## Computer Science

Are you overwhelmed by the thought of teaching your students computer science? In the world they are living in, students must be prepared for jobs that don't even exist yet! While some students might not ever become computer programmers or coders, the problem-solving skills that come along with learning about computer science and programming are applicable in any field. This month's eTip is going to focus on ways to get your students excited about computer science, and some simple ideas you can use to get started in your class!

Take Apart and Rebuild a Computer

Taking apart or building a computer sounds overwhelming, but after watching a few YouTube videos, anyone can do it. What's even better is most schools have end-of-life computers and Chromebooks laying around, so this can be a budget friendly activity to really get your students interested in learning about computer science.

You can even take it a step further and have students create their own tutorials on taking apart or putting together computers/Chromebooks.
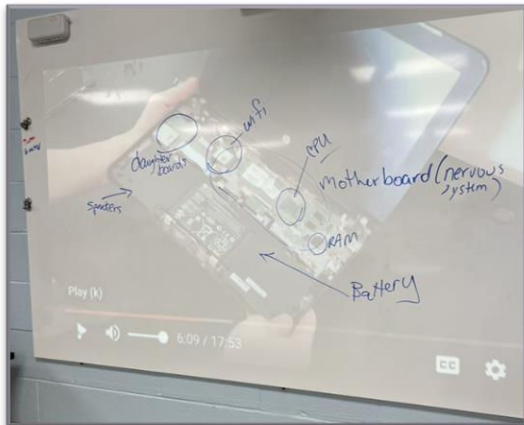
There are a lot of great YouTube videos or this Micron Lesson Plan to help you get started.

Hour of Code Anytime

Did you miss this year's Hour of Code in December? Don't worry, hour of code can be done at any time of year! It is great for testing season because students are burnt out from testing, so this is something fun and challenging to give them a well-deserved break while still increasing their problem solving and critical thinking skills.

Google's CS First, Hour of Code, and Code.org are among many websites that have pre-made "hour of code" activities. Feel free to let students pick one that fits their interests to get them even more engaged! This is also a great way for teachers to get their feet wet in the world of coding.

Special Guests

Many students don't know how they can turn their love of computer science, coding, gaming, or design into a career. Inviting special guests to join class in-person or virtually is a great way for students to see the potential careers they can have if computer science is something they are enjoying and may want to pursue. Ask colleagues if they have family members or friends that are in the field, reach out to local colleges or businesses, and even military recruiters may be a good resource. This could even turn into a field trip opportunity if the participating party is willing!

Visuals

Now that you have your students excited, how can you get them to understand the concepts behind computer science and coding? Providing visuals to scaffold understanding is a great, research-based, way for your students to grasp larger concepts. Allowing students to physically building something whether it be a PC or a string of block coding will help them better understand the process of why certain things work.
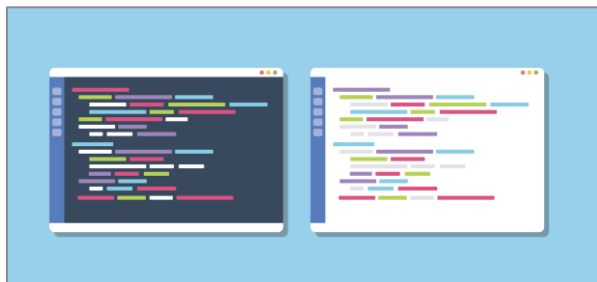

PixBrix

If your school has access to 3D printing, starting students with something like PixBrix will allow them to physically build something in 3D to help them understand the layering involved when building something in 3D printing software. This is a great way for younger students to have a pre-cursor to software like Tinkercad.

Panoform

If your school doesn't have access to things like 3D printers or robots, there is still a lot your students can do! One of our favorite FREE tools is called Panoform. This can be as low-tech as you want it to be. Students use graph paper that has been downloaded from Panoform

to design something which can be viewed as a 360 image on a phone, tablet, Chromebook, or VR goggles using the Panoform Tool. If you want to increase the amount of tech students are using, these templates can be added to Google Slides for students to design with.
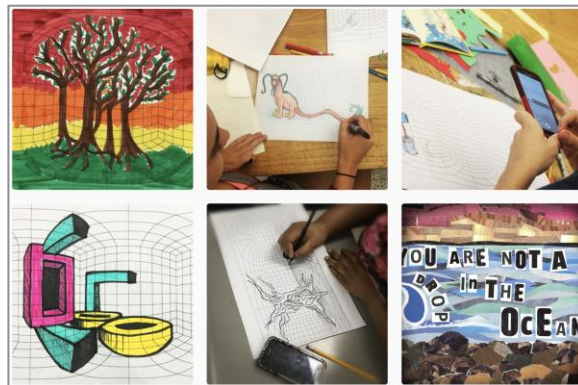
CoSpaces

CoSpaces is another wonderful tool that students can use to increase their skills with computer science . There are a lot of great features with the subscription, however there are still many things students can do with a free account. It gets students thinking critically about designing in a 3D environment, but it also has more advanced features like block and script coding. This is a great site to get your students excited about creating something they can show off in a variety of ways, whether that be a VR headset or on a Chromebook!