

# ARCS NEWS

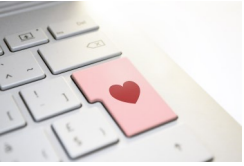
Advancing Rural Computer Science

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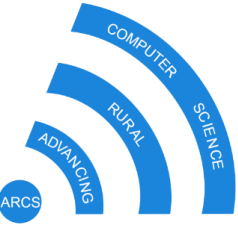
MAY 2024

## Announcements



**Greetings!** We are writing this as we approach Teacher Appreciation Week and want to extend a huge thank you for all that you do! We hope your week is filled with thank you's and special moments. We would also like to extend our gratitude to all of the mothers out there. For all you do to keep the family machine powered, Happy Mother's Day!

As this school year draws to a close, some of you are completing the K-5 CS Integration Micro-credentials (congratulations!), while others will begin them next month. The ARCS team has been busy gathering information from you and your students. The data you provide will help improve and sustain the program. We are excited to see how much learning has been taking place—thank you for sharing and being part of the CS integration movement in the Commonwealth!



This summer, we are excited to welcome another cohort of K-5 educators to the active phase of ARCS. Their participation begins with the ARCS Code VA Coaches Academy. We hope that wherever you are in your CS integration journey that you will share your experiences with others and encourage them to join in.

Now, on to this month's theme — **graphing and visualizations!**

The ARCS Team

## Concept Corner



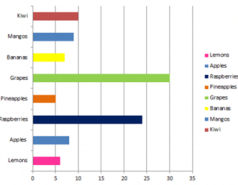
Graphs are useful as a means to view data in an alternative form than a table. Graphs help analysts discover patterns and trends, and make solid insights and predictions.

It is important to understand the basics; each type of graph has a common purpose in presenting data. Line graphs typically show information changing over time - finding the value of the horizontal position of a place on the line can explain what point in time it took place. Scatterplots can be used to represent many observations and reveal relationships between variables.

For example, one could plot how many miles are driven on how much gas. The amount of gas affects the number of miles driven, making the x-axis variable "gallons of gas" and the y-axis variable "number of miles driven". If you drove 100 miles on 4 gallons of fuel, you would place a point at (4, 100). After several points have been plotted, it's likely that this example graph would end up having a general positive slope, as more gallons of gasoline usually mean more distance to travel. This is called a positive relationship or correlation. A positive slope shows an upward trend as one reads from left to right. A negative slope, on the other hand, would be revealed by the increase in one variable being associated with a decrease in another. This would appear on the graph as a downward trend from left to right.

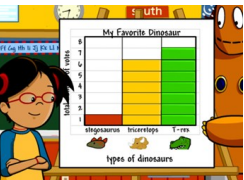
Data can be recorded and graphed with the same software program, such as Microsoft Excel. It is important that students learn to label their x- and y-axes and examine the scales that the computer often chooses as a default.

## Pedagogy Pointers



**Excel for Elementary School:** the K5 Technology Lab is a site with free activities and resources to access and use in STEM education. One major component includes an elementary school-friendly introduction to creating graphs with Excel. Using Excel to make graphs and charts can be adapted for SOLs such as Math K.11, 1.12, 2.15, 3.15, and 4.14.

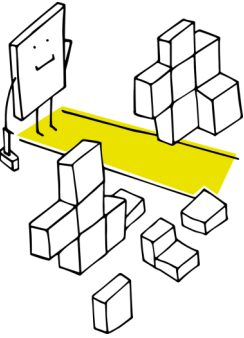
[Access the K5 Technology Lab](#)



**Free BrainPOP Jr. Content:** BrainPOP Jr.'s video and related lessons and activities for graphing are one of the always-free subject lessons the site offers, regardless of your school's subscription status. The Brainpop Jr. content aligns with Math K.11, 1.12, 2.15, 3.15, and 4.14.

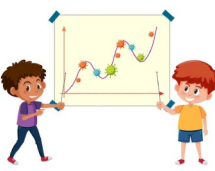
[BrainPOP Jr. - Graphs](#)

## CS in the Commonwealth and Beyond



**Global Accessibility Awareness Day:** Thursday, May 16 is the 13th annual Global Accessibility Awareness Day. First launched in May 2012, the focus of [GAAD](#) is to promote digital access and inclusion for people with disabilities and impairments. More than one billion people worldwide have impairments in vision, hearing, motor skills, and cognitive abilities and are often underserved by current digital products and services. By providing support, guidance, and resources, teachers can help students overcome barriers to accessing digital tools and technology. This assistance is essential in ensuring that all students have equal opportunities to learn and participate in the digital world. Teachers play a key role in creating an inclusive learning environment where every student, regardless of their abilities or disabilities, can thrive, succeed, and be empowered to reach their full potential and participate fully in society. LinkedIn has shared [Teacher Tips on Global Accessibility Awareness Day](#) to promote learning for students with and without disabilities in an online educational environment.

## Engaging All Learners



One technique that educators can use to engage and support diverse learners across the curriculum involves graphing of data or information. Graphs provide a visual display that illustrates relationships between variables which allow users to make comparisons, investigate cause and effect, and describe characteristics of data that may not be easily distinguishable or interpretable in a narrative format. [Click here](#) to visit the *¡Colorín Colorado!* site that provides free online tools, resources and strategies designed to support graphing activities. Initially created to serve English Language Learners, the materials provided on this site are presented in English and Spanish and can be used by educators and parents to promote academic and social-emotional development for all students.

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Old Dominion University

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