# COMPUTER SCIENCE in ARKANSAS

TEACH CODING OFFLINE WITH CHROMEBOOKS!

Struggling to find equitable ways for kids with connectivity issues to continue coding? Unsure of which options exist should your students have to quarantine? This **Coding with Chrome extension** can be downloaded to add a coding application that can be accessed without need of the Internet.

The amazing part of this offline application is that it works at your kids' level! Used to working with Blockly? No problem! Select the Block Code option under the "Beginner" button! Need an offline tool for robotics? This tool works with Lego, Sphero, MakeBlock & MBot! It also has a gaming option.

If your students are further along, you may want to choose the "Advanced" button and allow them to work on their text-based coding skills! It supports Javascript, Python, Pencil Code, and CoffeeScript coding languages. It also has a Markup option that supports HTML, CSS, and Javascript.

It is a very basic educational coding development environment, but it definitely meets the needs of allowing teachers and students to code offline. For more digital computing resources, click **here**.
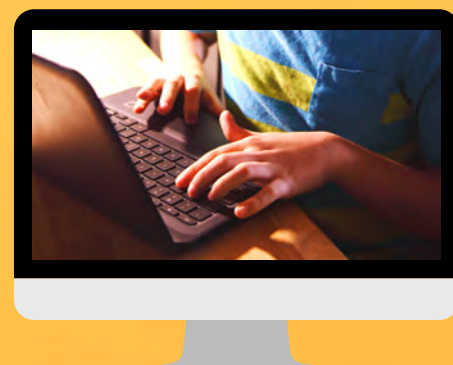
FALL CS PD REGISTRATION IS LIVE!

The CSforAR team is happy to announce that many of our Summer PD sessions are back for a virtual, encore performance. Starting mid-September and running through mid-October, we will be offering the following sessions on Saturdays only:

K4 Intro - Sept 19, Oct 2   K4 Deeper Dive - Oct 3, 10
5-8 Intro - Oct 3, 10   Coding Block Intro - Sept 19, Oct 3
Coding Block Resources - Oct 10, 17   HS Praxis Prep - Sept 19, 26, Oct 3, 10, 17

To register, visit our Professional Development listings at **http://bit.ly/ARCSPD** and register through your local co-op's link. Each day will begin at 8:30 and conclude at 3:30. Make sure you update your ESCworks email address as we will be emailing Zoom links to participants for the sessions the week prior to their start. Though there will be no makeup sessions, anyone who completes all 5 days of the HS Praxis Prep will qualify for the 5016 approval code.

GOVERNOR'S COMPUTER SCIENCE & CYBERSECURITY TASKFORCE: EDUCATION SUBCOMMITTEE OVERVIEW

Dr. Bryan Hill
Associate Dean of Student Success, College of Engineering, University of Arkansas

As the Associate Dean of Student Success, our team's efforts start with outreach and summer programs across the state for K-12 students. It's critical to introduce all students, especially girls and other traditionally marginalized groups, to the fun, exciting world of STEM. Currently reaching over 14,000 students per year, the College of Engineering welcomes any additional opportunities you may have to visit with students to talk about STEM. It is critical to support our current K-12 teachers with project-based lessons and preparing the next generation of teachers.

It was an honor and privilege to serve on the Governor's Computer Science and Cybersecurity Taskforce. As UA's Computer Science enrollment exploded over the past few years, it was an added bonus to share our successes and current needs with the larger Taskforce. There is a large demand for qualified CS workers in the state. The creation of new degree programs, like UA's new Data Science program, will continue to address the workforce needs. As Chair of the Education Subcommittee, it was my pleasure to work with such an accomplished group of educators whose passion for growing CS in the state was unwavering. The group honestly wants every student in the state to experience the joys of CS and STEM.

I greatly appreciate all of the subcommittee members who donated their time and effort to our group: Karma Turner, Gary Stark, Michael Armstrong, Britt Cagnina, Phillip Young, Dave Wengel, and Dr. Sarah Moore. Our subcommittee's efforts included a data dive to see enrollment growth at the K-12 and post-secondary levels. We also conducted a comprehensive survey of CS educators in the state that confirmed many of the subcommittee's assertions and provided additional information for future growth. The upcoming report and the recommendations included will be critical as we continue to expand Arkansas' Computer Science and Cybersecurity efforts.

CS SPECIALIST SPOTLIGHT

This month, we focus on Morgan Warbington, program advisor to the CS Department of the ADE.

"My first memory of technology was growing up playing on the Gameboy in the back seat as my family drove to my Mammaw and Papaw's. As time progressed, so did the systems: the Nintendo 64, the GameCube, and then of course the Wii. I really never was much of a gamer, but I have always enjoyed playing the games with friends.

"However, video games certainly took a backseat when I attended college. I attended the University of Arkansas at Fayetteville and double majored in vocal performance and political science. As strange as that combination might seem, singing one minute and then debating the next actually made for an enjoyable four years. Still, I never expected to find my way back to a technology job.

"The summer upon graduating, I was afforded the honor of interning for Governor Hutchinson and eventually would be selected as a legislative and agency liaison on the education team. In that role, I was able to help lead the Governor's Computer Science Initiative and began to see just how significant computer science is. I saw that with computer science knowledge, the chance to succeed was limitless.

"Part of my job was to travel with the Governor on his Computer Science Coding Tours, where I got to see and hear the impact of the CS initiative on high school students across the state. To see the doors that this initiative opens for our state's students still amazes me. Now, as the program advisor for the ADE Office of Computer Science, I relish the opportunity to continue serving the CSforAR initiative and I have never been more proud to work on something so impactful."

LOOTBOXES 101: A COSTLY LESSON TO AVOID

CS Specialist John Hart will be bringing news and information highly relevant to non-gaming parents and educators.

Before you skip this article, ask yourself "Would I be okay with my kids spending greater than $1000 of my hard-earned money on **glitter**?" Now, rewind in your brain and think about the apps you have installed on the tablet, smartphone or PC you hand them. Is there a gaming console they have access to? Have you ever purchased anything on any of these devices, or, worse, did you give them the credit card to do it themselves?

Blizzard Overwatch Lootbox

Forgive the scare tactics, but a lootbox is an oft overlooked concern that many parents/teachers are not aware of, and yet one that kids need to be taught (and some, monitored).

Epic Fortnite Loot Llama

Simply put: a lootbox is a RANDOM chance to get something cool and desirable that often costs REAL money. It could be cosmetic (ornamental and doesn't affect the gameplay) or it could be something that actually makes the game easier. I want to highlight that it has to be random. Maybe you will get the item you want, but most other times you get something else. Something less cool. Something you didn't really want. Something you would have never outright paid for.

I should be clear: lots of games offer in-game real-money purchases, and many games offer lootboxes that can be earned in the game without using cash. I'm not a huge fan of excess in-game purchases, but at least you know what you are buying. If I can grind out lootboxes without forking my paycheck for it, then I am wasting my time at worst, and there isn't an unfair advantage between paying and for-free players. Regardless of my other opinions on these structures, I'm not addressing these here.

We don't let minors run amok among the slot machines of casinos, and we shouldn't let them spend money they don't value on digital items. And yes, the gambling allusion is intended. Belgium has already banned them as a form of gambling, to which some companies, such as Nintendo and SquareEnix, have removed their entire games rather than the lootboxes. While the decision of whether or not this practice is gambling is still being debated, it is at least akin enough for parents to monitor and be aware of this practice.

Nintendo Animal Crossing Pocket Camp
Fortune Cookies

Many companies have moved away from the random lootboxes; instead, players can see the exact items included inside. Fortnite, still a gaming powerhouse, moved to such a model in early 2019.

I'd suggest doing your own research and diligence. In the end, you may not think of it as gambling, but I doubt you'd want to be sitting on a large debt for sparkly hairdos and skins (a term that refers to an item that changes how a character or item looks) in a game you didn't even know existed. At bare minimum, learn how to turn off in-game purchases, but do yourself and your kid a favor by talking to them about how not everything free is without cost.

HACK ACROSS ARKANSAS
0X04 - HACKER SUMMER CAMP

Eli McRae
Computer Science Specialist for the State of Arkansas

Have you ever been to a hacker conference? What about a hacker conference during a global pandemic? If not, you should definitely consider attending. A hidden benefit of the pandemic shutting down most public interactions is the shift to digitizing the conference, which has made them more accessible. Dads rejoice! The joke has been made that these conferences are "booted up in Safe Mode." In going virtual, you don't have to manage any of the logistics of traveling and staying in Las Vegas or New York City. You can participate from the sweet comfort--and relative safety--of your own home network.

Participants competing at DEF CON CTF 2019

But why participate at all? Because events like these are where ideas are explored and iterated in rapid fashion. You will ALWAYS meet someone you can share some new bit of information with you. You won't find a group that is as simultaneously humble and quite aware of their skill. Often these conferences offer "villages" for special-interest groups, such as Lockpicking, Biomedical Hacking, or Car and Satellite Hacking.

One major conference, DEF CON, has upwards of 25,000 attendees each year. That's a huge increase from the handful of hackers who first gathered in Las Vegas in the summer of 1993. During that time, the conference has spread across 4 major hotels on the Las Vegas strip and even hosted a conference in Hong Kong. There is even a DEF CON Kids hosted by r00tz Asylum (https://r00tz.org). This time around, everyone got to participate in all of the workshops and villages without having to sprint several long Vegas blocks to do so. This is generally considered one of the largest conferences and has attendees from all walks of life, including the criminal underground and law enforcement and intelligence agencies at the highest levels and everyone in between.

Another conference, HOPE (which stands for Hackers On Planet Earth) takes place biennially. It's organized by 2600 Magazine and has taken place since 1994. This is a smaller conference of 3000-5000 attendees, but has a history of making significant contributions to hacker culture and influencing how the world perceives hackers. This year, it spanned a full 9 days as opposed to the normal 3 or 4 days.

HACK ACROSS ARKANSAS CONTINUED

Oddly enough given the name, the annual Black Hat conference is the most corporate of these events. Although there are many Black Hat events in various places around the world, Black Hat Las Vegas occurs the same week as DEF CON (the Monday prior) and a lot of presenters at this conference will also present the same or similar material at DEF CON. It's fairly expensive, but often corporations send people to this conference for professional development. Because of the fact that it's got a higher barrier of entry (the price of admission can be thousands of dollars), parties with a professional interest will get a few days head start on developing workable exploits or mitigation for any vulnerabilities or techniques disclosed at the conference.

Lastly, BSides are locally organized conferences that happen throughout the year all over the world. The name originates from talks that were rejected from DEF CON and Black Hat for one reason or another. Do not be dissuaded; they are often regarded as a proving-grounds of sorts for future presenters of DEF CON's main tracks. Most of the time, the conference and talks are free to attend in person, and they are supported by sponsors and workshop fees.

Although the conferences mentioned above have mostly already occurred, you haven't missed out entirely. The talks from most of them are already available via YouTube and other streaming services. Just search for them or follow the links in the following references.

Further Reading:
 https://hope.net/about.html
 https://defcon.org/html/defcon-safemode/dc-safemode-faq.html
 https://www.blackhat.com/us-20/
 http://www.securitybsides.com/

Other Resources:
 DEFCON - The Full Documentary (1hr 50min)
 CNET - How to prepare for the world's largest hacker fest
 DEF CON Safe Mode Main Stage (50+ 1 hour presentations)
 https://archive.org/details/hopeconf2020

EXPLORE SUCCESS RETURNS TO SOUTHWEST ARKANSAS

As educators, we are constantly looking for ways to give students a glimpse of their future. The Southwest region is hosting a fall event this year to do just that. The Explore Success Youth Manufacturing Conference will let eighth-grade students learn from the positive experiences of a native Arkansan, be engaged by professional panels, and make industry connections. This state and national award-winning conference will be held in a virtual format on October 6, 2020.

This event will be held virtually via Zoom. Returning as Keynote speaker this year is Paul Vitale. Vitale, a graduate from the University of Central Arkansas, has made a name for himself as a motivational speaker and author. He founded Vital Communications, Inc., and has been previously selected by Arkansas Business as one of its "40 Under 40."

Added to the conference lineup this year is the company Nepris. Nepris, according to its website, aims to connect educators and learners with a network of industry professionals, to virtually bring real-world relevance and career exposure to all students. Nepris reports that it provides a skills-based volunteering platform for organizations to extend education outreach, and build their brand among the future workforce. Nepris is offered free of charge to any school district Arkansas. If your teacher does not have access to Nepris, please contact your CTE Coordinator.

This event was a collaborative effort between Southwest, Southcentral, and DeQueen-Mena Educational Cooperatives, area industries, and the Southwest Arkansas Development Alliance. For more information, please contact shannon.puckett@swaec.org.

Disclosure: In no way are you guaranteed to have a completed app by the end of the day and this event will not guarantee a winning app.
Deadline to enter CAC is October 19, 2020, and teams must be registered prior to that date.

2020 APP IN A DAY

The Congressional App Challenge deadline is quickly approaching and the CSforAR Specialist Team has put together a Virtual App In A Day Digital Package.

Digital Package: Each teacher that wishes to participate will be provided a digital package that includes a pre-work presentation, digital materials and an App in A Day presentation. This will allow APP in a Day to be held in the classroom at the teacher's convenience. Request Digital Package HERE.

App in A Day in the CS Cafe: (OPTIONAL) Due to Covid-19, we will not be hosting a live event this year. Instead, this will be a drop-in online opportunity in the CS Cafe on Friday, September 18, 2020, from 9:00 am - 2:00 pm (bit.ly/ARCSCoffee) to receive help, ideas, or support. We would love for you and your students to drop in. *Reminder CS Cafe is open M-F from 8-4, if needed.

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We now have a Facebook Group! Visit: **bit.ly/CSforARFB**

Our goal is to make sure you are getting all the latest information. We would love to post pics and projects with you and your students be sure to share with us!

COMPUTER SCIENCE MASTER'S PROGRAM AT ARKANSAS TECH UNIVERSTIY

By Becky Cunningham
Assistant Professor of Computer and Information Science, Arkansas Tech University

Arkansas Tech University, centrally located in Russellville, AR, offers Bachelor's degrees in Computer Science (CS), Information Systems (IS), Information Technology (IT), and Cybersecurity. One of the advantages of getting a computing degree from ATU is that many of these degrees share a core set of courses that include programming, networking, hardware, databases, ethics, and systems analysis/design. Because the department supports a full range of computing degrees that share this core set of courses, students can almost effortlessly–and without losing credit–change their career focus after gaining awareness of opportunities in their lower-level courses. The CS, IS, and IT degrees share up to 16 core courses; Cybersecurity, because of its unique nature, only shares a few of these.

A simple explanation of these degrees is that Computer Science majors learn how to build systems, Information Systems majors learn how to efficiently use systems, Information Technology majors learn how to maintain and administer systems, and Cybersecurity majors learn how to protect systems. However, they all must work together and communicate effectively.

Obviously, these degrees also have courses unique to them to differentiate them from each other. Computer Science majors take several math courses and can receive a minor in mathematics. A few topics in this program include programming, computer hardware, computer organization, algorithm design, study of programming languages, and personal software engineering.

Information Systems majors take several business courses and can receive a minor in General Business. A few topics covered in this program include programming, statistics, data mining, visual programming, and how to manage technology resources.

Information Technology majors take more computing courses than the other majors, including a few courses with hands-on labs. This degree has a built-in Associate's degree so students can receive two degrees in this program. A few topics covered in this program include programming, web development, networking, databases, and courses in administration of various systems.

As mentioned previously, Cybersecurity majors take many unique courses related to security. This degree also has a built-in Associate's degree so students can receive two degrees in this program. A few topics covered in this program include cyber defense, cryptography, wireless security, virtualization, and forensics.

CS and IS majors may also opt to add an Associate's degree in IT or Cyber by picking up a few extra courses.

For more information regarding computing degrees at ATU, please visit https://www.atu.edu/cis/ or contact Dr. Jerry Wood, Interim Department Head at jwood@atu.edu or 479-356-2066.

UPCOMING TRAINING
bit.ly/CSforARPD

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SOCIAL MEDIA

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