

Kids Need Enrichment Newsletter

Kids Need Enrichment

Putting the amazing, fun, and powerful world of STEM in the hands of kids

"Computing is not about computers any more. It is about living"

- Nicholas Negroponte

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Weird But True

Only 8% of the world's currency is physical money. The rest only exists on computers.

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Coding for kids

Most people have heard about the important and almost urgent need to get children more engaged in STEM and more specifically computer programming, but why is it so critical? Computers and technology are everywhere and part of our everyday lives. In fact, 67% of software jobs are outside the technology industry in traditionally non-technology fields like entertainment, retail, government, and even agriculture.

The concern is that there might be 1,000,000 unfilled computer programming jobs by 2020 which represents a \$500 billion employment opportunity. This potential gap comes from the increased demand for computer programming combined with fewer computer science graduates now than 10 years ago. To make matters worse, 90% of US schools don't teach computer programming at the K-12 level. Even when classes exist, how many students get access? Our local high school is in that 10%, but only has one class - AP Computer Science - which only accommodates a small percentage of students.

Where are kids supposed to start? Our local schools peaked kids' interest with the Hour of Code (hourofcode.com) challenge last year, which gave them a taste of what they could do with coding. However, there wasn't any next step. Where do they go from there?

As parents, we need to take the initiative to get our kids interested in computer programming. This summer we encouraged our daughters to work on coding at code.org

and [tynker.com](https://www.tynker.com). They spent hours and hours learning some of the basic principles of programming via fun games and challenges on their own and together as a team. Along the way, they've become more determined and developed their problem solving skills.

Another option is a more structured class, workshop, or camp. Our public library offered a free workshop over the summer. There are also several organizations with coding classes for kids. Figure out what environment works best for your kids and let them give it a try.

As Nicholas Negroponte eloquently points out in the quote above, computing is no longer just about computers. It is a pervasive force behind an increasingly large part of our lives. Our kids can either help drive this change, or be driven by it. We need to provide them the tools and opportunities to be on the driver's side.

What should we cover next?

Are there any STEM topics you'd like to know more about? Let us know at stem@kidsneedenrichment.com!

Quick STEM: Coding Favorites

[What Most Schools Don't Teach](#)

[Millions of Lines of Code](#)

[TED Talks: A 12-year-old App Developer](#)

[Kids React to Old Computers](#)

Want to control the world? Learn to code!

by Erika (age 12, [@KNEstemGirls](#))

Eventually, the world will be based on computers and technology. We might have robot nannies and more efficient, less annoying Siris. Apple will grow and have more apps and programs. TVs will be voice-controlled and know your favorite channels. And all of it will all be based on computer code.

Coding is an educational, fun way to learn the basic way a computer works and the power of controlling it. JavaScript, Java, and HTML are just a few types of computer code, but they are complicated and can be confusing. Programs like [Tynker](#), [Code.org](#), and [Scratch](#) simplify commands into connecting blocks that a child can use with ease in educational games and in projects they make. I highly recommend these programs for allowing kids to be kids (as in having fun, not Chucky Cheese) while learning new things. I was introduced to these programs by a teacher and I can code drones and spheres to move and fly.

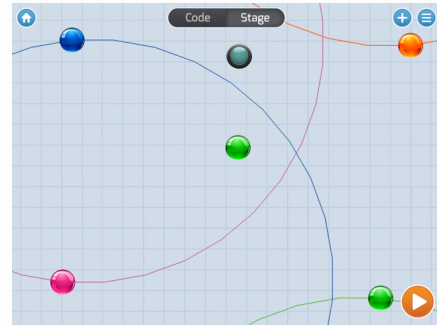
Our world will be technology and computer based. Even now, things in our everyday lives are based on code! A toaster has 32,000 lines of code and a luxury car has 100,000,000 which is more than 10x more lines of code than what it takes to run Facebook. Life will be much easier if we can understand and control computers. Coding is fun and useful because you can fix your computer or make your own games and apps. I love to code and it might become one of the most important jobs.

How I learned to code

by Alexa (age 9, [@KNEstemGirls](#))

A few months ago, I didn't know how to code, but I just finished creating my 8th mini-game (I'm working on my 9th).

I learned to code from [code.org](#), [Scratch](#), and particularly [Tynker](#). On Tynker, there are different coding games. My favorite is Debugger. In Debugger, you go on an adventure and debug the system to complete puzzles.



Color Coaster Game (by me!)

On Tynker, I learned lots of ways to code. Some things I learned include: how to code in the fewest steps possible, how to put code in loops, and how hard and important it is to code.

There is an app for Tynker too. If you get the app, then you can take it with you and code whenever you want! On the app, I created my own username and password. Then, I edited some other samples and game kits that people made and created my own projects from scratch.

If you are a beginner, I would suggest going to a website, [code.org](#), or start with Candy Quest. In Candy Quest you go on an adventure and code to get candy. These are easy, but once you've got the basics, it gets harder and more challenging.

I love challenging activities which makes coding fun and interesting. Since I like coding, I've made my own projects and have been playing my favorite game on the app, Lazer Racer. In Lazer Racer you're a drawing car and it reminds me of how I love to draw. Also, Lazer Racer is easier to understand since I coded lots of drawing projects.

Learning to code takes time and patience but if you like creating projects and solving puzzles, then I would recommend giving it a try. Also, if you like video games, this helps you understand how they work and you can create your own!

How can we improve?

Let us know at stem@kidsneedenrichment.com.

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