



CAMPERS EXPLORE MIX OF CREATIVITY, PROBLEM-SOLVING IN COMPUTER CODING

<CRACKING THE CODE>

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Computer programming and creativity conjure up powerful and often conflicting stereotypes. Those who write code, the instructions all computers follow, are frequently considered to operate in a left-brain fashion, focused solely on the analytical, logical, and mathematical.

But programming is an open-ended activity and each code writer makes unique choices in an attempt to create something that's dynamic, compelling, and innovative. To conceive an original idea and bring it into being requires a hefty dose of imagination and artistry, even in the digital realm.

In the 21st century, computers run the world. They power our phones, our cars, our appliances, not to mention our economy, health care system, military, and manufacturing industries. We are undeniably and inextricably linked to these machines and the developers, computer scientists, software engineers, and coders who command them. Learning to code is comparable to learning a new language, complete with syntax. Codercraft Works, a local nonprofit, is intent on teaching it.

The organization was founded by Shannon Landis in a dorm room in 2011 and it quickly grew, expanding to Tallahassee through a connection with TallaStation, a local startup incubator. Megan Bonnell, the Leon County Director of Codercraft Works explains that through their educational programming, "kids become empowered. They start to understand that technology isn't just this weird, magic, obscure thing."



PHOTOS BY AMANDA THOMPSON
Campers write code to create music boxes that can be played like a simple instrument.

It's something that they can see behind the scenes of and make their own. There is a need for kids to start creating the technology they consume."

Codercraft Works offers several summer coding camps in partnership with Florida State University's College of Communication and Information and Florida A&M University's Center for Public Computing and Workforce Development. Campers use the Codercraft Works platform to learn coding, ethical hacking and how to design their own web pages and games and explore methods for enhancing them with digital graphics, animation, and sound.

Describing the content that the campers encounter, Bonnell said, "we start with the HTML, which is the bones. Hypertext Markup Language (HTML) acts as the underlying skeleton of any computer program." Then we started adding in the CSS. Cascading Style Sheets (CSS) determines the way information is presented. "I call that the clothes. It's the designer when you get to add the colors and the fonts. It's how you make it look pretty. And then the hardest part is the JavaScript and that's the interactivity so that's what makes things highlight when you click on it or a button that does something."

Once campers gain proficiency with the basic building blocks, they can begin to explore the possibilities.

Though 10-year-old Madeline Forlund has some previous experience

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with app design and coding, after a week at camp she was surprised by how much more she'd learned. "I didn't know that there were all these different things that you can do in coding," she said. When reflecting on how she brings her own creativity into her designs, Madeline said, "you have to use your imagination or it'll be kind of boring. You have to pick different colors and fonts."

Kailey Hoffman, 11, agreed and explained that the design elements a coder selects can affect the user's experience. "If there's a bunch of lines or if it's really bright neon colors, you're like, 'Oh, I don't want to look at this for a long time.'"

Camp counselor Darius Holliday had similar sentiments. "You have to think about what the front end looks like, so you think about lines and balance and colors and the style and how you express your personality within the bounds of the code. That's the challenge. It's really about problem-solving." Neither Holliday nor Danielle Taylor, another camp counselor, has a background in coding and they've been learning alongside the campers. Taylor was surprised by how quickly she took to it.

"It's much easier than I thought it would be. Now I can do Scratch," she said. Designed at the Massachusetts Institute of Technology, Scratch is an online computer programming language. "It's free, anyone can do it and they teach you within the site how to do everything. It's block based coding, like drag and drop stuff and you can make a game or a video or a story."

Block-based coding is often the first way campers are introduced to computer programming. It teaches fundamental concepts that they will use later in more advanced camps and classes.

Another digital experience popular with campers is a game called Minecraft. "I find Minecraft fascinating because they're building their own worlds," said Bonnell. "They can build their own houses and hotels and roller coasters and boats to go to different lands. It gives them this creative free play that they don't often get because sometimes they don't have that sort of agency because they're kids. Here, whatever they dream, they can create."

Owen Forrester, 11, is a big fan of the game and he gets a thrill by engineering on a scale that wouldn't be possible in real life. "I like creating big things in Minecraft. It makes me feel like I can do anything I put my mind to." Niko Palaios, 10, also enjoys playing and he's especially proud of the solutions he comes up with. "In Minecraft, I think of stuff that other people probably don't."

It is exactly these kinds of creative problem-solving skills that Bonnell hopes campers gain. "They're learning how things work. They're learning that this isn't an intimidating space, you can learn how to make it yourself. They get confidence from this, they get collaboration skills, presentation skills. Coding isn't just somebody in a box with their head down, banging away at a keyboard. At Codecraft Works, we want them to learn that there's creativity in it and there are so many ways that we can affect technology in our world, there's no end."

Amanda Karoth Thompson is the Assistant Director for the Council on Culture & Arts. COCA is the capital area's umbrella agency for arts and culture (www.tallahasseedarts.org).



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Madeline Forslund and Kailey Hoffman pay close attention to the design details of their coding projects.