

# ARCS NEWS

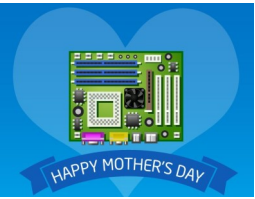
Advancing Rural Computer Science

Brought to you by The Center for Educational Partnerships at Old Dominion University

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## Announcements



Greetings, and welcome to our May newsletter!

Since the month of May includes Mother's Day, we want to cheer for all the Moms and mother figures in our lives! We also want to showcase why it is important for our young women and girls—who may become future Moms—to consider computer science as a career. Here are some facts and figures from [www.computerscience.org](http://www.computerscience.org):

- Historically, women made up the majority of the computing workforce from World War II to the 1960's
- The Bureau of Labor Statistics states that computer science jobs will grow almost 20% by 2026
- The American Association of University Women reports that computer science has one of the smallest gender pay gaps (6%)
- Girls are often interested in working for large companies with which they are familiar such as Facebook, Google, or Apple
- There are college scholarships available for girls who wish to study computer science

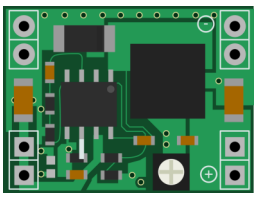
There are quite a few organizations seeking to promote women and girls in STEM+C. You may have heard of [Girls Who Code](#) and [Black Girls Code](#). Women in STEM and computer science are also reaching out to bring in the next generation of girls through mentoring. One organization doing this is the [Million Women Mentors Network](#).

Our rock star ARCS Moms (and Dads, uncles, aunts, sisters, brothers, and grandparents) also like to do fun things during the summer, like complete self-paced Microcredentials! Stand by for your invitation to register for your ODU account! We are preparing "byte" sized components with resources you can use.

Best wishes,

The ARCS Team

## Concept Corner



The ARCS team would like to take this opportunity to recognize the hard work and dedication of mothers everywhere. Thank you for what you do - even in computing systems.

The motherboard, like our mothers, is the main circuit board of the computer system. Also known as the "mainboard" or "baseboard," it was invented in 1981, with IBM adding it to computers later that year. It is the central "brain" of the computer, containing CPU, memory, various circuits, and ports that connect everything for both input (mouse, keyboard, mic, etc.) and output (printer, screen, speakers, etc.). All parts connect to it, and nothing works without going to it first. Why? Without a processor handling the action or memory containing information, the action would be pointless. Unlike older computers without motherboards, communication is faster; closer chips means less circuit distance for electrons to travel.

In most cases, the actual motherboard itself is simply a plastic platform with the circuits connecting replaceable CPU, memory, or other core computer parts. The user can upgrade CPU and memory chips by detaching and attaching new chips, including graphics cards for users who want to play their favorite games. Like our real mothers, the motherboard is there for its "children" no matter how they change and contains knowledge on all of life's core tasks. Whether electronic or biological - we hope all great mothers have a wonderful Mother's Day!

>> CS SOLs K.5, 1.7, 2.7, 3.8, 4.8, and 5.7.

## Pedagogy Pointers



**A hardware lesson with tons of resources: Hello Ruby** has published many lessons on computer science subjects, including hardware. Videos to support the lessons and lesson materials (including printables!) are open source and free to use. To access the lesson materials, click "Episode 6: Hardware". Can be adapted to align with CS K.5, K.6, 1.7, 1.8, 2.7, 2.8, 3.9, 4.9, and 5.8.

[Access Hello Ruby](#)



**Perfect for Mother's Day: Tynker** has a digital storytelling activity where students can program and share a story about an important family member in their life. This activity provides a block-coding template that students can customize. Aligns with CS 1.2, 2.2, 3.2, 4.2, 5.2.

[Access the activity](#)

## Computer Science in the Commonwealth



Computer science is the foundational concept that sparks innovation and drives technology. The Virginia Society for Technology in Education is a great organization that focuses on the instructional use and integration of technology. This summer VSTE is offering a virtual learning experience, Elementary Technology Conference for K-5 educators. Participants will have the ability to attend live sessions, watch recordings, and earn over 70 professional development hours. There is a cost to attend the conference. For more information, visit: <https://vste.org/> and to register for the conference visit: <https://elementary.tcea.org/register/>

## Engaging All Learners



Computing systems are a combination of several independent components – motherboards, processors, memory, displays, etc., each of which has a clear purpose and each of which is vital to the operation of the system. The synergy created by these computing components when they are grouped together into a system provides a great example of how independent features can combine to create fascinating and rewarding output. Classrooms present a similar concept in that they are a collection of students who represent varying backgrounds, cultures, interests, and experiences – all of which can contribute to a diverse and dynamic community of learners. Culturally responsive teaching strategies can help teachers create this environment by empowering students to recognize their value as members of the community and as meaningful contributors to the learning process. A list of strategies and examples developed by [prodigygame.com](http://prodigygame.com) for integrating culturally responsive teaching into your elementary curriculum can be [accessed here](#) to support diversity and inclusion among all students.

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Old Dominion University

The Center for Educational Partnerships

Have a question or feedback for us? Email [TCEP@odu.edu](mailto:TCEP@odu.edu)

Website: <https://www.odu.edu/tcep/arcs>

Tel: 757-683-5449