BITS & BYTES

THE OFFICIAL NEWSLETTER OF BRBYTES

BATON ROUGE: BRINGING YOUTH TECHNOLOGY, EDUCATION, AND SUCCESS

John Underwood selected for CSTA Equity Fellowship

Dr. John Underwood, Instructional Specialist of STEM Programs at East Baton Rouge Parish School System (EBRPSS), is among 15 educators nationwide who have been selected for the 2020-21 Computer Science Teachers Association's (CSTA) Equity Fellowship.

"The CSTA Equity Fellowship is a selective, year-long program designed to develop leadership in equitable teaching practices and advocacy," according to the CSTA website. "The program will both provide leadership development opportunities to the Fellows and identify opportunities for the group to develop ongoing, peer-to-peer professional learning experiences focused on addressing issues of equity in the computer science classrooms for all CSTA members."

Underwood's application for the CSTA Fellowship was sponsored by EBRPSS and grounded in his work on the BRBytes project.

"I really see our grant as being a big part of what the Fellowship wants—to have inclusivity and to also have opportunity for students," Underwood said.

Underwood is looking forward to seeing how his participation as a CSTA Fellow impacts the BRBytes project.

"It gives us a chance to get some feedback on how our efforts compare to others nationwide," Underwood said. "Also, because of the resources and the staff members involved at CSTA, we now are able to connect to some of the leading names in the computer science education field, who have done ground-breaking work."

He added, "[CSTA has] opened up a professional resource that we've never had before, which is really exciting, and hopefully will lead to lots of collaborations and future refinement of our own program, as well as to maybe spread the word of what we're doing and spread our successes to other states."

As he looks forward to his participation in the CSTA Equity Fellowship, Underwood said he is excited to work with such a diverse group of people who will bring a variety of perspectives from their own personal backgrounds, geographic locations, and school districts.

"There's a blend of all kinds of voices and all kinds of resources and experiences," he said.

"I'm really excited about the idea of getting a chance to decolonize the CS curriculum," Underwood added. He looks forward to advocating for better acknowledgement of the equity gap in CS and exploring how online equity can be achieved in our current Covid-19 environment.

CSTA began its Equity Fellowship program last academic year, with the 2019-20 Equity Fellows Cohort. This inaugural group completed a variety of projects, all with a focus on CS education. These projects included the following topics: equity in K-12 CS education, professional development for 6-12 CS educators, integrating CS into every classroom, classroom culture, and anti-racist, culturally responsive, and student affirming curriculum. The Fellows also wrote a series of articles and recorded videos related to CS education.

IN THIS ISSUE

Mistakes Help Us Learn

The "Annual Review of Psychology" published "Learning from Errors," a review article by Janet Metcalfe, professor of psychology at Columbia University. In this article, Metcalfe presents an array of research supporting the theory that making mistakes helps students learn.

"Errors enhance later memory for and generation of the correct responses, facilitate active learning, stimulate the learner to direct attention appropriately, and inform the teacher of where to focus teaching," Metcalfe concludes. "The research reviewed here suggests that teachers and learners alike should be encouraged to be open to mistakes and to actively use them in becoming prepared for the test that counts."

In essence, if a student makes their own mistake and is provided with feedback on how to correct that mistake, they are more likely to remember the correct answer or method than if they were to get the answer correct immediately.

Do not expect students to immediately understand everything in BRBytes curriculum. It is designed to allow students to learn from their mistakes. Students should be thinking critically and engaging in a bit of a mental struggle to discover the answer because this mental struggle helps them to learn and remember.

As you help guide your students through the struggle, here is some advice on how to help them respond to perceived failures: adjust the learning context to make students try a new approach, encourage persistence, model self-compassion, build positive relationships with students, and focus on resilience. These suggestions are from Amy Eva, associate education director at the Greater Good Science Center, from her article "Why We Should Embrace Mistakes in School" in "Greater Good Magazine."

Eva, A. L. (2017, November 28). Why We Should Embrace Mistakes in School. Retrieved November 09, 2020, from https://greatergood.berkeley.edu/article/item/why_we_should_embrace_mistakes_in_school

Metcalfe, J. (2017). Learning from Errors. Annual Review of Psychology, 68, 465-489. doi:https://doi.org/10.1146/annurev-psych-010416-044022

Computer Science Career of the Month

WEB DESIGNER

Web designers use their creativity and technological skills to design websites for corporations, nonprofit organizations, governments, and any other groups that need a website. Their average salary ranges from $44,000 to $61,000 and jobs in this field are growing at a rate just over 8%. Most jobs for web designers require an associate's degree, and you can also pursue bachelor's and master's degrees and web design-related certifications. If you're interested in a career in web design, you should build your skills in user interface design, HTML, JavaScript, Cascading Style Sheets, graphic design, and Adobe Dreamweaver, Photoshop, Illustrator, and InDesign.

Source: computerscience.org

ANNOUNCEMENTS

REMINDER: Please ensure student assent and parent consent forms are completed before the end of the semester. These can be completed online through student access.

Teachers, please remember Saturday Professional Development sessions have been rebranded as Community of Practice Meetings. There will also be a weekend and weekday option for each of these meetings.

View our curriculum on our website! The BRBytes program utilizes the open sourced curriculum from LSU's Computing Pathway. We invite public review and comment.

BR BYTES

website: brbytes.org
email: info@brbytes.org

partners & funding agencies:

LSU • EBR EAST BATON ROUGE PARISH SCHOOL SYSTEM • NSF • DEPARTMENT OF EDUCATION

BRBytes Included in Jump Start 2.0 Pathways Update

An extended revision of Jump Start 2.0 Universal Courses and Graduation Pathways was approved at the August 11-12, 2020 meeting of the Louisiana State Board of Elementary and Secondary Education.

This revision added several BRBytes courses to the Jump Start 2.0 Pathways. The Introduction to STEM Pathways and Careers course now fulfills the basic career readiness requirement, and the Cybersecurity course is included in the Safety Courses category. These two courses are universal and can be applied towards the nine-credit requirement for any Jump Start 2.0 Pathway.

Along with this revision, several BRBytes courses were approved as Pathway-specific courses. The following table shows for which Pathway(s) each course was approved.

The Jump Start 2.0 initiative is designed to prepare students for adulthood. Students earn industry credentials during high school that will allow them to work in high-wage, high-demand jobs after graduation and continue their education through employer training, technical college, or a four-year university.

Detailed descriptions and course listings for all Jump Start 2.0 Pathways can be found here: https://www.louisianabelieves.com/resources/library/jump-start-graduation-pathways.

Jump Start 2.0 Pathways	Intro to Computational Thinking	Data Manipulation & Analysis	Interactive Computing	Survey of Computer Science	Programming for Engineering/STEM
Agriculture, Food & Natural Resources	✓				
Architecture & Construction	✓				
Arts, AV Technology & Communication	✓		✓		
Business Management	✓	✓			
Health Sciences		✓			
Hospitality & Tourism	✓				
Human Services	✓				
Information Technology	✓	✓	✓	✓	✓
Law, Public Safety, Corrections & Security	✓			✓	
Manufacturing	✓	✓			
Transportation, Distribution & Logistics	✓	✓			

CLASSROOM SPOTLIGHT

CYNTHIA GONZALES | WESTDALE MIDDLE
SURVEY OF COMPUTER SCIENCE

Teaching the BRBytes Survey of Computer Science course has been well-worth the amount of work it takes for Cynthia Gonzales of Westdale Middle School.

"I think my kids are really getting something out of it," she said, "and I'm enjoying it so far."

Gonzales takes a collaborative learning approach to the course, as she does with the non-BRBytes courses she teaches. This creates an environment where she and the students are learning together.

"I think it makes the class better when [the students] understand we're just learning from each other," she said.

She said that she has learned new things from some students who have come into the class with background knowledge in computer science. Meanwhile, other students are having their first experiences with computer science in her class.

This is the first time Gonzales has taught a computer science course, and her advice is to stay ahead of the students when teaching a new curriculum. To do this, she often completes the same assignments the students are doing and is able to use her work alongside student work as examples in class.

Along with the challenge of a new curriculum, Gonzales is adapting her classroom based on Covid-19 restrictions. One focus she has is on increasing students' communication with each other, despite several students only attending class virtually.

"Getting [the students] to present [their projects] and talk in front of everybody, it gets us to be more of a family-type class, so we get used to talking to each other," she said.

Recently, Gonzales's class completed the TechBytes project.

"I was really proud of what they did on that project," she said.

The students came up with several creative ideas, including an architectural layout of the rooms in the restaurant, a website, a billboard advertisement, and a logo to put on a t-shirt and sweatshirt.
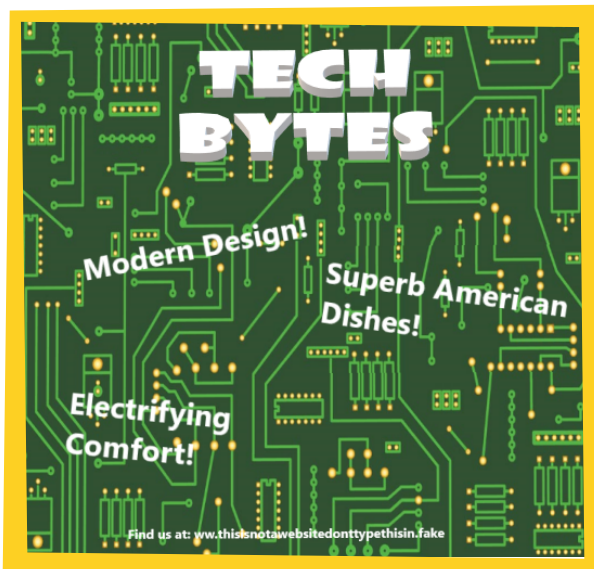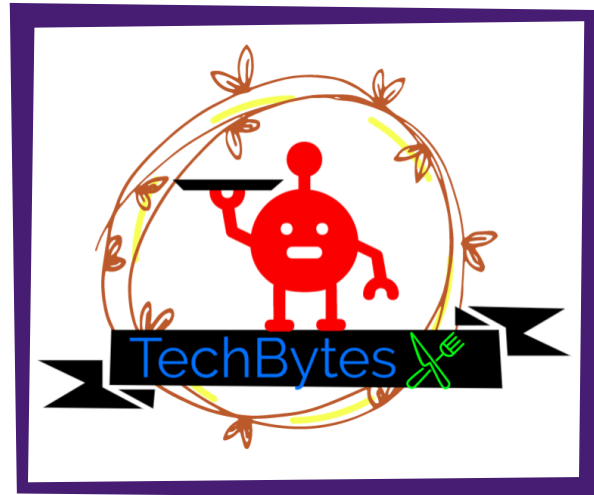
CLASSROOM SPOTLIGHT

STEVEN FRAZIER | WOODLAWN HIGH
INTRODUCTION TO COMPUTATIONAL THINKING

Teaching Introduction to Computational Thinking has changed the way Steven Frazier of Woodlawn High School thinks about coding and programming.

"[ICT] really makes you go through the processes of what computational thinking looks like," he said. "It wants us to think like a computer and to understand the processes of computational thinking and what that really means through the work."

"I think it's definitely improved my understanding of programming and the science behind computers," Frazier said. "It's given me more insight into the subject of computer science."

Frazier also teaches AP Computer Science Principles, and he has found the BRBytes ICT course to be more of a hands-on experience.

"[Students] have that advantage of actually coding," he said. "They really experience the science of computing through this course and participate in it. They're active learners as opposed to passive learners."

He described it as a unique way of learning computer science that motivates students to be more invested in their learning. One way the curriculum motivates students is that it allows them to begin coding right away.

"[Students] can be creative and they can actually write a program very quickly," he said. "They can see the results of their code very quickly."

Frazier has noticed that even some of his students who didn't think they would be interested in the class have been surprised to find they really enjoy it.

Since the beginning of the year, Frazier has found two main methods that help him convey ICT concepts to his students.

"The most effective thing I have done is having students work together where they share their code with everyone and the students have the opportunity to debug each others' code," Frazier said, "because that allows every student the opportunity to debug, which is really key for success in this class."

Pairing this with frequent teacher feedback provides excellent support for student learning.