

Robot Taskbot build – Kathy Weise

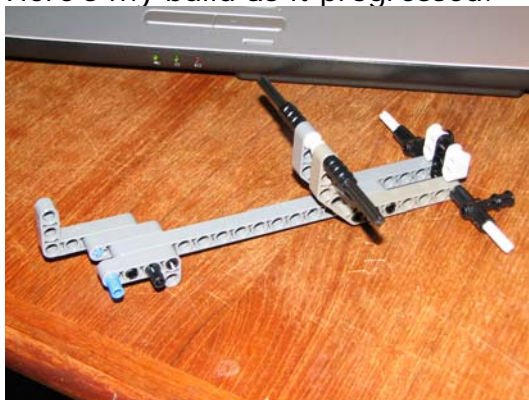
I started by going through the parts lists to ensure I had everything and familiarize myself with the parts. Good thing because I was missing many, as you know. I went to the school with my parts list and the lego book (which didn't do me much good because the Carnegie-Mellon site referenced parts by words but the lego book doesn't – too bad – there should be standard references to these things) and had a nice conversation with our enrichment teacher while I rummaged through boxes and located parts. I couldn't believe how many he had.

So here's my collection of parts (note my helper):

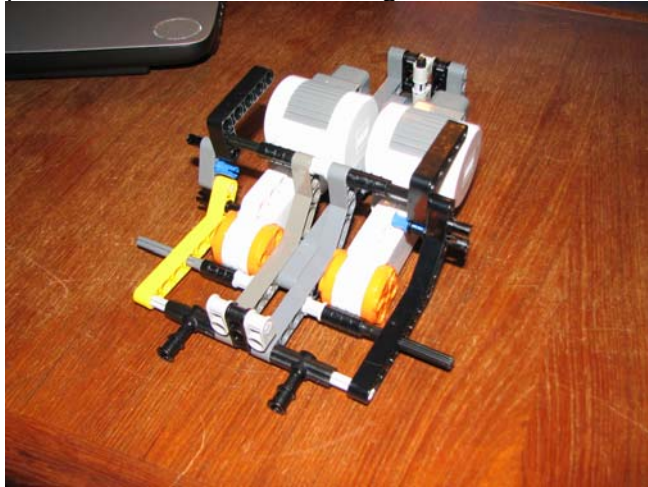


I followed the directions on the screen as I proceeded through the build. I had a terrible time reading the tiny print on some of the directions and there were a few places where I wasn't sure what part they wanted me to use (especially on the connectors – double, triple or the ones with the barrels) but as I progressed through the build I figured it out if I had it wrong and corrected it.

Here's my build as it progressed:



Then I discovered I was missing a piece. Bummer. So I had to go back to the school and get it. But I wanted to make sure I wasn't missing anything else so I proceeded through the build as best I could without it. It was the 3x7 angular beam piece so I built one best I could from other pieces in the box so I could at least proceed for the time being. You can see how I did it – see yellow:



Obviously the motor attachments wouldn't work properly but I went through the rest of the build:



I retrieved the part a few days later and then had to figure out how to take the robot apart to the best step to get it back together – I had to go way back but it was easy to do since I'd already done it all – just follow the steps:



All finished – note my helper again:



Summary:

I found a few things difficult in this project. The first was that I didn't have all the parts needed and it was difficult to hunt them down. I was nervous as I built initially that I was going to be missing something and sure enough I was. It was nice they had a parts list up front – that helped. This could be a problem in a school environment where it's hard to ensure you have everything necessary for specific builds. I also had a terrible time reading the tiny print on the directions – this made it hard for several part selections and placements.

The diagrams on the website were excellent – much better than photographs. I wished there was a way to enlarge them or print them but it worked ok going through the screens.

The build process requires several skills that I think are valuable for students. They need to be organized, be able to read and follow directions, work with three-dimensional diagrams and parts and ensure that they are proceeding through the process properly. There were a few times I had doubts as to whether I was using the appropriate part or whether I was assembling it properly. I double-checked my work as I went and reviewed the diagrams and sometimes had to change the parts based on logic. Assembling the robot actually helped me understand what parts to use, how and why parts were designed the way they were, and why parts were assembled the way they were. Sometimes I didn't understand why a part was placed where it was until a later step but as I got there and determined what it was needed for, it helped me learn how to build robots.

The enrichment teacher told me that he's starting to have difficulties with the build aspect because current students have not played with legos. He's encouraged some of the primary teachers to integrate it into the classroom and has a lego club to help with this. He said the programming and group work are always a big part of the robot team but he always had several students who had the skills of building and now he has to nurture that aspect. It's a little scary that he's not seeing ANY students with experience working with 3D building materials (although he does have a tendency to be a bit old-fashioned and exaggerate some) but I'm sure that developmentally these experiences develop spatial relations and fine motor skills. This activity would meet the objectives of learning to follow directions and perform multi-step tasks, and if working with others, require cooperative skills.