



Column: Elementary Explorations Using Technology with Young Children

Kristen Poindexter

Abstract

Using technology with young children can be intimidating and many teachers are unsure where to begin. This article shares several ways that teachers can incorporate technology into their classrooms, while teaching young children to appropriately use and care for the technology. Students can also begin to learn basic coding schemes and several are shared.

December and January offer so many opportunities for young children to explore technology. Beginning during Hour of Coding week in December, I introduce a new form of technology to my kindergarten students every few days. Each of the options I share with them will remain out in the classroom for the remainder of the school year. Through grant writing, I have been able to build up a collection of several different coding bots. We use them to engage in seasonal activities as well as to tie to several Computer Science standards.

I currently have a set of 8 Ozobot Bits and in addition to teaching my students how to use them and code

them. I also teach them how to care for them, charge them, and develop their own activities using other materials in our classroom. I begin by teaching the different color markers that Ozobots are able to recognize (red, blue, black, and green) and how to make thicker lines that the Ozobots will be able to read. We test out all kinds of lines to determine which width the lines need to be and then practice how we can make them with markers in our classroom. We also learn that the lines need to be spaced enough apart from each other so we do not confuse the Ozobot (Figure 1).

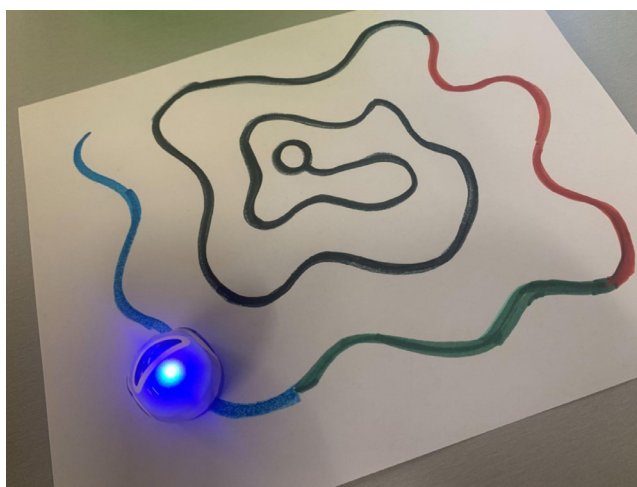


Figure 1. Ozobot Bits

Full listing of authors and contacts can be found at the end of this article.



Published by the Hoosier Association of Science Teachers, Inc. (<https://hasti.org/>) ISSN 2475-451x

© Poindexter, 2024. **Open Access** This journal is distributed under the terms of the Creative Commons Attribution NonCommercial NonDerivative 4.0 International License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits unrestricted use, distribution, and reproduction without revision in any non-commercial medium, provided you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license.

I will then show students some of the coding schemes (<https://ozobot.com/create/color-codes/>) and we practice the color codes by having reindeer races (lesson and reindeer templates: <https://ozobot.com/educate-3/lessons/>). Students are given a long sentence strip and create a race track that will help their reindeer win the reindeer race (Figure 2). They can choose color codes that will help their reindeer go faster, backwards, get a turbo boost and more! This helps students learn some basic color codes and how to use them to their ad



Figure 2. Ozobot reindeer races

vantage. K-2.PA.3: Develop programs with sequences and simple loops to express ideas or address a problem.

We also use the Ozobots to play a Hanukkah dreidel game. The lessons can be found on the Ozobot website. For this game, the children need to practice the color codes to help their dreidel spin and spin in the correct space so they are able to take more gelt from the pot. We use math cubes or mini-erasers as our gelt (Figure 3).



Figure 3. Dreidel game

The next type of robot that we use are called Beebots. They are perfect for younger students because they are larger and because they are easy to program. There are several simple buttons on the top of each Beebot that allows students to code the direction they want the Beebots to go. I show students how to move the Beebots forward and backward and then left to right. We also learn how to program a sequence to help the Beebot get from one place to another with accuracy. The standard K-2.PA.1: Breakdown and plan the order

of the steps needed for a desired outcome to accomplish the goal, helps children accomplish this task. I purchased several BeeBot mats, but have also created my own mats out of shower curtains (Figures 4 and 5). One problem with the shower curtains that we have discovered, is that the squares are not aligned with the length that the BeeBot moves in any one direction. Before creating your own design, measure the length that your BeeBot moves forward, backward, left, and right so that your students can code the bot appropriately.



Figure 4. Beebots and letters mat



Figure 5. Beebots and park mat

Author

Kristen Poindexter (kpoindexter@msdwt.k12.in.us) is a Kindergarten teacher in MSD Washington Township, Indianapolis, Indiana, USA.