Sphero 680-0900

Sphero littleBits Invention Kit

Instruction Manual (Model 680-0900)

Empowering creativity through electronic invention.

1. Introduction

The Sphero littleBits Invention Kit is a modular electronic system designed to introduce users to engineering design basics and foster critical thinking through hands-on experimentation. This kit allows for the creation of various electronic projects without the need for soldering or wiring, utilizing color-coded, magnetic components that snap together.

2. Safety Information

Warning:

- This toy is intended for use by children over the age of 8 years.
- This product contains small magnets. Swallowed magnets can stick together across intestines, causing serious injuries, infections, and death. Seek immediate medical attention if magnets are swallowed or inhaled.

3. What's in the Box

Your littleBits Invention Kit includes the following components, neatly organized in a durable storage bin:

- 29 Bits (various electronic modules)
- 1 9V Battery (included)
- Durable Storage Bin
- Challenge Cards
- Various accessories for building projects

Image: The littleBits Invention Kit, showcasing the organized components within its durable storage bin, including various electronic modules, wheels, and a manual.

4. Setup and Assembly

The littleBits system is designed for quick and intuitive assembly. Follow these steps to begin your invention journey:

1. **Unpack Components:** Carefully remove all bits and accessories from the storage bin. Familiarize yourself with the different types of bits (e.g., power, input, output).
2. **Power Connection:** Connect the included 9V battery to the power bit. Ensure the connection is secure.
3. **Snap Together:** littleBits modules are color-coded and connect magnetically. Simply align the magnetic connectors of two bits and they will snap together. Ensure the magnets are attracting, not repelling, for a proper connection.
4. **Start with Challenges:** Refer to the included Challenge Cards for guided projects and ideas to get started. These cards provide step-by-step instructions for building initial circuits.

Image: A close-up of hands demonstrating the magnetic connection of two color-coded littleBits modules, highlighting the snap-together design.

5. Operating Your littleBits Kit

The littleBits Invention Kit encourages experimentation and creative problem-solving. Here's how to operate and maximize your experience:

- **Color-Coded System:** The bits are color-coded to indicate their function:
  - **Blue:** Power bits (supply electricity).
  - **Pink:** Input bits (send signals, e.g., buttons, sensors).
  - **Green:** Output bits (perform actions, e.g., lights, motors).
  - **Orange:** Wire bits (extend circuits).
- **Instant Feedback:** The modular design provides immediate feedback. If a circuit is correctly assembled, the output bit will respond. This allows for quick iteration and learning.
- **Guided Challenges:** Utilize the included Challenge Cards to explore various concepts and build specific inventions. These cards offer structured learning paths.
- **Open-Ended Creation:** Beyond the challenges, experiment by combining different bits to create your own unique inventions. There are no limits to what you can design.

- **Collaborative Learning:** The kit is ideal for teamwork. Work with others to brainstorm ideas, build circuits, and troubleshoot designs.

Image: Several littleBits challenge cards are displayed on a surface, illustrating various circuit diagrams and project ideas, surrounded by different littleBits modules.

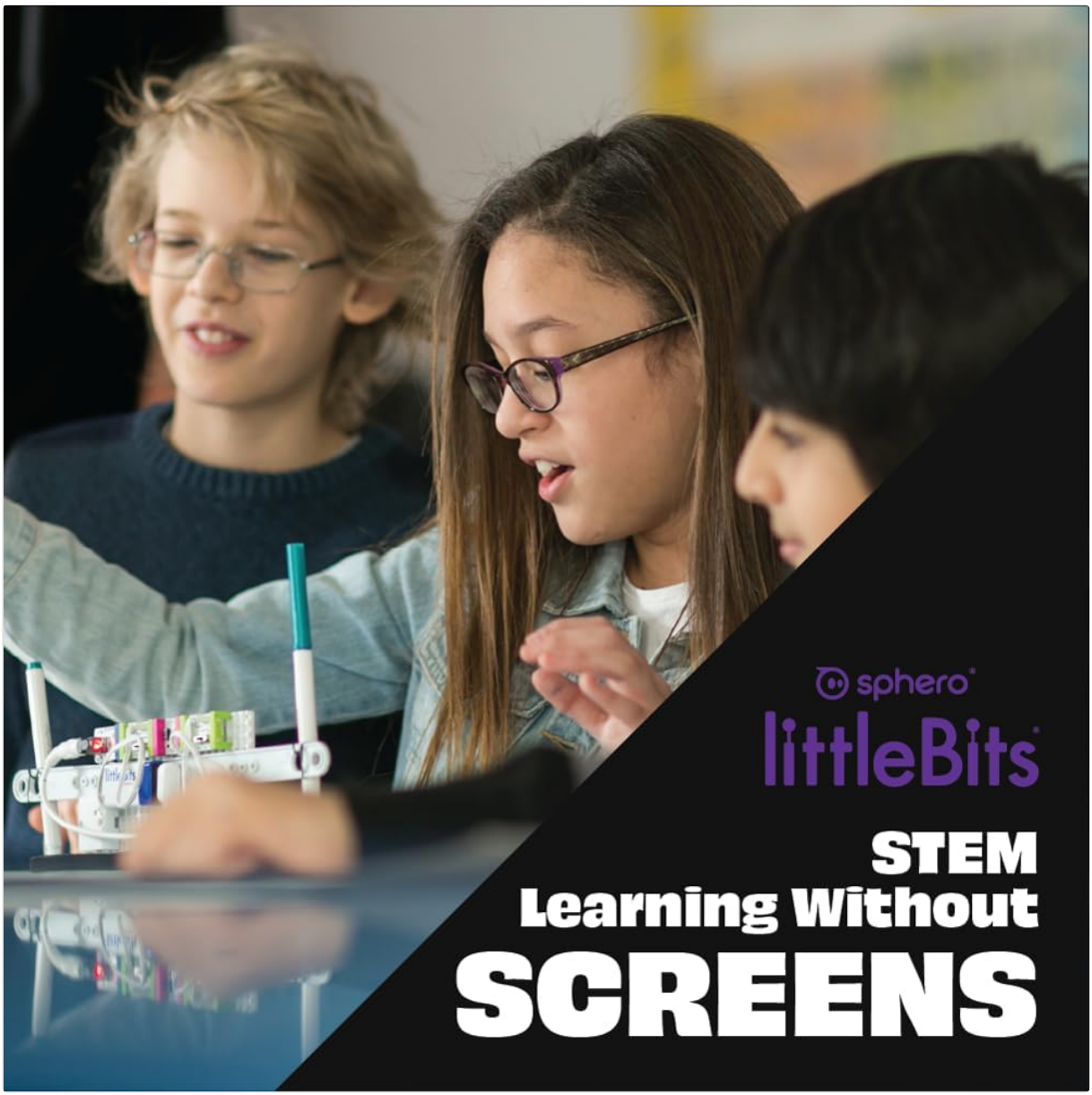


Image: Three children are shown collaborating on a project using littleBits, demonstrating the kit's suitability for group learning and hands-on STEM education.

6. Maintenance and Care

Proper care will ensure the longevity of your littleBits Invention Kit:

- **Storage:** Always store the bits and accessories in the provided durable storage bin when not in use. This protects them from dust and damage and keeps them organized.
- **Cleaning:** Use a soft, dry cloth to gently wipe any dust or debris from the bits. Do not use liquids or abrasive cleaners.
- **Battery Care:** Remove the 9V battery from the power bit if the kit will not be used for an extended period to prevent leakage. Replace the battery when power diminishes.
- **Handle with Care:** While durable, avoid dropping or applying excessive force to the bits, as this can damage the internal electronics or magnetic connectors.

7. Troubleshooting

If you encounter issues with your littleBits kit, consider the following:

- **No Power/Bit Not Working:**

- Ensure the 9V battery is correctly connected to the power bit and has sufficient charge.
- Check all magnetic connections to ensure they are secure and properly aligned (magnets should attract, not repel).
- Try isolating the problematic bit by testing it in a simple circuit (e.g., Power > Output).

- **Intermittent Functionality:**
  - Verify that all bits are clean and free from debris that might interfere with connections.
  - Ensure the circuit is not overly complex for the power source or that there are no conflicting input signals.
- **Bit Damage:** If a bit appears physically damaged or consistently fails to function after troubleshooting, it may need replacement.

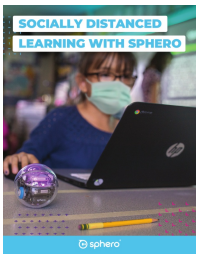
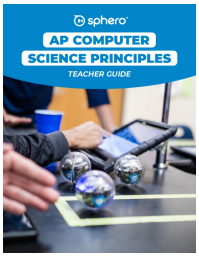
8. Specifications

Model Number	680-0900
Product Dimensions	18.9 x 12.4 x 3.7 inches
Item Weight	4.74 pounds
Recommended Age	8 years and up
Batteries	1 x 9V battery (included)
Manufacturer	Sphero

9. Warranty and Support

For warranty information, technical support, or further assistance with your Sphero littleBits Invention Kit, please refer to the official Sphero website or contact their customer service department. Keep your purchase receipt as proof of purchase.
Visit the official Sphero website: Sphero Store

Related Documents - 680-0900

	[Socially Distanced Learning with Sphero and littleBits] A guide to using Sphero and littleBits robots for education in a socially distanced environment, including classroom management tips, cleaning instructions, activity ideas for school and home, and information on check-out programs.
	[Sphero BOLT+ Quick Start Guide: Programming and Usage] A comprehensive guide to getting started with the Sphero BOLT+ programmable robot, covering charging, app setup, connecting, programming basics, and starter program examples.
	[Sphero littleBits STEAM+ Class Pack Educator Quick-Start Guide] Get started with the Sphero littleBits STEAM+ Class Pack. This quick-start guide for educators and inventors covers setting up the Fuse app, learning block and JavaScript coding, and building fun STEM projects.
	[Sphero indi: Guide for Multilingual Learners] Discover Sphero indi, an approachable, entry-level learning robot designed to empower children. This guide explores how indi fosters computational thinking, coding basics, and problem-solving skills, especially for multilingual learners, through engaging activities like color tiles and challenge cards.
	[IKEA VINDÅS Refrigerator/Freezer Installation Guide] Comprehensive installation guide for the IKEA VINDÅS refrigerator/freezer, including safety information and step-by-step setup instructions. Visit IKEA for more details.
	[Sphero AP Computer Science Principles Teacher Guide] A teacher's guide for implementing Sphero robots in AP Computer Science Principles courses, covering creative development, data, algorithms, programming, and performance tasks.