# New Jersey School Introduces Computational Thinking and Coding into Instruction

East Orange STEM Academy pilots new Learning.com solution and engages students with real-world projects.

**Seeing the Need for Coding**

While participating in a district-wide technology fair, it became clear to Technology Teacher Kofi Owens that his students at East Orange STEM Academy in New Jersey needed to understand coding foundations and concepts.

"The students were working on building robots" says Owens. "Coding became a must because they had to learn how to actually code the robots."

In the fall of 2016, the Supervisor of Instructional Technology of East Orange approached Owens about participating in a pilot program for a new coding solution from Learning.com, and he jumped at the chance to use it with his sixth-grade students.

**Teaching the Unknown**

East Orange School District's enrollment is comprised of minority students and over 80% of students qualify for free and reduced lunch. The district has been a long-time Learning.com customer and the Board of Education has adopted Learning.com's **EasyTech** solution as their digital literacy curriculum. Learning.com's digital literacy curriculum is implemented in each school by the technology teacher and taught in a computer lab or classroom setting.

In 2016, Learning.com expanded the EasyTech digital literacy curriculum with lessons on Computational Thinking as well as coding through the EasyCode Foundations plug-in.

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Before diving into the curriculum, Owens had his students interview and record their fellow classmates on video to document how much each of them knew about coding at the beginning of the pilot.

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## Building a Foundation for Coding Skills

Though many of Owens' sixth-grade students have been familiar with Learning.com since kindergarten, learning about coding was a new experience for them. EasyCode includes "unplugged" application exercises to help students understand the cognitive skills and problem solving processes needed to be successful in coding. Owens' favorite was one that helped students learn about algorithms by exploring the world through a disability.

"The activities made it interesting and fun and it had nothing to do with technology", says Owens. "The students had no idea what they were doing was actually connected to coding but they were having fun being introduced to it."

Following the unplugged application exercises, students were introduced to the basics of a real coding language through EasyCode's game-based environment. Students learned to code by solving coding challenges and working towards building their own apps and games.

## Coding Everyday

Students completed 40 EasyCode challenges during the pilot which spanned one cycle. Owens also used lesson plans in EasyCode to engage students in computational thinking and coding concepts through activities away from the computer.

"It was the real-world aspect that really made the difference," said Owens. "Every time the kids completed an activity in EasyCode, they had to do an outside activity related to what they just learned and it brought everything home for them."

During the pilot, Owens used several free coding resources with his students, but feels strongly that EasyCode has many advantages over these including exercises to deepen understanding and help students apply their skills, as well as progress monitoring and grade reporting.

"When we were using other websites to do coding activities, the students didn't grasp the vocabulary and the important concepts like steps, flow charts and algorithms," Owens said, "they were just logging on to play a game."

## "Can you feel the rhythm? The algorithm"

At the end of the pilot, students were asked again what they knew about coding. Not only were students able to describe an algorithm, they also saw the value coding brings to things they do every day.

"I learned that coding helps you with a lot of real life experiences and can help you with a lot of stuff that has to do with the computer," said one of Owens' students. "Coding helps with typing, helps with computer programming and internet games which I think is really cool."

Many of the students in Owens class were so excited about what they had learned using EasyCode they wrote a song as a class and created a music video about their experience.

"They were collaborating, using different programs, and bringing the ideas home in a fun way," says Owens. "It was sort of like a pep rally for coding."

**View Music Video Here**

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