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Q1 LEA School/District Name

6004009/Jacksonville North Pulaski School District

Q2 LEA Contact Name

Samuel Grubb, Computer Science Teacher

Q3 LEA Contact Title

Teacher

Q4 LEA Contact Email

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Q5 LEA Contact Title

Comuter Science Teacher

Q6 LEA Contact Phone Number

501-982-2128

Q7 Grant Level Proposal **Small - Under $7,500**

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.

Jacksonville High School is working diligently to expand the access of computer science curriculum to its scholars. We are currently offering Computer Science with a Security Emphasis level 1 and 2. In the future, we plan on offering Computer Science Level 3 and 4 as well as the Advance Security course. As part of our effort to expand Computer Science education to every student, we are writing this proposal in order to provide needed resources to enhance our Computer Science level 1 and 2 curriculum. We are asking for a set of Boe Bot robot kits, Circuit Board add-on kit, and a set of classroom Cracking Codes with Python textbooks. These kits will allow students to program simple robots, learning the fundamentals of coding and electricity in a fun and innovative way. The books provide lessons on how to create simple encryption programs using the Python programming language. These resources are needed in order to illustrate the learning opportunities available to our scholars. By having scholars work with simple robots, they are exposed to the diverse possibilities of a computer science career in a way that keeps their attention. Furthermore, by coding encryption programs, they are learning a fundamental skill in Cyber Security. This is an excellent way to attract scholars into our Cyber Security Career Pathway, leading them to incredible career opportunities in the community. Our goal is to increase the number of scholars who take Computer Science level 1 and continue to take increasingly advanced courses. By purchasing the proposed resources, we are adding enticing curriculum that will attract students to the course as well as keep them focused on learning throughout the year.

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

December 2018: Receive notice of that JHS is an award recipient March, 2019: Order and receive materials purchased with grant money April - June, 2019: Prepare the coursework Aug, 2019 - May, 2020: Teach course to 60 students

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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.

I expect to see a noticeable increase in the number of students who take Computer Science level 1 and 2 courses as well as an increase in the number of students who remain on the Cyber Security pathway for more advanced courses. This proposal will generate a lot of conversation within the student body about what can be done with computer science and why it is an exciting subject. Those conversations will lead to increased number of students who decide to take Computer Science level 1, especially from those who may not have had any exposure to computer science before. I also expect to see a higher retention rate for more advanced classes. This will not just come from the increase in student enrollment but also from increased interest as students are exposed to the many diverse and interesting careers offered in the computer science field. As a result, we will have an active student body excited about the opportunities they have to learn the essential skills required for success in a computer science college program or career field.

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.

The impact of this proposal will be immense. It will affect every scholar and staff member at our school by providing a boost in confidence in the abilities of our scholars. Many of our scholars have not had an opportunity to work with technology at this level. It will not only show them the possibilities in terms of future careers, but it will also show their own potential as students. Programming a robot to successfully navigate a maze on its own is a difficult task, and the pride that our scholars will feel having accomplished this skill will have immeasurable impact across all of their learning. This also will have a major impact on our community by enhancing the opportunities our students have for high paying careers. The scholars also will have a chance to compete in coding and other computer science competitions, bringing recognition to the community as a whole. Finally, it will impact our relationship with the Little Rock Air Force Base and the military families stationed there by strengthening their enthusiasm for the education their children are receiving at Jacksonville High School.

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.

This proposal is innovative in its approach to teaching coding. Instead of focusing on problems or tasks that are routine or boring, we are focusing on exciting fields of cyber security and robotics. This gives our scholars something much more tangible to relate their skills to which helps keep their attention and increase their desire to continue learning. Students will be able to see the impact of their programs first hand and have a physical display showing the success of their coding. By programming robots instead of abstract programs, we are providing the fundamentals of coding in an interactive, interesting, and attention keeping way. This project also will require advanced problem solving skills that require extensive testing and updating of their programs, giving them real experience in how a computer scientist works through a problem in order to create the best program possible. By programming encryption algorithms, we are giving them in-depth knowledge of an advanced cyber security field in a way that is easy to understand and digest. Both aspects will increase the drive in our students to learn more about computer science as they push themselves to come up with more advanced programs and concepts.

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.

Across the world, the demand for tech workers is growing at a pace that is seemingly impossible with which to keep up. Not only do our future workers need to have the high-tech skills that a computer programmer affords, but also the social skills to be able to work together as a team and meet deadlines. Our program would offer these things to the students enrolled - they will gain the ability to code through the coursework and will learn the importance of being a productive member of the team through projects and competitions. In our city, we are blessed with the Little Rock Air Force Base which is depending heavily on a future of workers that are skilled in the techniques for a cybersecurity workforce. Cybersecurity professionals are already in great demand, and that will continue into the future, as attacks grow more sophisticated and technologies to fight them advance. Our city and state is no exception - the demand for young adults that have knowledge in this area are going to be a great asset to our future workforce both here, locally, and across the state. Not only can this program expose our students to yet another area of computer programming and coding, but this endeavor also can provide a pattern which can be used as the model for other schools across the state.. We have every intention of building our program to be the epitome of what a stellar computer science program should look like in the state of Arkansas.

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.

In order to advertise this program, we will saturate the student population here at JHS (majority African American and almost 100% Free and Reduced Lunch) with information about the classes that are offered in Computer Programming and what those courses can do for them. We will post flyers, have informational meetings, recruit students that are currently taking Algebra II, and make videos about the program to share with scholars during the advisory period. In order to ensure that the marketing plan is brought to fruition and with fidelity, we will have the scholars sign in for all meetings and respond to the presentation with written feedback. We also will ensure the program is being advertised through the amount of students that have signed up for the course during the course requests time period. To ensure that the initiative maintains relevant throughout the years, we must make sure our coursework and our projects move with the times. As the technology changes, so must we. To maintain the integrity of the initiative, we must stay abreast of the changes.

Q15 Budget Proposal

Budget for Grubb Grant_2.pdf (87.7KB)

Item	Each	Qty	Total	Comment
Boe Bot Kit	$ 149.41	25	$ 3,735.25	***To program robots to move and align with the Arkansas Coding Standards***
Cyber Lit 2 Supply Kit	$ 88.47	25	$ 2,211.75	***Additonal Circuits***
Cracking Codes with Python	$ 29.95	30	$ 898.50	***Currently using this this school year. This is beginning course in Python focuses on encryption algorithms. This would be A CLASSROOM SET - NOT FOR IND. STUDENTS***

$ 6,845.50