

December 2014

Dear Parents/Guardians,

As we have begun the second quarter, I wanted to update you about the exciting things your children are learning in the computer lab.

Second quarter bring the time of year where your children learn about computer programming. Students will be learning about the basics of “how to speak computer language”. Computer programming is an industry in our country where lots of jobs are available for those who know how to do it. It offers many opportunities to work all over the world and help many other industries and communities.

The major resource I am using to support our computer programming learning is **CODE.ORG**. They have created lots of activities for people of all ages to learn the basics of programming and beyond.

I want to offer easy ways to support our learning in the computer lab. If you have internet access at home, have your children go to code.org to show you what they have been working on. They can teach you to computer code! If you do not have internet access at home, attached is a simple game you can play that reinforces the step by step direction making that is required by computer programming.

The following websites and apps are other options that are available to help your child develop programming skills: Lightbot, Lightbot Jr., Kodable, Cargo-bot, Bee-bot, Daisy the Dinosaur, Tynker, Cato's Hike, My Robot Friend, Move the Turtle, Hopscotch, <http://scratch.mit.edu>, and <http://lightbot.com/hocflash2014.html>

Finally, if you find your child really loves programming and you have access to the internet, I have an opportunity for them to take free online class based on their age. If you are interested, please contact me. Its a great opportunity to have and I can support your child through the course.

As always if you have any questions, you can reach me best through e-mail: cplover@philasd.org. You can also leave a message for me at the office: 215-456-3001.

Thank you for your continued support. Enjoy your winter vacation.
Sincerely,

Mrs. Christina Plover

Harold the Robot

Thinking about programming languages

This simple but effective activity was invented by Richard Nelson, Jason Clutterbuck, Sebastian Höhna, Stefan Marks, and Wilson Siringoringo at a workshop for Postgrad Computer Science students in April 2008.

In this activity children simply give directions to a “robot” (either an adult or another child) and find out which instructions the robot is able to follow, and how their instructions are taken literally.

1. Place a small collection of blocks or similar objects on the bench.
2. One person (parent) plays the role of Harold the Robot. Harold can only respond to particular commands. These commands are *not* given to the children, and can be made up on the fly.
3. Have a child talk Harold through making a tower out of the blocks using instructions such as “Move your hand to the left”, “Pick up the block beside your hand” and so on. If the child gives an instruction that is too complex or otherwise not in Harold’s vocabulary (e.g. “put the three blocks on top of each other”) then Harold expresses confusions by shaking his head or burying his head in his hands.
4. The task is completed when the tower is built. At this point, discuss with the children about which commands it would be reasonable for the robot to respond to, which wouldn’t make sense. Does a small vocabulary limit what can be done, or does it simply make more instructions necessary?

This activity is intended to expose students to the idea that computers follow instructions very precisely, which can be frustrating at times. It also raises the issues surrounding choosing instruction sets, and whether it’s better to have a large complex instruction set, or a small efficient set.

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