

No More Missing LEGO Parts: A Simple Inventory System that Works!

Abstract

In this article, we show a method for organizing the LEGO WeDo Robotics Set. The system is proving to greatly decrease the time needed for inventorying parts and storing and transporting LEGO sets, saving youth time in finding parts for the various builds and keeping the hair on leader's heads ☺.

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Introduction

The LEGO WeDo Robotics set is gaining popularity as an effective and fun means to engage youth in STEM Education (Habib, 2012a; Habib, 2012b.) As teachers and leaders begin using the robotics sets, they quickly realize that one drawback is maintaining the parts. A robotics workspace quickly gets cluttered, and parts commonly end up on the floor and lost. In this article we show a parts organization system that is proving to save time and help keep parts organized.

Problem: Equipment inventory. Need a simpler and more efficient way to keep LEGO parts organized and inventoried.

Solution: Figure 1 below is a photo of an opened WeDo Kit. Adjacent to the WeDo Kit is the parts tray in which the WeDo parts are organized into separate compartments indicated on the parts organization card inside the tray.

Figure 1.

LEGO WeDo Kit and the Parts Tray



How to Construct a LEGO WeDo Parts Organization Tray

The following instructions are for one LEGO WeDo Robotics Set, Part #9580.

1. Purchase Parts Tray and Extra Dividers.
 - a. a.Parts Tray: 15"x14"x2" Translucent Art Bin Super Satchel Slim 8 Compartment Box 9101AB. The tray can be found online at: <http://www.stuff4scrapbooking.com/15-x14-x2-translucent-art-bin-super-satchel-slim-8-compartment-box-9101ab.html>.
 - b. b.Extra dividers. The parts tray comes with 20 dividers. You will need 29 dividers. Order extra dividers at: Art Bin; 1-800-232-3474. The company is Flambeau. Be sure to order dividers for the Super Satchel, Model #9101AB. They have packs of 12 dividers. You need one pack.

2. Obtain the WeDo Parts Key Card.

Request the WeDo Parts Key Card file from tewers@uidaho.edu.

Note: This file is a Microsoft Publisher document, and you will need Publisher to open, edit, and print the document.

3. Prepare the Parts Key Card.

- a. Open the WeDoPartsCard.pub file, and compare card to your WeDo Set inventory to confirm type and number of parts. Edit card to match your specific set.
- b. Print out template card on 11" x 17" size paper. You may have to go to a print shop to have them print on a larger paper. Print in color.
- c. Trim the printout along the image borders. Final dimensions of the page should be 12.75" Wide by 11".
- d. Before laminating, label the back of the Parts Key Card with the kit number and the name of

your organization. You may also add logos and contact information. If needed, print out a separate sheet and laminated back to back with the card.

- e. Laminate the card. Again, you may have to go to a print shop for a laminator.
 - f. Cut the excess laminate away so that the card fits inside the top of the tray. Do not cut the laminate too close to the paper, or it will break the seal of the laminate. Note: you may need to sand down the cut laminate border to reduce the sharp edge, which might cause cuts.
 - g. Do not attach the laminated card to the tray. When the set is open, the card may be placed under the tray to line up with the compartments, or it can be used to examine the available parts. It is used to identify where parts are to be placed.
 - h. Label each kit and the parts card if you have more than one kit.
 - i. If you also have more than one kit, you may wish to label each of the electronic parts (hub, motor, sensors) to specify in which kit each belongs.
4. Prepare the Tray.
- a. Place the tray dividers into the tray to match the parts card layout.
 - b. Label the tray to match the card if you have more than one kit.
5. A complete LEGO WeDo Set will fit into one tray. If you have more than one kit, you may want to purchase a file crate to hold and transport them. You may get crates at an office supply store.

Figure 2 below shows the finished product with the LEGO WeDo set organized into the tray compartments. The tray is opened to show the parts and the laminated parts key card, which shows the locations for each part type with pictures and numbers of each part type.

Figure 2.

Opened Parts Tray with WeDo Parts and Parts Organization Key Card



Costs

- Parts Tray and Extra Dividers: ~\$15.00
- Printing and Laminating: ~\$2.00
- Time to assemble: 1-2 hours

Conclusion

This organization system is proving to save a tremendous amount of time to conduct inventory of the kits. Before each robotics session, youth are asked to inventory all parts in their kit by referring to the parts card. This enables them to find parts more quickly when building robots. Knowing that they are responsible for putting everything back at the end of the session encourages them to keep their workspaces tidy. The task of navigating the parts card, which is actually a form of "map reading," is an important skill for youth to master, and we have found that most youth need to practice this skill.

References

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