APS Math and Computer Science

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District Vision

*The vision of the Arlington Public Schools is to be an equitable educational community where **all learners** feel a **sense of belonging**, experience **growth and joy**, and are empowered to shape their own futures and contribute to a better world.*

Strategic Plan and Goals

Strategic Priority 1: Ensuring Equity and Excellence
The Arlington Public Schools will ensure equity, excellence, and access to rigorous learning experiences for all students. All graduates will be prepared to achieve their choices of post-secondary education, career, and community contribution.

1.1 Instructional Vision and Coherence All students must have equity of access to rigorous and comprehensive content implemented through inclusive and engaging instructional practices. Deeper Learning concepts and practices will serve as the anchor for the APS instructional vision.

1.2 Student Belonging and Adult Support All students have a supportive relationship with at least one adult at school, are engaged in their learning, and feel that they belong in the school community.

1.3 Implementing Multi-Tiered Systems of Support (MTSS) All students in APS will be supported in their schools by an active multi-tiered system of support (MTSS). MTSS will be coordinated and effective so that students have rigorous learning opportunities coupled with the right supports and resources.

Elementary Update

- **Continued Coaching Support**
  - Teacher Participation in Coaching Cycles
  - District Professional Development
  - ACE Block Facilitation
  - New Teacher Support
- **Strengthening Assessment System**
  - Data Collection and the Data Bank
  - Analyzing Student Work
  - Fluency in grades K-2

Elementary Update

- **Development of System-Wide Tier 2 and Tier 3 Math Support**
  - Five Licensed Interventionists
    - Thompson, Hardy, Dallin, Brackett, and Bishop
    - Push-in and Pull-out services
    - Piloting Pre-teaching
  - Two Paraprofessional Interventionists
    - Similar work, but focus on Tier 3
    - Peirce and Stratton

Gibbs/OMS Update

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Education That Empowers

- **Revision of 7th and 8th grade CS elective**
  - Serves roughly 38% of the population
  - Focused on problem solving, algorithmic thinking, and computational thinking, interdisciplinary projects
- **Implementation of Desmos Curriculum**
- **Restructure Math Intervention Program**
  - Push In for Multilingual Learner Sections - 7th Grade
  - Pre-teaching - 8th Grade
- **Improve Representation in Courses**

AHS Update

- **Support Multilingual Learners**
  - SEI Math Course

- **Improve Collaboration and Student Agency**
  - Building Thinking Classrooms

- **Revise CS Options**
  - New Electives - Cyber Security and Community Projects in CS
  - Expansion of teacher team - Summer PD

Action Items For Next Year

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Elementary

- Continuation of Current Action Items
- Complete Elementary Intervention team
- Improved Collaboration Among all Building Based Support Staff

Gibbs/OMS

- 6-8 Math Coach
- Additional Math Support Revisions
- Standards Based Grading
- Math Pathways
  - Heterogeneous 7th Grade Math Course
  - Bypassing Math 6

Goals/Action Items For Next Year

AHS

- Continued CS revisions
  - Art Department Collaboration?
- Data Science Course Planning - Math or CS?
- Math Support Course for Freshmen
- Before School Support Program?
- Math Fair Project Return?

Computer Science

6-12 Computer Science

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Improve computer science enrollment representation of all focus groups within our community.

Specifically, what can we do at the high school level to welcome a more diverse group of students?

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Education That Empowers

What have we done so far?

MIT PACE Project

- Team includes two high school counselors, two teachers, and Director

- Participated in a training supported by Counselors 4 Computing

- School counseling department collaborations

- Additional Counselor support from Karen Botchellor
  - Advocate for CS in meetings
  - Sent out an informational email to counselors informing them about our work with PACE, Counselors 4 Computing, and the goals of our group

Additional Outreach

- Met with various student groups of underrepresented affinity groups at the high school. Compiled notes on the feedback from those interactions.

- Gathered data from current CS students on their sense of belonging.

- Prepared slides for a school-wide advisory lesson, including a survey.

- Offered a CS career day with parent guests.

- Review of CS courses by math teachers prior to the selection window

- Opened a new STEAM wing, including a new CS lab

- Syracuse University Project Advance (SUPA) - Cyber Security PD

- CS Discoveries Workshop-Training for teacher new to CS

AHS CS by Numbers

District Race/Ethnicity Demographics

White	Asian	Black	Hispanic
70%	**20%**	**3.5%**	**6.5%**

Note: The District percentages are approximations.

21/22	White	Asian	Black	Hispanic	Totals
AP CS A	20	2	1	0	23
AP CS P	41	10	2	1	54
H CS P	19	5	4	1	29
CS D	14	5	1	0	20
AI	18	9	0	1	29
Cyber Security	NA	NA	NA	NA	NA
VG D	NA	NA	NA	NA	NA
Total	112	31	8	3	154
Percent	72.7%	20.1%	5.2%	1.9%	100%

22/23	White	Asian	Black	Hispanic	Totals
AP CS A	37	11	1	1	50
AP CS P	62	20	1	1	84
H CS P	20	6	1	2	29
CS D	11	4	2	3	20
AI/VG D	NA	NA	NA	NA	NA
Cyber Security	9	2	1	0	12
Elective	15	0	1	1	17
Total	154	43	7	8	212
Percent	**72.8%**	**20.2%**	**3.3%**	**3.8%**	**100%**

Race/Ethnicity Demographic Trends

	White	Asian	Black	Hispanic
School District	**70%**	**20%**	**3.5%**	**6.5%**
CS 21/22	**72.7%**	**20.1%**	**5.2%**	**1.9%**
CS 22/23	**72.8%**	**20.2%**	**3.3%**	**3.8%**

Note: The District percentages are approximations.

Gender Distribution

22/23	Male	Female	Non-binary	Totals
AP CS A	38	10	2	50
AP CS P	64	23	1	88
H CS P	23	4	0	27
CS D	14	4	0	18
AI/VG D	NA	NA	NA	NA
Cyber Security	8	4	0	12
Elective	13	4	0	17
Total	160	39	3	212
Percent	75.5%	23.1%	1.4%	100%

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What do we have left to do?

Short Term Goals

- Reflect on the feedback gathered from meetings with student affinity groups

- Help computer club finish the digital display for outside the STEM lab

- Bring the conversation on underrepresentation and our course offerings to the middle school

- Run a school wide hackathon, bring in mentors from outside of the school.

- Improve advertising at the middle school

- Increase advertising at the high school

Down the Road

- Based off of student feedback, take another look at our course names and course descriptions to make the classes seem less intimidating

- Reflect on future course offerings based on student and community feedback

- Reach out to community and local businesses to explore the option of bringing professionals into the classroom on a more regular basis

- Develop a plan for incorporating either internships and/or externships into our program

- Align with k-5 initiatives that promote DLCS standards - coherence!

Questions or Comments?