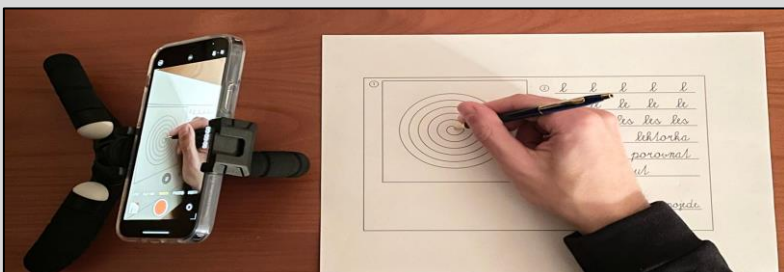Students Seek to Patent Automatic Walker Design for Parkinson's Patients

Student Speaks about *Tech Talent Pipelines* at the Quantum World Congress 2023

Student Creates Vision-Based Handwriting Screening of Parkinson's and Alzheimer's

Investments that Strengthen the K-12 Educational Pipeline
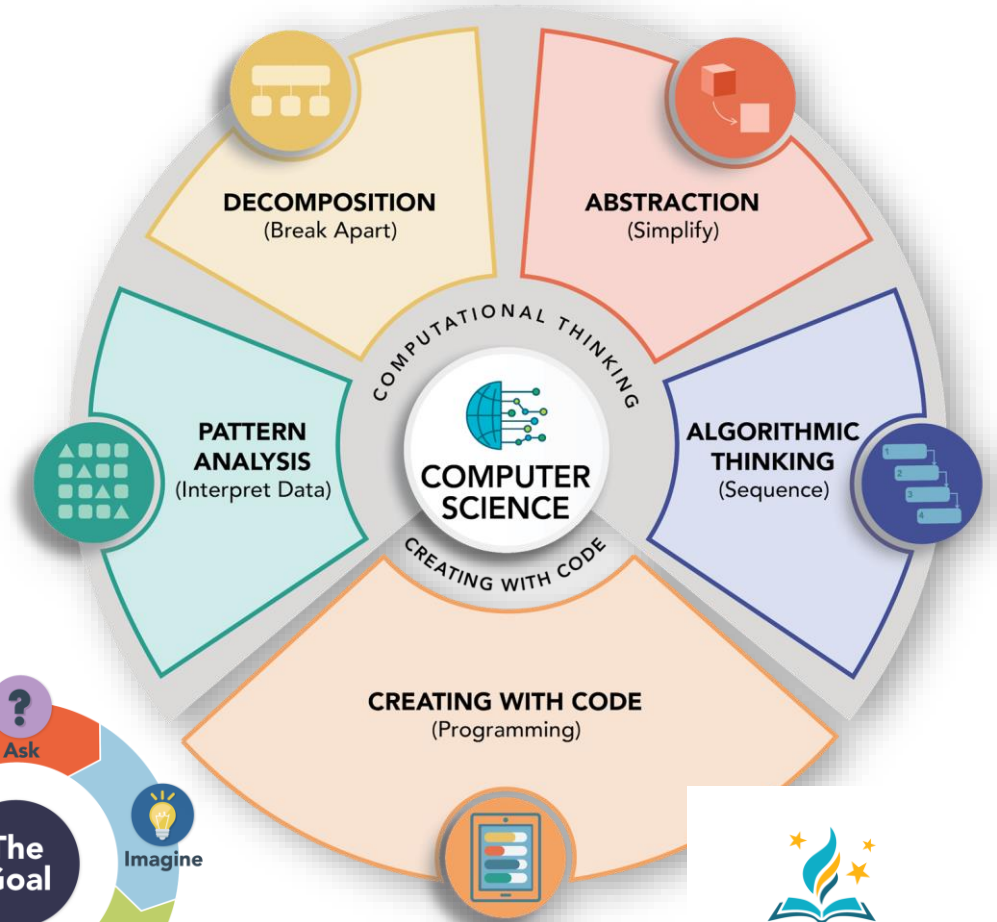
STEAM, Computer Science, and Emerging Fields

STEAM and Computer Science

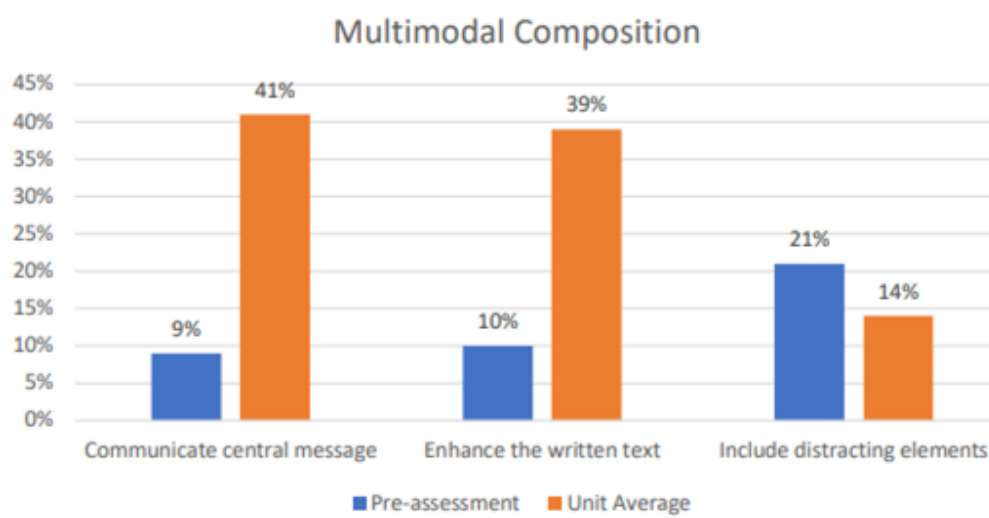Students create, design, inquire, and prepare for the careers of the future.

Students develop foundational problem-solving skills and interest in continuing to explore STEAM and Computer Science (CS) pathways.

DECOMPOSITION (Break Apart)

ABSTRACTION (Simplify)

COMPUTATIONAL THINKING

COMPUTER SCIENCE

PATTERN ANALYSIS (Interpret Data)

ALGORITHMIC THINKING (Sequence)

CREATING WITH CODE

CREATING WITH CODE (Programming)

The Goal

Ask

Imagine

Plan

Create & Test

Improve

FCPS

CSforALL

National Science Foundation Project led by George Mason University

Multimodal Composition

"The greatest thing about the lessons is that everyone has been able to access them."

– 6th grade STEAM teacher

Students improve their writing with universally designed computer science learning and coding lessons.

Code UP! and Code UP! 2.0

DoDEA Grant-funded Projects

Students analyze patterns with arrays and multiplication with an engineering challenge involving architectural design.

"They [the engineering math tasks] allow me to build my idea that I drew."

"It's easier to see and understand the math."

-3rd Grade Students
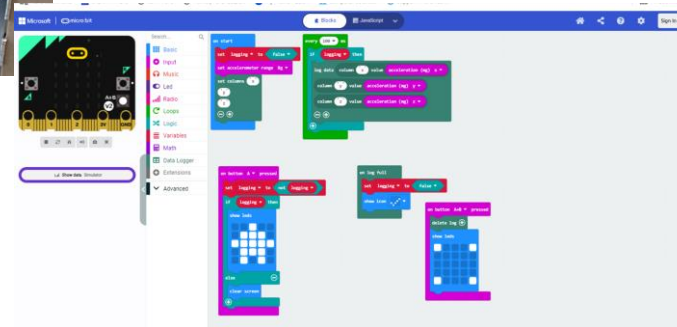
Coming Soon: Math learning enhanced with coding

Code UP!
INTEGRATE. INNOVATE. INSPIRE.

FCPS.

Building the Quantum Workforce

U.S. Department of Education; George Mason University

Student engage in job site tours through the Quantum Pathways Immersion summer program

"If it wasn't for this program, I wouldn't see myself getting interested in quantum until at least by the time I will be in college, so I'm really grateful I got the head start."

- Participating HS Student

Student posters were on display at the 2023 Quantum World Congress.

Ignite Partners

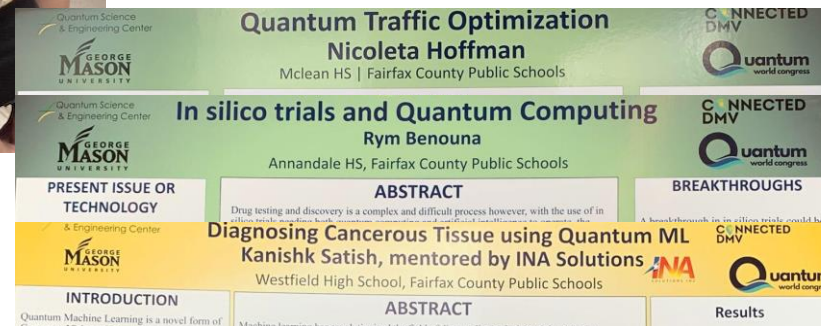Provides inspiring computer science after school and summer programs with mentorship.

Provides high school internships. Offers family science nights to elementary schools.

Examples of Internships:

STEM Summer Camp Internship

Communications Internship

Commonwealth Cyber Initiative (CCI) Internship

Youth Advisory Board

Provides micro:bits to schools and 5th grade students through the micro:bit for all initiative.
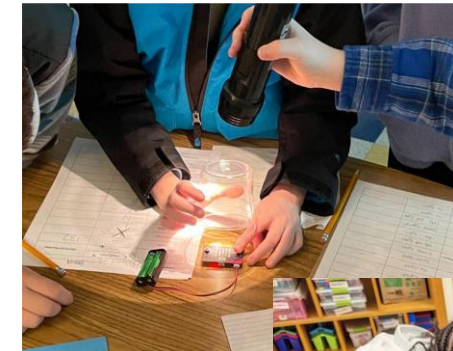
Aim High

Northern Virginia Technology Council, Northern Virginia Community College

Expanding internships, and work-based learning for high school students.

Launch event
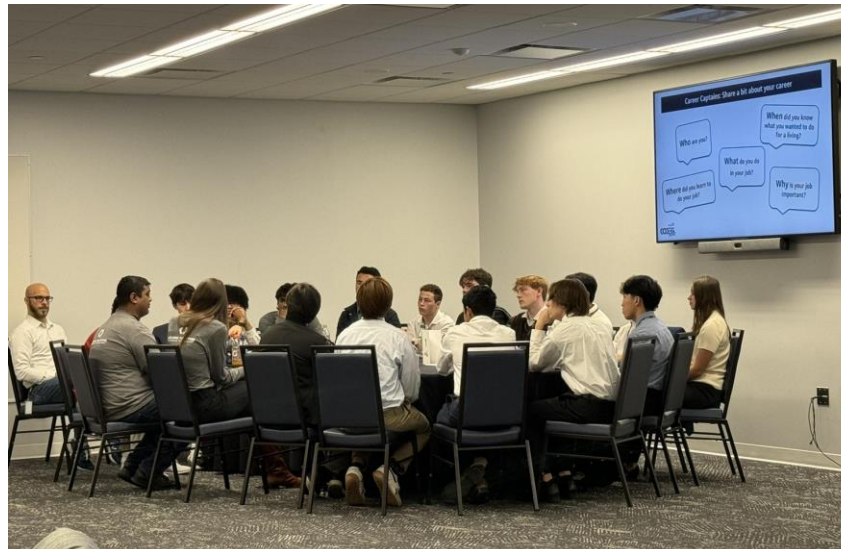
Capital One

Microsoft

Aim High Champions:
Amazon (AWS), ASRC Federal, Booz Allen Hamilton, BTR Fiber Optics, Capital One, CGI, Deltek, GDIT, Iridium, Maximus, Microsoft, Monster, National Science Foundation, Noblis, Rosendin Electric, SAIC, Software AG Government Solutions, Splunk, Unanet, Van Metre

Philanthropic Giving

The Boeing Company

Provided funding to support the Global STEM Challenges Program and expand students access to STEAM and CS across grade levels and schools.

I-66 Express Mobility Partners

"As an engineering company, we're especially motivated to support STEM education, which is so crucial to our region's and our nation's economic future.

Accelerate Progress

Early student access builds confidence, develops foundational problem-solving skills, and sparks student interest in STEAM and CS electives and career pathways.
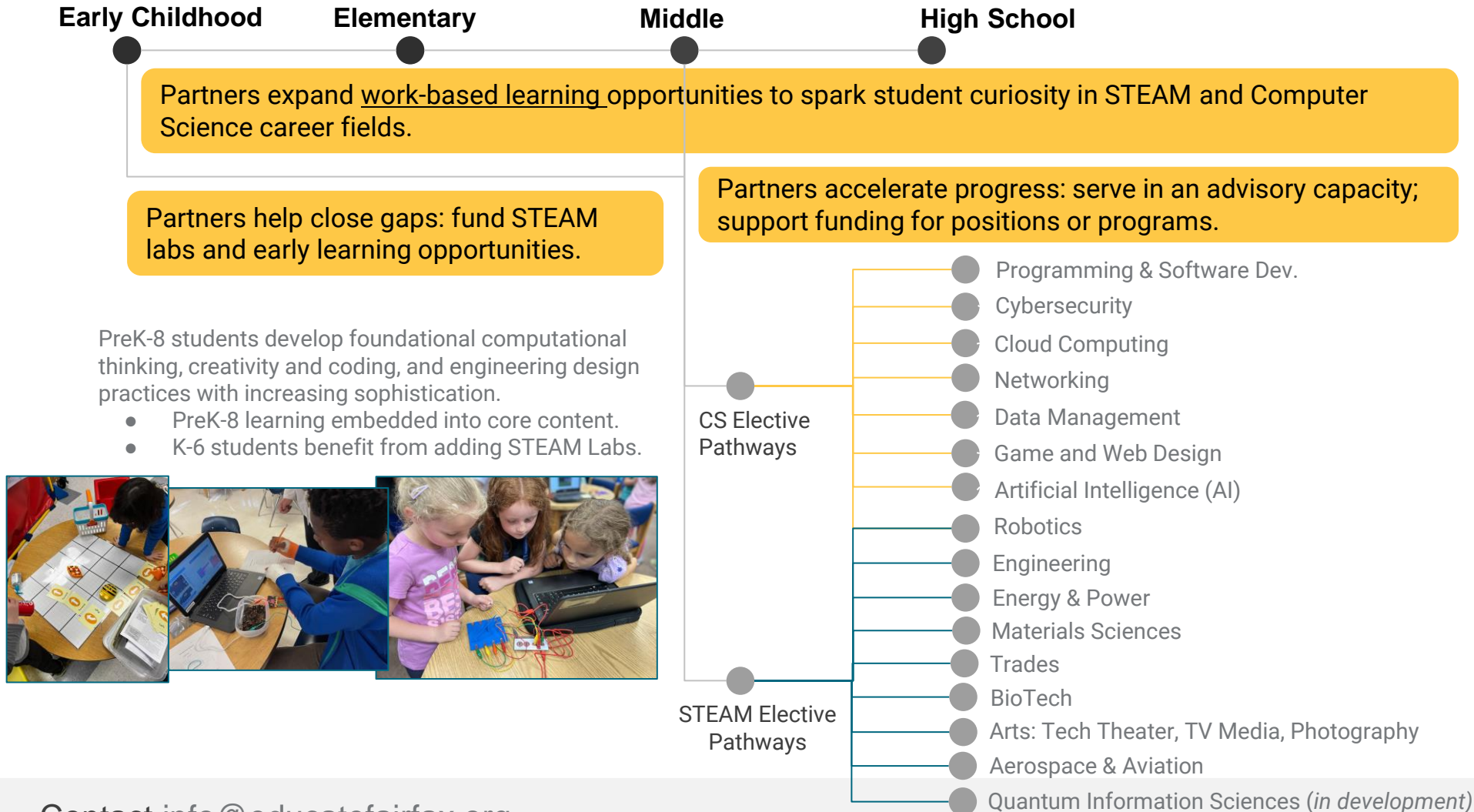
Early Childhood   **Elementary**   **Middle**   **High School**

Partners expand <u>work-based learning</u> opportunities to spark student curiosity in STEAM and Computer Science career fields.

Partners help close gaps: fund STEAM labs and early learning opportunities.

Partners accelerate progress: serve in an advisory capacity; support funding for positions or programs.

PreK-8 students develop foundational computational thinking, creativity and coding, and engineering design practices with increasing sophistication.
- PreK-8 learning embedded into core content.
- K-6 students benefit from adding STEAM Labs.

CS Elective Pathways
- Programming & Software Dev.
- Cybersecurity
- Cloud Computing
- Networking
- Data Management
- Game and Web Design
- Artificial Intelligence (AI)

STEAM Elective Pathways
- Robotics
- Engineering
- Energy & Power
- Materials Sciences
- Trades
- BioTech
- Arts: Tech Theater, TV Media, Photography
- Aerospace & Aviation
- Quantum Information Sciences (*in development*)

Educate Fairfax
Our students. Our strength.

Additional Donor Opportunities:

Teacher Grants

Innovators' Fund

Personalized Gift
info@educatefairfax.org

FCPS

Thank You