Concept Corner

One of the major factors that a software programmer needs to consider is how fast their code works. To the
programmer, this might be a confusing concept to understand. The best way to explain this is with a few
practical examples.

Let’s say that you are programming a mail delivery robot for the Post Office. You have 10 mailboxes to fill with
mail. Each mailbox is to get mail from 2 different companies. You could program the robot to deliver the bill
from the first company at each mailbox, then deliver the bill from the second company, then deliver the bill
from the third company. However, that would mean the robot would have to make the same top three
trips, or 30 mailbox stops for 10 houses! In this case, it is a better option to program the robot to drop off all the
bills that belong to the address at each mailbox. That way, the delivery robot stops only once at each mailbox.

Suppose you have 100 people that are trying to run for president of the United States. You are programming a
robot to check if these candidates meet the 3 eligibility criteria to become president: they
must be a U.S. citizen, have been born in the U.S., or have at least 1 U.S. citizen
parent. If any of these requirements aren’t met, you cannot run for president. You could program the robot to
always check all three criteria, but what if somebody misses the first criteria? Why should the robot waste time
and energy to continue to check the other two criteria? The best way to program this robot is to have it contin-
ue to the next candidate the second that it finds a criteria that is not met.

Pedagogy Pointers

Free Curriculum: code.org provides a comprehensive K fundamentals of coding curriculum, complete with
videos, online and unplugged activities, and guides for educators to help facilitate teaching code in their
classroom. Each grade level has its own course of material to cover. Aligns with CS K-1.1, 1.3, 2.1, 3.1-
3, 4.1-3, and 5-13.

code.org fundamentals curriculum

Student intended lessons in coding from code.org are available to appeal to students’ specific interests and
keep coding relevant and engaging with hour of code activities. Popular examples include lessons based on
game-videos, favorite movies, and different school subject areas. Aligns with CS K-3.1, 1.3, 2.1, 3.1-
3, 4.1-3, and 5-13.

‘Plugged’ hour of Code activities

‘Unplugged’ hour of Code activities

Computer Science in the Commonwealth

Computer Science Education Week (December 6th–12th, 2021) is a national week that celebrates, high-
lights, and showcases computer science education. This week is declared each year by the Governor’s pro-
clamation, dedicated to celebrating and encouraging students, teachers, and families to engage with computer science. CoVaK, partnered with the VDOE and statewide CSTA chapters to offer an entire virtual week of
workshops, kid’s activities, student competitions with prizes, and PD sessions for educators to get as many
people across Virginia using, playing with, and learning about how computer science affects their everyday
lives.

CodeVA’s theme for Computer Science Education week this year is #MeMyDataAndI! Powered by
Facebook and focused on data science, we will explore what existing data can tell us about ourselves and others.
Join us to hear from speakers from across how they support data science and what their data says about them.
For a schedule of all CS Ed Week LAUNCH events this year and to register, go to
coderva.info

Engaging All Learners

Just as computer programmers test the code they write until it works properly, educators must continually
improve our instructional strategies to support the success of all students. The Wisconsin Center for Educa-
tional Research at the University of Wisconsin – Madison hosts the iVRAE, an initiative that provides infor-
mation and opportunities for professional development designed to help multilingual educators excel, teach-
more of the resources found on their site can be used with a wide variety of diverse learners. Click here to
visit the iVRAE site and learn how strategies such as creating an engaging classroom and connecting with
families can impact an understand environment and capitalize on students’ strengths and diversities to pro-
mote a multicultural setting where all students feel welcome.

The contents of this newsletter were developed under a grant from the Department of Education. However, these 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
Website: https://odu.co1.qualtrics.com/jfe/form/SV_1BbRemJjkaJiEVE

ARCS NEWS

Announcements

Greetings, and welcome to our December newsletter!
We hope you and your students enjoyed a relaxing Thanksgiving! How many computing devices and sys-
tems helped you to shop for your Thanksgiving dinner, or bring your loved ones together to eat it?

This month, our theme is a celebration of how fast software needs to run, and pro-
sides to links to coding curriculum resources below. We also celebrate CS Ed Week! Scroll down for infor-
mation about Commonwealth wide events during the week of December 6-12th.

***Important Newsflash*** Which CS resources have you tried, or wanted to try, in your classroom?
That is a question the ARCS team has been thinking about this month. We would like to hear from you so
that we can plan ways to support you! Please click on this link and respond to the survey, which should take you 5 minutes or less to complete. We would love to hear from you by December 17th!

https://odu.co1.qualtrics.com/jfe/form/SV_1BbRemJjkaJiEVE

We wish you all safe and happy holidays, and look forward to being in touch again in the New Year.

Happy Holidays!
The ARCS Team

TCEP@odu.edu