Jen Gilbert

PTO GIFTS PROGRAM

Requests for PTO Funding 2016-17

Any teacher, parent, or student who has a request for funds from the PTO must fill out this form. Please answer these questions as thoroughly as possible, providing supporting detail and information. When completed, please return to the administration at either school by **Friday, October 21, 2016**.

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1. **Define your request:**

   We are seeking several items to enhance our existing robotics and programming work in the Coding Kids that will also be shared with classrooms for additional projects/activities. Items are in two categories: enhancements for existing resources or new resources.

   Enhancements for existing resources:
   - LEGO mini-figures (use with WeDo 2.0 robotics and stop motion storytelling)
   - LEGO base plates (use with WeDo 2.0 robotics, stop motion storytelling)
   - Headphone splitters to assist when pair programming (partners working together on one device)
   - SD cards (for older cameras, to use for photography groups at recess)

   New resources:
   - LEGO set (general pieces for stop motion storytelling)
   - iPad clamp stands/tripod mounts (to assist with filming stop motion)
   - Cozmo robot to test Artificial Intelligence and SDK (software development kit) with students

2. **Amount requested:**
   Current cost breakdown for items totaling **$609.94** is listed below:

Item	Quantity	Unit Cost	Shipping	Total
LEGO mini-figures	3 sets of 10	$18.00	$0.00	$54.00
LEGO base plates	6	$7.99	$6.00	$53.94
Headphone splitters (dollar store)	12	$1.00	$0.00	$12.00
SD cards	5 packs of 2	$8.00	$0.00	$40.00
LEGO set	1	$30.00	$6.00	$36.00
iPad tripod mount version	2	$40.00	$20.00	$100.00
iPad stand clamp version	2	$50.00	$20.00	$120.00
Cozmo robot	1	$179.00	$15.00	$194.00

3. **Can this project be funded in stages? If yes, what timetable is involved? If no, please explain your due date for funds.**

   Ideally all projects that use these items will run concurrently throughout the year if the entire amount is funded at the same time.

4. **Has this request been reviewed by the school administration? What was their response as to its merit and priority?**

   MFG *I support this proposal! M.F.G.*

5. **Number of Students that will be impacted or benefit from your request:**

   Our Coding Kids program has 75 students participating in the fall session. Throughout the year new students join subsequent sessions bringing the total closer to 100 out of our current population of 194 students served over the school year. When used for whole-school activities (e.g., National Robotics Week "Robots on Tour") every student has the opportunity to interact with the same tools we use in the Coding Kids program.

6. **Is this a one-time request or do you envision needing additional PTO funds in the future or long range? If you will require additional PTO funds, please explain why this cannot be added into your annual budget.**

   The items covered here are a part of a one-time request.

7. **What is the intended goal of your request? Would it have any other uses or applications? Is this a start up program or is it enhancing an existing program? Use additional paper if needed.**

   The goal of this request is to enhance existing activities and projects as well as try new tools in the Coding Kids program at Middlefork School. None of the items requested are consumable, so they can be used from year to year. The mission of the Coding Kids program is to "foster a learning community that will explore, dream and create with tools related to computer programming, robotics and maker education using the engineering design process." To that end we want the Coding Kids to have the chance to explore new tools and bring their ideas to life. A main focus of the work we do is to build leadership skills that allow students to bring the tools they learn about into their classroom (and beyond). Every item we use (e.g., robots, Makey Makey's) has traveled to or been used by classrooms/teachers outside of the Coding Kids program. Many of the larger scale collaborative projects are made possible by the materials we have in the Coding Kids program. For example, the interactive exhibit (Picasso's Guitar Remix with Makey Makey's)

done with Robin Nagy and the entire 3rd grade class in the spring of 2016 used equipment/materials from the Coding Kids program.

In June 2016 we piloted our first summer robotics camp and funded the purchase of six LEGO WeDo 2.0 robotics kits. During that summer camp we learned that students wanted to add mini-figure characters to the stories they told through the LEGO robots and models. The WeDo 2.0 kits do not come with the mini-figures but we located a way to get them at a reduced cost by purchasing random sets of characters. We have also explored several stop motion activities that would benefit from the mini-figure characters along with base plates to use as a stage. Aside from the WeDo 2.0 kits that must be kept organized in their own bins we do not have our own set of LEGO for general building use in projects and to integrate with our robots (several have LEGO adapter components). Two different iPad holders are listed to have different options for using the iPad to film for stop motion (or anything else).

The Cozmo robot is a new item (produced by Anki) that has the potential to grow through the SDK available to students and teachers. Students can access the robot directly to program it through a tethered interface and directly input Python commands. As students become more curious about how robots work or how they are built it is nice to provide them with tools that go beyond the playful learning phase. Out of the box the robot interacts with people (introduces Artificial Intelligence in a new way) when connected to an app and requires no programming for basic commands. As students want to try more with the robot they are encouraged to dive deeper into the inner workings of the system and test their ideas. We encourage the playful learning for students to explore tools in a developmentally appropriate way but always push them to reach past that phase to find new ways to use a tool or apply their knowledge in another area.

8. **What are the long range benefits of your request?**

Providing a handful of new tools or enhancements to the Coding Kids program will benefit students now and in the future. Since none of the materials are consumable we can use them for years to come. We are also able to provide classroom activities based on the ideas generated and tested in the program. The Coding Kids program helps reinforce the maker culture that empowers students to not only try new things but to dream about the "what ifs" and then create/build something tangible from those dreams.

9. **If you are requesting a capital asset/investment, please provide a minimum of two options/pricing quotes on the item and attach to this form. Please identify your first choice and why.**

N/A

10. **Have you exhausted all other funding options before coming to the PTO Gifts Program?**

Two additional developmentally appropriate robotics kits are being sought through a "mini-grant" proposal outside of the district. These KIBO robotics kits are ideal for primary students and will fit seamlessly into classroom activities starting in Kindergarten.