



## SCHOOL BOARD MEETING REPORT

**Board Meeting Date:** 10-16-19      **Superintendent:** Dave Valenzuela

**Administrator/Staff:** Dave Shindelman

**Type of Item:**     *Informational*     *Action*

**Please state your proposal briefly and clearly. What do you want the board to know, discuss, or decide?**

Mr. Shindelman is seeking a grant through NWCU for additional sphero robots for his technology class. The grant request is for \$1484.86

**Provide history/background information on your proposal:**

Mr. Shindelman has applied for and received this grant in the past. He teaches a technology class to all 7th graders. Fleming currently has one set of sphero robots however, the current set of sphero robots Fleming is wearing worn out and we are in the need for them to be replaced..

**List the advantages of your proposal:**

Having the materials needed for the class and more students are participating with more materials available.

**List possible disadvantages of your proposal:**

no disadvantage

**List possible alternatives that could also offer a solution to your proposal. Why were they not recommended?**

Using school funds to replace the sphero robots- some funds were used to make this happen

**Superintendent's recommendation(s):**

**Approve:** Yes  No

**\* SUMMARIZE YOUR REQUEST**

**Tell us what are you requesting and why are you requesting it in 1-2 sentences. This provides a quick reference for the selection committee.**

I am requesting 10 Sphero-Bolt robots for Fleming Middle School students to learn java and block programming in a fun, creative, and educational way. Computer programming is one of the top STEM priorities for students to be able to compete for jobs in an increasingly tech-focused work environment that exists today.

**\* TOTAL AMOUNT REQUESTED:**

**Requested amount must fully fund items requested and meet criteria.**

**\$1484.86**

**\* NUMBER OF STUDENTS IMPACTED:**

430 6th, 7th and 8th grade students school wide.

**\* WHAT IS NEEDED?**

**Describe your request and how funds will be utilized in specific detail. A list of all materials requested and itemized budget are required. If requesting technology, provide brand name and specifications (memory, processor speed, screen size, etc.). Include web links whenever possible.**

I am requesting 10 Sphero programmable robots to introduce Java and block programming computer languages to the middle school students at Fleming Middle School. I am also requesting 2 ramp sets and 10 rubber covers to protect the Spheros when they are being used outside.

Total request: \$1484.86

Spheros: 10 @ \$128.50 = \$1285.00

[https://www.amazon.com/gp/product/B07DLM5DL7/ref=ox\\_sc\\_act\\_title\\_2?smid=ATVPDKIKX0DER&psc=1](https://www.amazon.com/gp/product/B07DLM5DL7/ref=ox_sc_act_title_2?smid=ATVPDKIKX0DER&psc=1)

Covers: 10 @ \$11.99 = \$119.90

[https://www.amazon.com/gp/product/B017P9POT0/ref=ox\\_sc\\_act\\_title\\_1?smid=A1VHS3H91E1YRN&psc=1](https://www.amazon.com/gp/product/B017P9POT0/ref=ox_sc_act_title_1?smid=A1VHS3H91E1YRN&psc=1)

Jump Ramps: 4 @ \$19.99 = \$79.96

<https://www.sphero.com/jump-ramps>

**\* WHY IS IT NEEDED?**

The robots will be used as an avenue for students to learn programming skills. The Spheros can be programmed to roll, change direction, change colors, make sounds, spin, and jump after connecting wirelessly to the existing school Chromebook computers. I will use these robots in my Technology 2 class. During the

first four weeks of class, half of the students will learn how to program the Spheros, while the other half will learn programming using existing Lego EV3 robots. After four weeks, the students will exchange robot platforms in order to reinforce and build upon the programming skills they learned. During the final week of class, all students will build "Chicken Chariots", an activity during which they will design a chariot that can be pulled by the Sphero. The Spheros will race through a course that students programmed their robots to maneuver, and the Chariots will carry a raw chicken egg!

**\* HOW WILL PROVIDING THIS FUNDING IMPACT THE EDUCATION OF KIDS?**

**Describe how it will enrich or enhance classroom-learning/instruction, increases student engagement and/or achievement. Tell us if it provides a learning opportunity that wouldn't otherwise be available. Financial Reality Grant requests must describe how the instruction will build or improve student's financial literacy.**

At Fleming Middle School, we recognize that STEM education (Science, Technology, Engineering, and Math) is essential for preparing students to be competitive applicants for jobs later in life. By learning computer programming in middle school, students develop critical thinking, problem solving, and logical thinking skills early in life, while learning a highly employable skill. Fleming Middle School primarily serves students from a low socioeconomic background who have extremely limited opportunities to learn these skills at home. To provide students with the opportunities that they deserve, the 6th, 7th, and 8th grade science teachers at Fleming are putting together a sequence of tech goals that we believe will provide opportunities that both introduce and inspire students to participate more fully in math and science classrooms, and will encourage them to eventually choose STEM careers. Within this new sequence, 6th grade Tech 1 students will build technology projects more in line with STEAM (Science, Technology, Engineering, ART and Math). My 7th grade Tech 2 class will serve as an introduction to programming machines, and the 8th grade Technology 3 teacher will build upon the 2 previous years with student led projects using a 3D printer. The first two years of our technology track will give students a broad introduction to engineering and programming, which will allow them to succeed in their third year while using this knowledge for 3D production of useful classroom demonstration items for teachers, as well as fun constructs for themselves.

**\* WILL OTHER FUNDING BE USED IN CONJUNCTION WITH THIS REQUEST?  
PLEASE INCLUDE PENDING GRANT REQUESTS.**

**IF YES, PLEASE EXPLAIN:**

The school currently has 4 LEGO robotic sets that will be used during the opposite 4 weeks that half the class will be using the Sphero robots. I am requesting funding from the Josephine County Foundation to purchase 4 more LEGO sets costing \$1644. This number of sets will allow classroom flexibility for students to work either individually or in small groups. Fleming middle school will be purchasing 6 Sphero robots for a total of 16 when added to the 10 requested in this grant. Eight Lego sets will allow for 8 teams of 4 students, and 16 Sphero's will allow for 16 teams of 2 students.