



metrics

Metrics is a whole school immersion approach to computer science (CS) integrated across the curriculum into daily classroom and real-world experiences to boost traditionally underrepresented, high-need student aspirations, attainment, and achievement. Winchester is one of ten public schools in the country to receive the coveted Education Innovation and Research Early-Phase grant from the U.S. Department of Education. This \$4 million innovation and research grant supports two K-4 elementary schools in WPS, John Kerr Elementary and Garland Quarles Elementary for the next five years. Through the Metrics program, students will have an immersive experience with computer science and computational thinking which are driving the 21st century economy.

Metrics es un enfoque de inmersión de toda la escuela para las ciencias de la computación (CS) integrado en todo el plan de estudios en el aula diaria y las experiencias del mundo real para impulsar las aspiraciones, los logros y los logros de los estudiantes tradicionalmente subrepresentados y de alta necesidad. Winchester es una de las diez escuelas públicas del país que recibe la codiciada subvención de la fase inicial de investigación e innovación educativa del Departamento de Educación de EE. UU. Esta subvención de innovación e investigación de \$ 4 millones apoya a dos escuelas primarias K-4 en WPS, la primaria John Kerr y la primaria Garland Quarles durante los próximos cinco años. A través del programa Metrics, los estudiantes tendrán una experiencia inmersiva con las ciencias de la computación y el pensamiento computacional que están impulsando la economía del siglo XXI.

Goals of Metrics:

- Create rigorous CS curriculum units and assessments to support STEM coursework connected across all subjects through problem based learning
- Provide a high quality teacher development and support process to sustain innovative CS instructional practices
- Strengthen students' tethers to CS and STEM coursework by engaging students in real world linkages beyond the classroom.
- Support students through CS integrated STEM, PEDLE, and Makerspace Labs.

Objetivos de las métricas:

- Cree unidades y evaluaciones rigurosas del plan de estudios de informática para respaldar los cursos de STEM conectados en todas las materias a través del aprendizaje basado en problemas
- Proporcionar un proceso de apoyo y desarrollo de maestros de alta calidad para mantener prácticas innovadoras de instrucción en informática
- Fortalecer la unión de los estudiantes con los cursos de informática y STEM al involucrar a los estudiantes en vínculos con el mundo real más allá del aula.
- Apoye a los estudiantes a través de STEM, PEDLE y Makerspace Labs integrados en CS.



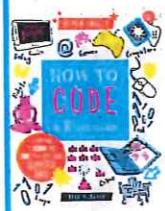
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@MetricsWps



Algorithms & Programming

Grades K-4 VA SOL Computer Science Resources



How to Code in 10 Easy Lessons by Sean McManus

Provides an introduction to computer programming using Scratch software and creating web pages using HTML in ten lessons that each introduce a different coding skill.



Bugs That Make Your Computer Crawl: What are Computer Bugs?

Blue Ridge Download Consortium

by Brian P. Cleary
Don't swat that bug--fix it! The CATegorical cats offer a fun and accessible introduction to computer bugs.



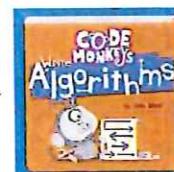
25 Scratch 3 games for Kids: A Playful Guide to Coding by Max Wainewright

An introduction to the basics of programming with instructions to create 25 different games that teach core coding fundamentals such as loops, variables, and functions, as well as open-ended exercises.



How to Code a Sandcastle

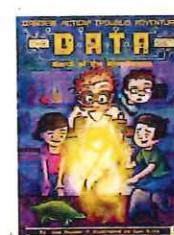
by Josh Funk
Pearl and her trusty rust-proof robot, Pascal, need to build a sandcastle before summer vacation is over, and they're going to do it using code.



Code Monkeys Write Algorithms

hoopla

by John Wood
Find out how code monkeys build sets of instructions called algorithms using flow charts.



March of the Mini Beasts by Ada Hopper

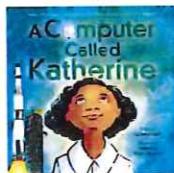
Three whiz-kid from a scientifically inclined family, known as the DATA Set, are thrown into a madcap adventure when they befriend a mad scientist whose latest invention causes toys to turn into monsters.

CHECK OUT THESE BOOKS WITH A LIBRARY CARD!

Ages 5+ that live or work in Clarke or Frederick Counties or Winchester City in Virginia are eligible to get a free library card. Start your application [here](#).

Impacts of Computing

Grades K-4 VA SOL Computer Science Resources



A Computer Called Katherine

by Suzanne Slade

A true story about race and gender restrictions where Katherine Johnson helped pioneer America's early space program.



Computer Programming: From Ada Lovelace to Mark Zuckerberg

hoopla

by Kelly Doudna

Explore the exciting history of computer programming from Babbage's Analytical Engine, through ENIAC, punch cards, and the cloud!



Little Dreamers: Visionary Women Around the World

by Vashti Harrison

Shares illustrated profiles of 40 women trailblazers from different world regions and historical periods, including computer pioneer, Grace Hopper.



Digital World: How to Connect, Share, Play, and Keep Yourself Safe

by Carrie Anton

A guide for savvy girls shares strategic advice and quizzes for protecting personal safety online.



Margaret and the Moon: How Margaret Hamilton Saved the First Lunar Landing

by Dean Robbins

An introduction to the pioneering woman mathematician who saved the first lunar landing.



The Technology Tail: A Digital Footprint Story

by Julia Cook

A cute, creative story about children and their texts, tweets, posts and pics.

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metrics
techies (thinkers) thinkers

Save the dates! Computer Science Education Week is coming to JKES and GQES: December 6 - 10!

You are invited to join us in celebrating Computer Science education with a week of games, challenges, and more!

Activities marked with an asterisk** require registration.

Monday 12/6	Tuesday 12/7	Wednesday 12/8	Thursday 12/9	Friday 12/10
Maker Space at Handley Library from 4- 7 pm FREE! No registration required. RSVP for Hour of Code 	Take a trip through Virginia - the Digital Dominion! 	Amazon Future Engineers Virtual Tour! 	Sign up for 'Snail Mail' a monthly student activity booklet! 	Virtual Code-a-thon continues! Lego Club at Handley Library from 4- 5 pm FREE! No registration required.
Family Code Night Livestream @ 7 pm Click here to find FREE bus transportation through WinTran to Handley Library Virtual Code-a-thon begins! 	6:00 pm Data-Based Music: Sonic Pi Coding, (paired programming): Available here Virtual Code-a-thon continues! 	Virtual Code-a-thon continues! Handley CS book check out & FREE library card!	Virtual Code-a-thon ends! Virtual Code-a-thon continues! 	



metrÍCS

techies {thinkers} tinkerers



iApunta las fechas!

La Semana de la Educación en Ciencias de la Computación llega a JKES y GQES: ¡del 6 al 10 de diciembre!

¡Está invitado a unirse a nosotros para celebrar la educación en Ciencias de la Computación con una semana de juegos, desafíos y más!

*Las actividades marcadas con un asterisco ** requieren registro.*

lunes 12/6	martes 12/7	miércoles 12/8	jueves 12/9	viernes 12/10
Maker Space at Handley Library de 4 - 7 pm GRATIS! ** <u>RSVP para la hora del código</u> 	Take a trip through Virginia - the Digital Dominion! <u>Transmisión en vivo de Family Code Night @ 7 pm</u> 	Tour virtual de futuros ingenieros de Amazon! 	Regístrate para recibir "Snail Mail" un folleto mensual de actividades para estudiantes! 	Lego Club at Handley Library de 4- 5 pm GRATIS!
Virtual Code-a-thon comienza! 	Virtual Code-a-thon continua! 	Virtual Code-a-thon continua! 	Virtual Code-a-thon continua! 	Handley Retiro de libros de CS & tarjeta de biblioteca GRATIS!
				Virtual Code-a-thon termina!