

# ARCS NEWS

Advancing Rural Computer Science

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

VOL. 3, ISSUE 6

MARCH 2023

## Announcements



Greetings! Welcome to our March ARCS newsletter. Let's spring into some new computer science updates.

This month's theme is **Algorithms and Programming**. An algorithm is a set of instructions for solving a problem or accomplishing a task. Following a recipe, completing morning or bedtime routines, or even driving to or from someplace are examples of algorithms in everyday life. We hope you enjoy a thought-provoking Concept Corner that aligns with this theme – you may never view your morning routine the same way ever again!

### Invite a Friend to Join ARCS!

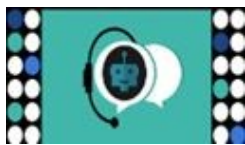
ARCS welcomes 2023 and 2024 applications! Do you know anyone who would like to integrate computer science into K-5 classrooms and earn a stipend and microcredentials for doing so? If so, please consider sharing this newsletter with them. Here's what they need to know before completing the application:

1. First, build a team. Assemble at least one grade level team (3<sup>rd</sup>, 4<sup>th</sup>, or 5<sup>th</sup>) within your school consisting of ALL classroom teachers in a single grade OR a librarian/media specialist/ITRT/etc. who provides instruction to ALL students in that grade level.
2. Get your building administrator's approval supporting your team's participation.
3. Next, have a representative of your grade level team complete the ARCS [school level application!](#)



**CodeVA has three upcoming Learning Bytes sessions this spring!** Be sure to mark your calendar. All ARCS participants are encouraged to complete two Learning Bytes sessions. Click [here](#) to register.

- March 15 at 6PM – Artificial Intelligence Basics
- March 29 at 6PM – Data Science Every Day
- April 12 at 6 PM – Coaching: Giving Feedback for Integrated Lessons



Be on the look out for **KITS: Keeping In Touch Seminars happening in March**. These one-hour Zoom-based training sessions have been designed to help ARCS participants use the robotics classroom resource kits that were requested and shipped over the winter break. Registration links will be shared in the next few weeks.

As always, don't hesitate to reach out if you have comments or questions.  
The ARCS team.

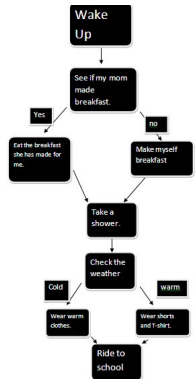
## Concept Corner



St. Patrick's Day and its respective festivities are coming up; traditions of wearing green, seeking shamrocks, and embracing the spirit that, somewhere, a leprechaun is out fulfilling the folklore emerges. Yes, it's odd to think algorithms and programming are tied to a holiday from the 4th century. To some, these words sound intimidating, but what's not realized is, as we live and learn through daily experiences, our brain "programs" itself to complete tasks with our very own "algorithms" every day!

An algorithm is a step-by-step process to complete a procedure. A "machine" (like a computer, or your brain) is programmed to "run" it. It's that simple! There's an algorithm for every task. When leprechauns look for gold, they look for rainbows - if they find one, they stop searching and run to it. If there's a pot of gold, they grab it. When looking for a four-leaf clover, we use a familiar algorithm: if we find clovers, go and check each one. If it has three leaves, keep looking - if it has four, keep it and stop looking. Enjoy the lucky charm!

How do you wake up? Some folks sit up then cut the alarm; some turn it off first (highly inadvisable!). How do you brush your teeth? What part of your outfit do you first put on? Our brains form these algorithms subconsciously, following mental "flow charts" that split with each decision. Over time, algorithms are programmed for repeated tasks. However, unlike brains, we use code to program algorithms into computers (a different language than the brain's). This is where computer science comes into play.



## Pedagogy Pointers



**For lower elementary on GoOpenVA: Grid Challenge** is an available lesson plan involving a hands-on approach to algorithms and sequencing. Students can do this activity unplugged or with programmable robots like [Bee-Bot](#). The lesson includes suggestions for modifying and making the lesson fun, as well as provides the grid needed to conduct the lesson. Aligns with CSK.1, CSK.2., CS1.1, CS1.3, CS2.1, & CS2.3.

[Access the Lesson Plan](#)



**For upper elementary on St. Patrick's Day: Tynker** offers a fun coding project where students can build and command a monster or leprechaun that collects four leaf clovers. The lesson walks students through how to create the game and make it into their own platformer. Aligns with CS3.2, CS4.2, and CS5.2.

[Tynker St. Patrick's Day Project](#)

## Computer Science in the Commonwealth



### News from VDOE!

In an effort to provide information on the instruction and integration into core disciplines of the 2017 Computer Science Standards of Learning, VDOE created a [Computer Science Implementation Frequently Asked Questions](#) document. This resource also provides guidance to counselors concerning student placement and credit opportunities with computer science courses. Take a moment to look over the Q&A to help get a better understanding of how CS fits into your curriculum.

## Engaging All Learners



Equity in Computer Science Education  
Code.org  
20K views • 9 months ago

When we think of computer science, often the first topic that comes to mind is programming – a concept that can be both exciting and daunting. Educators and researchers agree that the lack of diversity in computer science education pathways and careers is largely due to insufficient access to quality education in computer science combined with an absence of role models in computer science (including coding and programming) fields.

Noting this deficiency, Code.org, a non-profit agency whose mission is to expand access to and participation in computer science among females and students of color, developed a series of videos which feature a diverse group of celebrities and everyday people undertaking computer science tasks and/or sharing their experiences in computer science careers to promote the reality that computer science is truly for all learners. [Click here](#) to access Code.org's brief and informative videos, most of which are under five minutes, with many clocking in under two minutes.

United States Education Department Grant U411C190032. The contents of this newsletter were developed under a grant from the Department of Education. However, those contents do not necessarily represent the policy of the Department of Education, and you should not assume endorsement by the Federal Government.

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