indicate it is charging. Charge for 3 HRS, or until blue charger light stops blinking.

Getting started: You will need to have Sphero EDU download on your devices.

Pairing Sphero: The Sphero's use Bluetooth, so pairing is a simple process.

- On the homepage of the Sphero EDU app select "Connect Robot".
- Select "Sphero BOLT" from the list of robot choices.
- Hold your robot next to the device and select it to connect.
 - If you are having trouble, place your robot on the charger for 15 seconds to ensure it's not in deep sleep, then try again.

After use cleaning: BOLT is waterproof; to clean simply wipe your robot with warm soapy water and dry it with a towel. For a more thorough sanitization:

- Have the proper cleaning products, e.g. disposable disinfecting wipes (Lysol or Clorox or similar brands are best) or spray, paper towels (if using a spray) and disposable gloves.
- Wipe down BOLT's outer surface. Wipe and spray away! There are no charging ports or openings to worry about. Just be sure not to use harsh solvents or anything abrasive or sharp to clean them.
- Allow BOLT to dry completely before placing it back on its charger.

FAQ

- **What devices work with Sphero Bolt?** Check to make sure your device is compatible with Sphero BOLT and Sphero EDU app. Compatibility requirements are below:

Mobile Apps			Desktop Apps		
iOS	Android	Fire OS	Windows	macOS	Chrome OS

iOS 9+	Android 6+	Supported Devices: Fire 7 (2019) Fire HD 8 (2015+) Fire HD 10 (2015+)	Windows 10 (1709+) Additional Requirements: 64-bit architecture 4GB of memory	macOS 10.12+	Chrome OS 50+
--------	------------	--	--	--------------	---------------

▪ Why isn't Sphero going where I

want it to go? Make sure your Sphero is aimed before any coding. Aim Sphero relative to your location. Find the "Aim" icon in the "Drive" setting. Move the dot around the navigation wheel until the blue tail light is facing you.

- **What is the flashing red light?** This means your Sphero is needing to be charged (this can take up to 3 hours for a full charge). Place it back on the charging dock and grab another one to pair.
- **How long can Sphero run before needing to be charged?** Sphero can run at full speed for 120 min. before needing a charge.
- **Why is my Sphero not connecting?** To resolve this issue, make sure that all Bluetooth devices you could use to connect to Sphero (smartphones, tablets, iPods, etc.) within 50 ft. are turned off or have Bluetooth turned off. Place Sphero in the charger and hit the button on the side of the charger, this should hard reset Sphero.
- **What can I have my students do with BOLT?** Check out the Extension Resources below or the at-home guide that Sphero offers at <https://tinyurl.com/spheroboltguide> for more ideas. You have many options, such as, drive, blocks coding, and Javascript coding with premade activities ready for you. Check them all out!
- **Is aiming the Sphero BOLT the same as it was for Sphero SPRK+?** On previous Sphero models, the user needed to aim Sphero using the blue taillight manually. For this new model of Sphero, they added a compass (magnetometer) sensor inside Sphero BOLT to power a new Auto-Aim feature. On the Drive screen in the Sphero Edu app, notice the new compass-like icon in the bottom right. Tap the button, then tap Auto-Aim, and your robot will quickly sync to the same direction that you are facing! If it isn't working quite right, here are some tips:
 - o Move away from large metal, magnetic, and electronic objects. Even steel beams below you in the floor or the metal pipes on a desk can significantly affect the reading
 - o If you have accuracy issues with Auto-Aiming, instead of placing it on the ground try holding BOLT in your hand, then hit the Auto-Aim button
 - o Auto-Aiming is compatible with most iOS and Android mobile devices, but not with computer/laptop devices, as it requires a magnetometer in your connected device, and most laptops do not have a magnetometer.
- **What are the different Sphero BOLT modes?**
 - o **Off** - The mode when it arrives in the original package. You will NOT be able to connect to BOLT until you transition it into **SLEEP** mode, which you can do by placing it on the charging cradle and letting the light blue animation on the front/back LED's complete. If BOLT won't be used for 4+

weeks, it's best for battery longevity to fully charge, then store it in **OFF** mode, which you can do 2 ways:

- Connect to the Sphero Edu app, tap on your robot name to see the options, then select "Turn Robot Off."
- You can place BOLT in the cradle (ensure it's plugged in) then press and hold the charging cradle button (on the side of the cradle) and simultaneously remove BOLT.

You'll know it's **OFF** because it won't be discoverable by the Sphero Edu the app. After storage, place BOLT in the cradle to turn it to **SLEEP** so it can be connected to the app.

- o **Sleep** - The mode after you have wakened your robot using the cradle, but it's NOT connected to a device. Being in **SLEEP** mode allows the robot to be discovered and connected to a phone/tablet/laptop device over Bluetooth.
- o **Cradle removal** - The mode when you remove BOLT from the charging cradle and notice the Sphero branding, battery charge level, and advertizing name on the matrix.
- o **Play** - The mode when using BOLT while connected to the Sphero Edu or Sphero Play app. For the Sphero Edu app, when in **PLAY** mode the matrix will inherit the color set on the drive screen, or the robot will be running a program. You can exit **PLAY** mode by backgrounding/closing the Sphero Edu app, or click on your robot name and select "Sleep Robot", and then BOLT will enter **SLEEP** mode and the LED's will turn off.
- o **Charging** - The mode when placed in the charging cradle and the cradle is plugged in, where the blue light on the charging cradle are blinking indicating **CHARGING**, and BOLT's lights will be off. When fully charged, the blue light indicator on the cradle will turn solid blue (it will not blink). It takes up to 6 hours to charge a fully depleted BOLT, but it's OK to use a partially charged BOLT, and it's also OK to leave a BOLT on the cradle when it's fully charged.
- o **Firmware update** - The mode when you connect to the Sphero Edu app, you see the firmware update screen in the app, and BOLT's front/back LEDs blink orange for about 30 seconds. You should always keep your device near the robot to avoid disconnect during **FIRMWARE UPDATE** mode. Slow blinking front/back red lights indicate that you started a firmware update that did not complete. If this happens, make sure BOLT is fully charged, then reconnect to the Sphero Edu app and allow the firmware update to complete.
- o **Accidental disconnect** - If you are driving BOLT and drive out of Bluetooth range, or the Sphero Edu app crashes, the front/back LED's will turn solid purple and you will enter **ACCIDENTAL DISCONNECT** mode. This mode continues for 5 minutes until the robot times out and turns to **SLEEP** mode. The robot is still discoverable in this mode.

Extension Resources

- Sphero EDU is the best place to find activities for your students to work through.
- Sphero activities by content and grade level - edu.sphero.com/cwists/category
- Teacher Resource Guide - <https://tinyurl.com/spheroteacherguide>

- STEM education guide - stemeducationguide.com/classroom-activities-sphero/
- Socially distance resources from Sphero EDU - <https://sphero.com/pages/socially-distanced-with-sphero>
- Virtual robot (Beta testing)- <https://support.sphero.com/article/5r76jd3g7o-sphero-virtual-robot-beta>
- Additional Activity Cards to be printed:
https://cdn.shopify.com/s/files/1/0306/6419/6141/files/SpheroEdu-SpaceSoccer-Cards_WEB.pdf?v=1598306925
- Want some help connecting to your class content? Contact us about our Partnership in Planning option for help with planning, executing, and/or assessing.