



# MARS ROVER 1.0/2.0 SAFE USAGE

[HTTP://STARLAB.EDUCATION](http://starlab.education)

IN COLLABORATION WITH:





## STARLAB ROVER GUIDELINES

Obelisk Systems has created the following guidelines to assist your class in the proper use of the StarLAB Rover. Adherence to these guidelines will ensure that all users' and observers' safety remains uncompromised and will also maximise the device's longevity and performance. If you have any questions regarding the use of the StarLAB Rover and its components, please feel free to contact us at [info@starlab.education](mailto:info@starlab.education).

### Welcome to your Mars Rover kit!

This is the first expansion to the Obelisk Systems StarLAB. The Mars Rover kit enables you and your students to take the wireless, sensory, multi-user coding abilities of the StarLAB sensor platform and incorporate movement, automation and of course participation in the National Mars Rover Challenge. Full lessons via the StarLAB Online learning environment will open a whole new range of possibilities, and will equip students with important STEM skills for our ever-evolving world.

This rover kit requires assembly and contains several core items. Assembly may take up to a couple of hours depending on skill level. Do not attempt construction without first following our online instructions and watching accompanying videos.

### Your Kit should contain the following items:

If you have trouble locating any parts, please contact our team at [info@starlab.education](mailto:info@starlab.education).

- Mars Rover Chassis + Motors Box (with screws, fastenings and tools)
- Mars Rover Circuit Board (Brains of the rover)
- Mars Rover accessories bag:
  - StarLAB mounting components and Ultrasonic sensor
  - Connector cables for Ultrasonic Sensor
  - Ribbon cable
  - Screws/Fastenings
  - Velcro Straps
- LiPo Battery
- LiPo Battery charger
- 12V DC Wall Adapter
- Safety Documentation

### Getting Started:

For the most up-to-date assembly documentation, videos, software updates and general help, please direct your web browser to:

<http://starlab.education/setup>

All copies of documentation are also available in the 'Teacher Support' section of the StarLAB online learning environment which can be accessed with your logins at:

<http://learn.starlab.education>

## Usage Guidelines:

**Warning: Failure to adhere to these guidelines may result in injury. Damage to the StarLAB rover resulting from not following these safe usage guidelines will result in warranty being void.**

### MARS ROVER PLATFORM

- Please ensure that you follow our assembly guides **EXACTLY** as they appear. Things such as connections, screw types and positions of electronics must be very carefully followed otherwise damage to the rover and/or electronics will occur. Obelisk Systems takes no responsibility for damage to the StarLAB or Mars Rover kit that is a consequence of not following instructions.
- **DO NOT** expose the Rover to water. (This includes both driving through water and splashing)
- **DO NOT** place fingers in or near the Rover gears or tracks (especially while device is powered) as they may become stuck and/or injured.
- **DO NOT** operate rover in busy locations, ensure that a safe distance between people and the rover is maintained to avoid tripping hazards.
- **DO NOT** touch the Rover motors and motor control board as they may get hot during operation.
- **DO NOT** stress or stall the motors by deliberately jamming them with items or with hands/fingers.
- **ENSURE** that the StarLAB platform is correctly plugged into and clipped to the Rover with provided cables/apparatus as per assembly instructions.
- **DO NOT** stress rover components by bending, compressing, heating or cooling them.

### BATTERY AND CHARGING

- **DO NOT** short-circuit battery or reverse the battery connector polarity.
- **DO NOT** leave batteries connected when not in use.
- **ENSURE** that the correct settings are selected on the charger.
- **DO NOT** leave a LiPo battery charging unattended.
- **DO NOT** charge a LiPo battery which has swelled or has any punctures.
- **ENSURE** that both the balance wires and charging wires are properly connected before charging.
- **USE ONLY** the charger shipped with your rover to charge the LiPo battery
- **DO NOT** charge a LiPo battery while it is installed in your Rover.
- **ENSURE** that the voltage of batteries that have been out of service for >6 months is within the expected range. **DO NOT** attempt to charge or discharge if the voltage per cell is less than 7.4V or greater than 7.7V.
- **DO NOT** store the LiPo batteries where they can encounter sharp or metallic objects.
- **DO NOT** store the LiPo batteries in extreme temperatures below 0C or above 50C, or completely depleted.
- Batteries must be stored in a cool, dry place away from any combustible material. Obelisk Systems highly recommends replacing the LiPo battery after a year of use or storage.
- **If the battery drops below 7.6V the StarLAB will emit a warning sound. It should be turned off and charged before use again. If this is not done, the StarLAB will automatically shut off at 7.5 volts.**

FOR A DETAILED BATTERY MAINTENANCE AND USAGE GUIDELINES PLEASE SEE THE MANUFACTURERS GUIDELINES INCLUDED IN THE PHYSICAL DOCUMENTATION, OR SEE <[LINK TO OBELISK SYSTEMS HOSTED HOBBY KING BATTERY DOC](#)>

