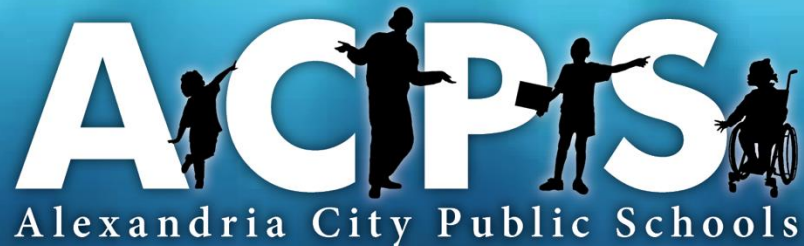
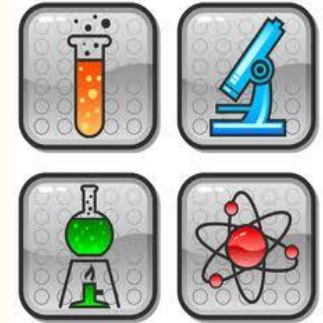


West End Elementary School: *A School of the Future!*



School Board Meeting
February 22, 2018



Every Student Succeeds

Essential Questions

1. What does the research tell us about the power of a **STEM education**?
2. How does STEM education align with **national and state** best practices for improving educational outcomes?
3. What **local and community** input has and will continue to occur to enhance and support STEM education at the West End Elementary School?
4. What are the proposed **instructional program features** of the West End Elementary School?
5. How will the school prepare students for success in **STEM academic experiences and the future**?

Why STEM Education for the West End Elementary School?



Research and Current Thinking (I)

STEM education should ...



1. Integrate **STEM disciplines** and reach beyond the STEM disciplines
2. Include **authentic experiences and project-based tasks** with a focus on global challenges
3. Apply technologies to **scientific and engineering-based scenarios and real-world problems**
4. Provide depth through **critical thinking, problem solving, creativity, and innovation**
5. Offer **multiple pathways for learning**



Research and Current Thinking (II)

STEM education continued ...



6. **Positive correlations between technology integration on math and science achievement** (Ysseldyke and Bolt, 2007; Dunleavy and Heinecke, 2007; Burghardt, et al., 2010)
 - The impact of learning and achievement depends on the approach to integration and the kinds of supports embedded in the experience and provided through instruction. (NAEP Report, 2014)
7. **Studies demonstrate achievement gains when project-based, interdisciplinary curriculum** was utilized (Fortes, et al., 2005; Thomas, 2000; Wenglingsky, 2002)
8. **Significant gains in student performance when STEM instructional principles are integrated** (Hansen and Gonzalez, 2014)





STEM 2026

A Vision for Innovation in STEM Education

In STEM 2026, all members of the community **feel invested and empowered** to **engage** in STEM teaching and learning. STEM is not perceived as being thrust upon them or outside their purview but as **culturally appealing** and **relevant**. The language and concepts of STEM are **accessible to all**, and there is a shared understanding of **where STEM fits into all people's lives**, regardless of race or ethnicity, disability, language spoken, gender, neighborhood, or geographic location. The components of the vision and the propagation of innovative practices effectively connect STEM to the broader portfolios of people's interests and their everyday lives. The result is **intergenerational learning** that empowers learners of all ages to draw on the skills and capacities they have gained as they actively contribute to bettering their own and others' lives.



Virginia STEM Vision



Virginia's vision is to **transform teaching and learning** of science, technology, engineering, and mathematics to equip all learners with the skills and knowledge to become **STEM literate** and to **inspire and empower students** to contribute as global citizens to the economy in meaningful ways.



Virginia STEM Education Goals

1. Create problem solvers, innovators, critical thinkers, and risk takers with entrepreneurial spirit;
2. Integrate the content, processes, and skills of science, technology, engineering, and mathematics;
3. Promote equity and access to STEM experiences;
4. Expose students to STEM career fields and opportunities; and
5. Encourage community partnerships and involvement.



Learning from Site Visits

- **Arlington Science Focus School** (January 10, 2018)
- **Lowell School, D.C.** (January 16, 2018)
- **Henderson Elementary School, Prince William** (February 1, 2018)
- **Baldwin Elementary School, Manassas** (February 9, 2018)
- **Bailey's Elementary School, Fairfax** (TBD)



Community and Parent Engagement

Community Discussion Groups –

January 17, May 16, and October 11, 2017

John Adams PTA –

January 25, 2018

William Ramsay PTA –

February 15, 2018

- Ongoing **family** engagement at Principal Coffees
- ACPS **outreach** to West End zoned Community
- Planned identification of site for **kindergarten registration**
- Regular **robocall** and **text message** services to families in four languages
- Updates with parents at **redistricting meetings**
- Regular Principal **Tweets**



What are the Features of the Programmatic Design?



Kindergarten to 5th Grade Curriculum

Programs of Study

**English Language Arts:
Reading, Writing,
Speaking, Listening**

Art and Music

Mathematics

**Health and Physical
Education**

Science

Library Media Services

Social Studies

STEM-Related Projects



Support Programs and Services

English Learners

- High expectations with high levels of support
- Development of English proficiency through access to the ACPS core curriculum
- Integration of EL Best Practices into all classrooms
- Accelerating Academic Language (AAL) Curriculum (Grades 3-5)
- Team-based co-planning and professional learning on EL Best Practices

Students with Disabilities

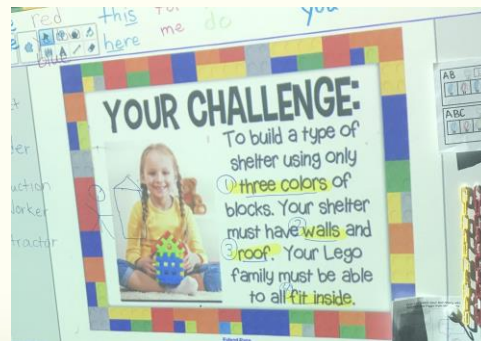
- Individual Education Plans
- Access to the ACPS core curriculum and support services
- Appropriate support services to ensure grade-level achievement
- Related services (such as speech therapy)

Talented and Gifted

- Services to support TAG identification
- Enriched and integrated classroom activities for Grades K-3
- Self-contained English and Math courses for Grades 4-5

ACPS STEM Program Design Principles

1. Curriculum Integration
2. Learner-Centered Instruction
3. Authentic, Real-World Scenarios and Problem Solving
4. Integration of Career Development and Preparation
5. Technology and Blended Learning
6. Mathematics as a Universal Language
7. Performance-Based Assessment
8. Student Self-Reflection and Executive Function

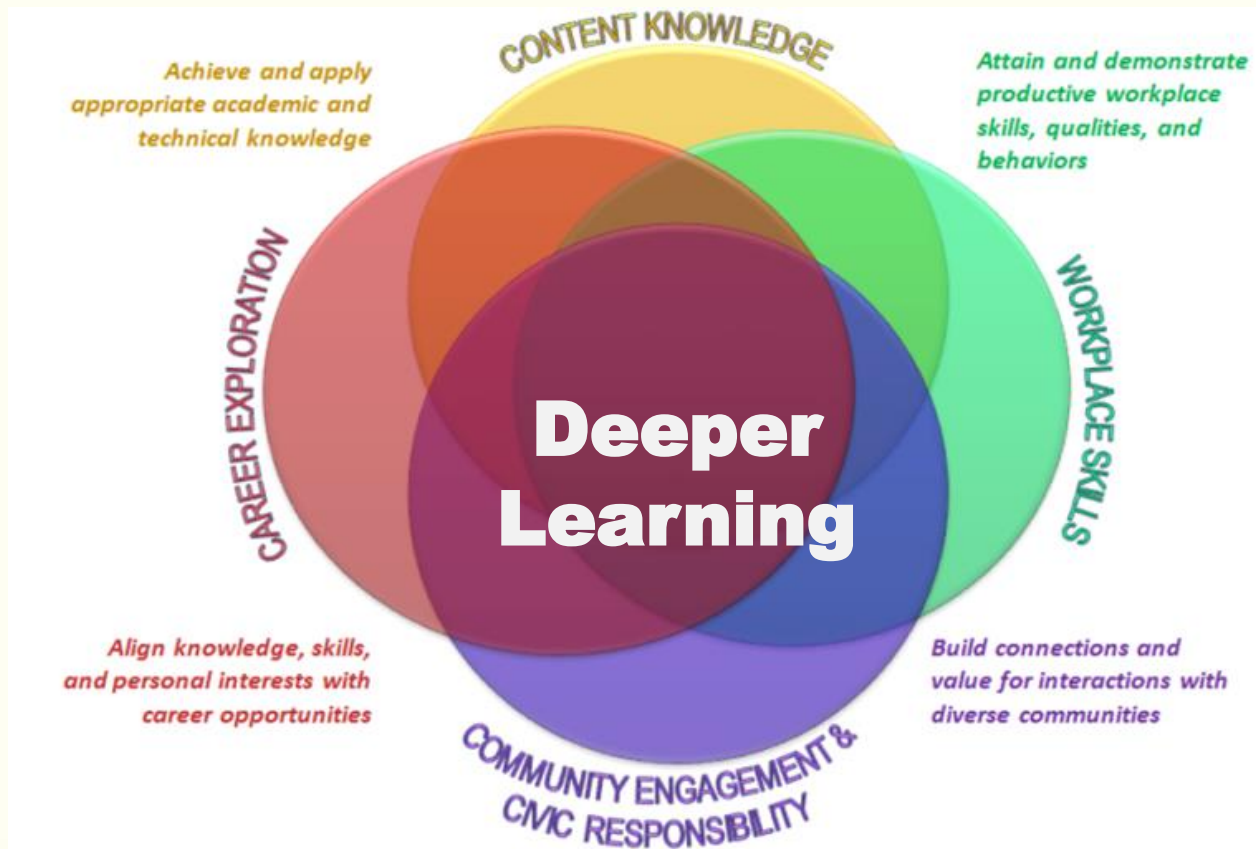


Teaching and Administrative Staff

Ensuring That All Staff Members Support a Successful STEM Education for Every Student

1. Life-Long Learners Who Model Excitement About Learning	5. Creators Who Develop Authentic, Real-World Learning Experiences
2. Leaders Who Support Student Empowerment	6. Facilitators Who Encourage Creativity and Self-Expression
3. Digital Citizens Who Help Students Use Technology Creatively and Wisely	7. Analysts Who Use Data to Personalize and Differentiate Learning Experiences
4. Collaborators Who Model Successful Interaction Strategies	8. Curriculum Designers Who Provide Purposeful Lessons

Profile of a Graduate



STEM Careers



Virginia ranks 5th in the U.S. for number of projected STEM jobs- 404,000 by 2018



Science

Atmospheric Scientist; Biochemist; Chemist; Conservation Scientist; Geneticist; Hydrologist; Life Scientist; Microbiologist; Physicist



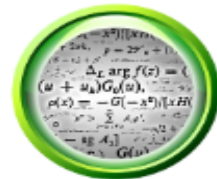
Technology

Business Intelligence Developer; Cyber Security Analyst; Computer Game Designer; Network Administrator; User Interface Developer



Engineering

Aerospace Engineer; Architectural Engineer; Chemical Engineer; Electrical Engineer; Industrial Engineer; Nanosystems Engineers; Robotics Engineer



Mathematics

Biostatistician; Cartographer; Economist; Mathematician; Statistician; Survey Researcher; Transportation Planner

Our Work Continues...

- Weekly West End Program **Planning Committee** Meetings
- Continue STEM **Site Visits** and information gathering
- Share Program with **Community**
 - **PTA Meetings** (John Adams and William Ramsay Elem)
 - West End **Twitter** Profile
- Develop **Teacher Canvas Course** to seek from teachers
- Continue to **Interview** Internal and External Candidates
- Draft West End **Staff Handbook and Family Handbook**
- Plan **K Prep**: John Adams and William Ramsay



Discussion and Questions

