**Unplugged Activity for Camp Wonder**

The PDF is attached to this email.

I have also placed this word file and the PDF on [www.kpscobracoders.weebly.com](http://www.kpscobracoders.weebly.com)

Finally, here is the link for the original source:

<https://www.edison.k12.nj.us/cms/lib2/NJ01001623/Centricity/Domain/58/Unplugged-%20K-2%20Robotic%20Students.pdf>

This is a common activity found in many different sites but I like the simple lesson plan write-up from this source.

My suggestion is that you will modify the plan depending on the age and experiences of your campers. It is highly unlikely that you will complete the activity as it is written in the PDF. As a classroom teacher I might be able to use it as written because I know my students and I know how much background they already have or don’t have with coding and following instructions. You don’t have that luxury, but don’t worry, the activity can be adapted. Also the suggested time is 45-60 minutes. You might not have that amount of time to work with just a few students and even if you did, that’s a long time to spend on one activity. Work with your Camp teachers to see if and when this activity would work best.

For some students the idea of a maze will be new to them.

The concept of moving your body according to a symbol such as  (this means “turn your body to the right but stay in the same spot”) will be new &/or difficult for some students.

Over time they will start to see connections between this unplugged activity, the LightBot and BlueBot apps, Scratch Jr., and using the DASH robot. The commonality is the set of symbols used and one of the first **variables** they come to understand is, what moves varies – in this case a person (as a robot), in the apps it’s a virtual Bot or Bee, with the LightBot planning sheets it’s a LEGO person (or substitution), Sprites in Scratch Jr., and of course, DASH. As they have multiple experiences (and then MUST have multiple experiences) with these activities the learning time to “play” the program successfully shortens as the connections are made from one to another.

In three weeks you will not be able have every camper experience all there is to learn with these apps and robots so don’t try to do it all. The deeper the experience by returning to it again and again is better for your students to make the connections continue in September.

The starting point mentioned in the PDF is to have students work in pairs and then give the student partners a worksheet. I suggest that you work with a small group and the first time you make the large chart (perhaps on chart paper) so that it is clear for everyone to see. This is a great activity for the **Think Aloud strategy** (see below\*). You talk out what your brain is thinking is a short simple explanation of the strategy. So for this activity it might sound something like this.

“*OK today we are going to pretend we are robots. Robots are liked computers because neither one has brains. They can’t think for themselves and perform tasks by themselves. People have brains and we can make a set of instructions so the computer or robot can do what we want it to do.*

*I want to move from here to there without bumping into these obstacles. I think a good idea would be for me to talk and walk my way through it. Then I need to write down what I say so I don’t forget and others can read my instructions and get through the maze too.*

*OK here I am at the base. That’s where I start. I am going to go forward one step (or block/tile depending on your surrounding at camp). I can go forward another one step. Uh Oh. There is a chair in front of me. I can’t go forward. Oh. If I turn my body to the right, then I can move forward one step. Now I can take another step forward and another step forward, that’s three steps forward in a row that I can move*

*… Ok I’m at the end. Let’s go back to the base and you can help me write my instructions to get through the maze.*

*… I suppose I could write the words Turn Right but could I use a sign that would be faster? A bent arrow? Great idea! … Three straight arrows means I go three steps (tiles) forward. [Later on you might want to develop the idea of adding a “3” in front of the arrow or even the idea of “Loops” – the students will encounter loops in LightBot and Scratch Jr. and DASH coding] [If you could work in a mistake so that it doesn’t work out the first time that would be great. It will give the students a chance to* ***debug*** *it and a chance to help develop their Growth Mindset]*

*… Ok. Let’s try it out. Who wants to be the robot? Who wants to be the computer programmer?*

*…Uh Oh. We ran into that chair. Let’s go back and debug our program so that doesn’t happen. Any ideas what we need to do?*

*… Let’s move some of these obstacles around to a different place. Now with your partner let’s code a path through our new maze*.”

As the days progress this could be a centre you set up for students to explore. Also if space is a problem consider using a 100 mat if the room has one. If not, make a chart on chart paper and leave out small objects for students to put in different spaces and then code through the maze they built.

\*Here is a link to read more about Think Aloud Strategy: <http://www.readingrockets.org/strategies/think_alouds>

\*That on-line article refers to reading but for math the connection to **Number Talks** is easy to see. Want to learn more about Number Talks? Here is a link:

<http://www.guided-math-adventures.com/?page_id=126>