sphero®

littleBits®

AT-HOME LEARNING
FOR SPACE ROVER KIT GUIDE

HI THERE, WELCOME TO LITTLEBITS BY SPHERO!

We're thrilled that you're trying out littleBits for your home learning space. The littleBits Space Rover Inventor Kit is an open-and-go kit designed for anyone looking for a flexible, yet powerful at home STEAM solution.

WHAT IS THIS GUIDE?

This guide will orient you to the content and support materials that come with your littleBits Kit . We'll walk you through:

- What to do first (Hint: Make a circuit!)
- Introductory activities
- Troubleshooting tips
- Supplemental resources

PARENTS: START HERE!

Hands-on learning starts with you. Review the following to understand how littleBits work.

HOW LITTLEBITS WORK

The Bits are designed to snap together, end to end, to create a complete circuit . The magnets inside each of the Bits' connectors ensure that students always attach the Bits the right way.

SNAP
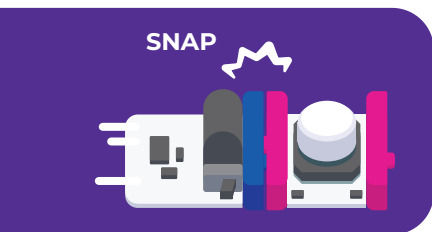
THE POWER BIT, BATTERY & CABLE

Each learner will need a power Bit, a 9V battery, and a littleBits battery cable . All three components are necessary to start a circuit .

9V
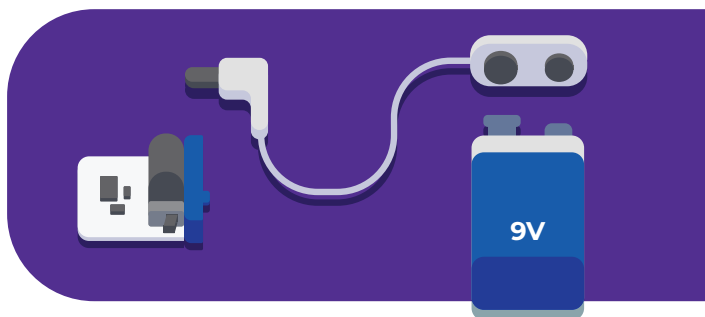
COLOR-CODED

Each Bit is color-coded by its function. There are four colors:

POWER

POWER is needed in every circuit and is the start of all your learners' creations.

INPUT

INPUT Bits add control to the circuit, through information provided from your learners and/or the environment, and send signals to the Bits that follow.

OUTPUT

OUTPUT Bits complete an action or task (for example: light, buzz, or move). These are the Bits that "Do Something".

WIRE

WIRE Bits expand the circuit's reach and change direction . Learners use the wire Bits to help place Bits exactly where they want, especially if they are embedding inside a structure. Some orange Bits also add a level of complexity and programmability to the circuit .
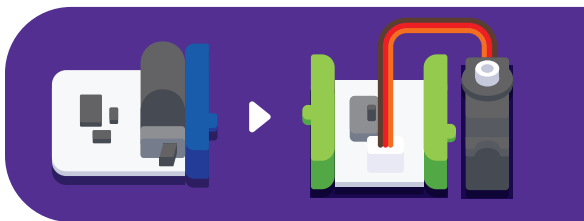
ORDER IS IMPORTANT

Power Bits always come first and input Bits only affect the Bits that come after them.

Pro tip: Bookmark classroom.littleBits.com; it's a helpful resource to return to.

INTRODUCTORY ACTIVITIES

We've curated a selection of inventions and lessons that work well with your littleBits Space Rover Inventor Kit.

Check out https://classroom.littlebits.com/curriculum/at-home-learning-starter-kit or scan the QR Code below to get started.

GETTING STARTED

Introducing littleBits
Introducing the littleBits Invention Cycle

INVENTIONS

Hand Raiser **(Swap Slide Dimmer for Proximity Sensor or Light Sensor)**
Invent a Throwing Arm **(Swap Button for Proximity Sensor or Light Sensor)**
Invent a Creature

GAMES

Carnival Games

The Invention Log guides learners through the engineering design process as they create, play, remix and share their littleBits inventions. The Invention Log Checklist is included at the end of this guide. Scan the QR code below to download the complete Invention Log.

Once you feel comfortable with the Bits, check out the 100+ inventions and lessons on littleBits Classroom for endless inspiration and fun!

Keep in mind that success with littleBits is more than just physical builds and final products; it includes dispositions as well. Consider how you will encourage and/or evaluate growth mindsets and curiosity in your learning environment.

TROUBLESHOOTING TIPS

If you have questions about how a particular Bit works, the Bit-o-pedia: https://classroom.littlebits.com/bit-o-pedia is a helpful resource. You'll also find tips and tricks, real world analogies and more technical "under the hood" explanations.

SANITIZING

Below are Sphero's tips and tricks on how to clean and properly disinfect littleBits.

1 Make sure you 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.

2 Disconnect your Bits from the power source and wipe down with a disinfecting wipe.

3 Allow to dry and store back in their cases. We don't recommend a spray for littleBits as too much liquid could get into the tiny openings/connections.

SUPPLEMENTAL RESOURCES

For more information about Sphero and to get involved in our community you can find links to additional resources below.

SPHERO BLOG:

https://sphero.com/blogs/news

SUPPORT:

https://support.sphero.com/

LITTLEBITS CLASSROOM FORUM:

https://classroom.littlebits.com/explore/search?type=inventions&kit=littlebits-space-rover-inventor-kit

COMMUNITY FORUM:

https://community.sphero.com/

CONTACT US:

https://sphero.com/pages/contact-us

INVENTION LOG CHECKLIST:

Use this checklist to make sure you have completed all of the steps of the Invention Log.

📦 CREATE

While brainstorming, I came up with at least 3 ideas related to the challenge. ☐ ☐

I listed my constraints and criteria for success so when I remix, I can look back and make sure my remixes are on the right track. ☐ ☐

I looked at all of my available Bits and materials and wrote down different ways some of them could help me complete the challenge. ☐ ☐

I made a detailed drawing of my first prototype and explained exactly how I thought it would work during the Play phase of the Invention Cycle. ☐ ☐

✈️ PLAY

I paid careful attention to my prototype while I was playing so I could learn about how it worked. ☐ ☐

I recorded my observations in my Invention Log, including both things that I liked about the prototype and things that weren't right yet and needed work. ☐ ☐

🔀 REMIX

For each one of my remix prototypes, I identified what new thing I was trying. ☐ ☐

Everytime I created a new prototype, I made a new prototype profile in my Invention Log so I could look back at all the different things I tried later. ☐ ☐

After playing with and testing a prototype, I recorded what happened, what was successful, and what still needed work so I could continue to improve my invention. ☐ ☐

💬 SHARE

I created an "after" storyboard to go with my "before" storyboard. Together they show how my invention has solved a problem or filled a need. ☐ ☐

I shared my invention and the story of how or why it was made with someone else. ☐ ☐

I thought about everything I did during the challenge, and wrote down future improvements & new things I want to try when I create my next invention. ☐ ☐