

# #16

**COMPLETE**

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**Q1 LEA School/District Name**

Manila High School

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**Q2 LEA Contact Name**

Mr. John Parrish

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**Q3 LEA Contact Title**

High School Principal

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**Q4 LEA Contact Email**

parrishj@mps.crsc.k12.ar.us

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**Q5 LEA Contact Title**

High School Principal

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**Q6 LEA Contact Phone Number**

870-561-4417

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**Q7 Grant Level Proposal**

**Medium - \$7,500 to  
\$20,000**

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**Q8 PROPOSAL DESCRIPTION (MAX 3000 Characters)** - provide a narrative regarding the need for the proposed program/project, specific goals to be achieved, and how if funded the program is likely to achieve those goals.

Coding Through the Innovative Use of Embroidery Machines will create equity in the computer science classroom through the inclusion of predominantly “girl” activities. This project will increase the number of female students into the computer science and engineering classrooms while at the same time increasing male students into FACS classes. This project is multidimensional in that it encompasses many disciplines and can even be extended in the future to include other forms of final coding projects. This project will include the use of Turtle Stitch and an Embroidery machine. Students will use the online program Turtle Stitch to actually design original artistic creations through the use of computer programming that they can then stitch on the Brother embroidery machine. Our engineering students will create patterns for our new projects, such as aprons for pre-k students or pill pouches for nursing home residents; in FACS classes students will create the product from scratch according to the engineering students’ specifications; in computer science classes students will actually code the final ornamental design to be used according to the specifications previously discussed with the engineering student and the FACS student. Each group of students will be responsible for teaching another group the skill perfected. This circular process ensures all students learn all skills taught. This brings a physical product to coding that students will find rewarding as well as challenging. By having a product, that students can actually feel and hold, you bring a whole new area of learning to computer science with a kinetic relationship to coding. This type of physical product is normally one considered a female activity, but it is created through a typically male activity coding. Students will be able to take home this product to share with parents, siblings and friends which will in turn lead to teaching others and creating a community of coders in Northeast Arkansas. Outreach is paramount to the success of this program. We intend to teach interested parents and community members to code through the use of Turtle Stitch and embroidery. We plan to hold after school or evening sessions for adults and take turtle stitch to the middle school to do demonstrations and develop interest for the future of our programming courses. Finally, we want to bring Turtle Stich to area schools other than ours. Our goal is to teach surrounding schools the skills to use Turtle Stich and to collaborate with them on long term outcomes for our region. If funded this program will encourage young women to consider careers in the STEM field and create equity in computer sciences classes in our school. Right now our STEM courses, computer science and engineering, have a four to one ratio of males to females. With the addition of this cross-curricular project we plan to even that ratio while providing a service to our community.

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**Q9 PROPOSAL TIMELINE (MAX 1500 Characters)** - list major activities of your proposal with approximate target dates

January – Receive materials and supplies and attend training February – Turtle stitch and Embroidery in classes March - Begin community outreach projects. Choose a path either work with nursing home residents or preschool students at first. First after school Parent Student Coding with Turtle Stitch Academy April – Invite Jonesboro Sewing and Vacuum to attend Turtle Stitch training to enable the program to spread via community support in Jonesboro AR First Turtle Coding with Middle school students June /July -Training to teach other FACS and Computer Science Teacher to use Stich and embroidery machines to bring coding to create gender equality

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**Q10 PROPOSAL EXPECTED RESULTS (MAX 1500 Characters)** - Describe the student outcomes, or changes, that will result if this proposal is funded.

Our school’s computer science program is dominated by young men. Our computer science courses have a three to one ration of male to female students. To us this is unacceptable. This project will enable these young men to be exposed to a traditionally female project, sewing, but more importantly it will expose our young women to the traditionally male dominated field of computer science. Once they are “hooked” on creating new ideas and creations, young women will see that computer science is not just for “boys.” This project will cross gender lines by making computer science a “girl” activity but also bring the young men into FACS classes and sewing, making this a perfect cross-curricular project. We expect to see our students already enrolled in computer science dive deeper into programming and further develop programming skills. This project will lead students to deeply understand the need to create algorithms, and comment code. Once the student sees the physical imperfections of poorly written code, we also expect to see code that is more concise as well as more precise on a daily basis in the classroom.

**Q11 PROPOSAL EXPECTED IMPACT (MAX 1500 Characters)** - Describe the estimated number of students, teachers, and/or community members that will be impacted and how they will be impacted if this proposal is funded.

This project will impact our entire community. This program will begin with 150 students and community members. Since this project is planned with outreach in mind there is really no way to calculate the number of community members we will eventually reach but we hope to blanket our community. We plan to use this project as an outreach program to get everyone interested in or at least familiar with programming. By allowing parents and community members to be involved and to learn coding themselves we gain stakeholders in our programs. This support will equal greater numbers of students along with more students who will enter STEM careers. We plan to have after school sessions in which our students teach their parents how to code and take away a physical representation of the code, then move on to the younger students and use turtle stitch along with the embroidery machine to do the same. We plan to use this as a long term project that will continue to bridge the gender inequality in our programming, engineering and FACs courses.

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**Q12 INNOVATIVE ASPECT (MAX 1500 Characters)** - Describe why this proposal is creative and should receive funding as an out of the box way to support student growth/achievement.

As of today, there is only one school in the United States that is using Turtle Stitch and Embroidery machines to teach coding. This program will not replace a more traditional programming class but its inclusion means that we will teaching using progressive methods. With just one training event and a few google searches, it is easy to see the implications of using a plan that creates a physical product to teach coding. All it will take will be one imperfect physical product for students to be able to see the need for debugging, or commenting code, or creating clear algorithms and thinking prior to writing code. These skills are the ones our computer science students are weakest, so this project will not only help bridge the gender gap but it will also create better coders overall. This project will also transform how students learn soft skills of computer science. Communication, collaboration and creativity are all skills that this project will enhance greatly. These students will have to work together to create novel ideas and designs then they will have to please a "customer." The ability to hold a physical representation of your code and feeling your successes or your mistakes is one that will transform our programming courses as well as adding dimension and depth to engineering and FACs courses. The attention to detail that students learn from this project will carry over not only into programming classes, but to every area of academic achievement.

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**Q13 TRANSFORMATIVE POTENTIAL (MAX 1500 Characters)** - Describe how this proposal if funded and implemented beyond your program has the ability to raise student achievement across the state.

Many schools could implement this project easily and affordably with the help of CTE. Anyone with a FACs program of study will be able to apply for funding through Perkins resources to expand their program to implement this as well. Thus helping to erase the gender equality gap for our entire state. At the end of the school year we plan to train other teachers on Turtle Stitch and Embroidery machines in order to spread this idea to other teachers and schools. Right now computer science is taught in isolation this would make computer science inclusive in way that has never happened before. While some students might be interested, many more are intimidated by the "idea" of computer science. Many students believe that computer science is a career that leads to isolation. It is imperative that we teach our students that computer science encompasses so much more than just the code on the screen. Our project not only gives students the opportunity to work with one another, they will also have to meet and work with the public with a wide range of ages, from pre – students all the way to nursing home residents. This will create a new learning environment for programming, engineering and FACs students. Even if students chose another career field this program will help students see the need for detail and precision that will be hard to instill otherwise. Once the idea is implemented in other schools our region will be a rich resource for our community.

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**Q14 FOLLOW UP and/or MARKETING/OUTREACH (MAX 1500 Characters)** - Describe how your organization will follow up on this program after completed and/or how it will be marketed to and awareness raised within the community if the proposal is funded.

Marketing and outreach are the largest part of this project. In order for this project to succeed we will need community support and excitement. Among other things we plan to create personalized pill pouches for the nursing home residents who can travel home, school stadium blankets for our athletic fans, aprons, chair organizers and individually coded projects for students and parents to keep. These items are intrinsic to our plan to recruit more students as they are a day to day reminder of each person's own coding experience be it through a students' donation or through one's own novel coding experience. These students will also learn how to create the patterns and sew the items prior to coding the designs. We plan to partner with Jonesboro Sewing and Vacuum to hold trainings for the employees so they too can train other teachers in the area. Jonesboro Sewing and Vacuum will also provide lifetime free training for our machine so our school always has teachers knowledgeable to complete and innovate with this project.

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**Q15 Budget Proposal**

**Grant Budget Proposal.pdf (213.3KB)**

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# Grant Budget Proposal

ITEM	Cost
Brother PR 670E Embroidery Machine with Stand	\$10,741.45
From Jonesboro Sewing and Vacuum	
Assorted Threads/Needles from RedRock.com	\$370.90
Stabilizers/Bobbins/Scissors from Amazon.com	\$302.03
Fabric from Joanns.com	\$725.14
<b>Total:</b>	<b>12,139.52</b>

## Itemization

Jonesboro Sewing and Vacuum Items	Cost
Brother PR 670E Embroidery Machine with Stand	\$10,741.45
Lessons	

Red Rock Thread Items	Cost
Organ Babylock Brother PR600C Size 14 Needles	\$52.50
Organ Embroidery Large Eye Titanium Size 14 Needles	\$59.50
Floriani 60 Top Selling Colors Thread Set	\$252.95

Amazon.com Items	Cost
Westcott Titanium Bonded Scissors ( 2 pair )	\$9.25
Ginger Inc. Applique Scissors	\$23.46
ThreadNanny 6 inch Double Curve Machine Embroider Scissors	\$18.45
Wash Away Water Soluble Stabilizer	\$16.59
New Brothread Tear Away Stabilizer 10X12 precut sheets	\$66.36
Fil-Tec Magna Glide White Bobbins L	\$97.20
Tear Away Machine Embroidery Stabilizer Backing 8X8 precut sheets	\$44.90

Joanns.com Items	Cost
8 yds. Blue Fleece	\$51.92
8 yds. Very Berry Fleece	\$39.92
8 yds. Red Fleece	\$39.92
8 yds. Yellow Fleece	\$39.92
8 yds. Brown Fleece	\$59.92
4 yds. Kona Cotton Fabric White	\$35.96
8 yds. Kona Cotton Fabric Black	\$71.92
4 yds. Kona Cotton Fabric Brown	\$35.96
4 yds. Kona Cotton Fabric Ivy	\$35.96
4 yds. Kona Cotton Fabric Blue	\$35.96
4 yds. Kona Cotton Fabric Purple	\$35.96
4 yds. Kona Cotton Fabric Gray	\$35.96
10 yds. Warm and Natural Cotton Batting	\$99.90