Arlington Public Schools

EVERY STUDENT COUNTS
EXCELLENCE FOR ALL



Student Academic Growth and Success Monitoring Report

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Science Supervisor

Mr. Carl W. Seward
Mathematics Supervisor

Thursday, October 8, 2026

Presentation Outline



Student Academic Growth and Success

- Progress Monitoring Data
- Standards and Program Updates
- Instructional Playbook and Focus Areas
- Next Steps
- Appendix

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APS Strategic Plan
2024-2030

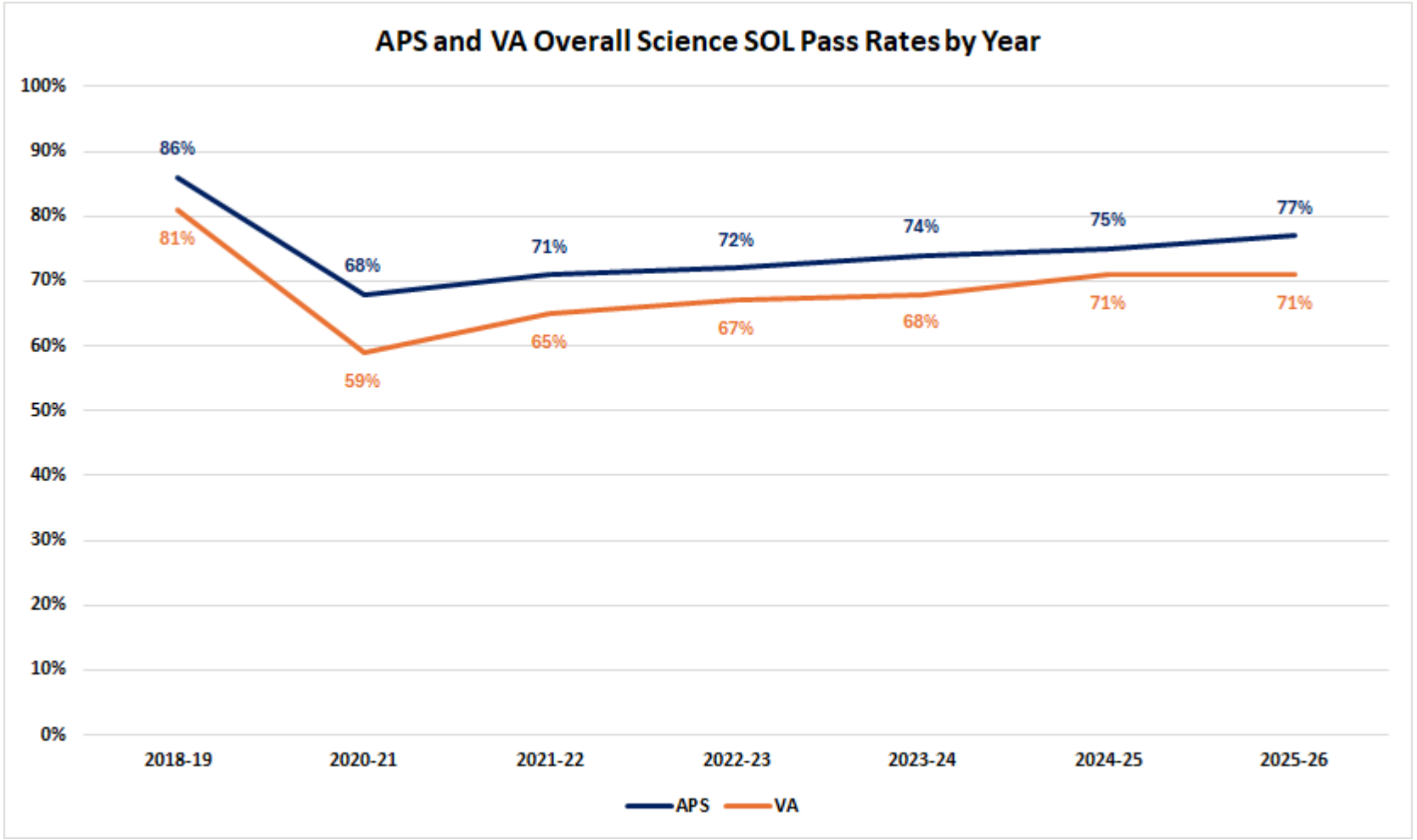


Science

APS Overall Science SOL Performance Compared With Virginia

Student Academic Growth and Success

APS science results increased every year since 2020–2021, and APS outperformed the state by six percentage points this year.



Academic Outcomes in Science by Select Subgroups



Student Academic Growth and Success

APS saw increases in achievement for subgroups on the science SOL.

APS Science 2022–2023 to 2025–2026 Overall Standards of Learning (SOL) Performance by Subgroups					
Subject	**Subgroup**	**2022–2023 Pass Rate**	**2023–2024 Pass Rate**	**2024–2025 Pass Rate**	**2025–2026 Pass Rate**
Science	Students With Disabilities (SWD)	44	47	48	50
Science	English Learners (ELs)	25	29	29	33
Science	Economically Disadvantaged	46	54	53	57

2025 Science SOL



Student Academic Growth and Success

Implementation of New Science SOLs

- **Added standards for 11 high school science courses** that previously had no official SOLs (environmental science and second-year courses such as astronomy, ecology, genetics, etc.)
- Very minor edits to the existing K–12 science standards that were adopted in 2018
- Virginia Department of Education (VDOE)-**provided Science Instructional Guides**: Used to align curriculum, improve assessments, and support high-quality science instruction

2025 Science SOL, Cont.



Student Academic Growth and Success

Developed new curriculum for the following courses to ensure alignment:

- Ecology (Biology II)
- Environmental Science (Biology II)
- Human Anatomy (Biology II)
- Genetics (Biology II)
- Astronomy (Earth Science II)
- Oceanography (Earth Science II)

Science Local Alternative Assessments



Student Academic Growth and Success

Earth Science and Chemistry Alternative Assessment

- Beginning in 2026–2027, school divisions **may use local assessments instead of the Earth Science and Chemistry SOL tests**.
- Students' complete performance-based assessments using state scoring guidelines.
- The assessments are optional and require local planning and scoring.
- Additional pathways will be provided for APS students to earn Standard and Advanced Diplomas.

Instructional Playbook and Science Instruction

Student Academic Growth and Success

Arlington Public Schools Instructional Playbook



Purpose: The purpose of this instructional playbook is to **provide APS staff with a common language around shared instructional beliefs** including how to build stong classroom culture. The APS Instructional Playbook is intended to:

- Support the APS Strategic Plan
- Support the creation of strong classroom cultures
- Provide a focus for teaching and learning
- Provide a focus for curriculum and professional development
- Communicate to stakeholders instructional values.

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We have partnered with the Office of Diversity, Equity, Inclusion and Student Services in the creation of this updated playbook to support alignment and cohesion.

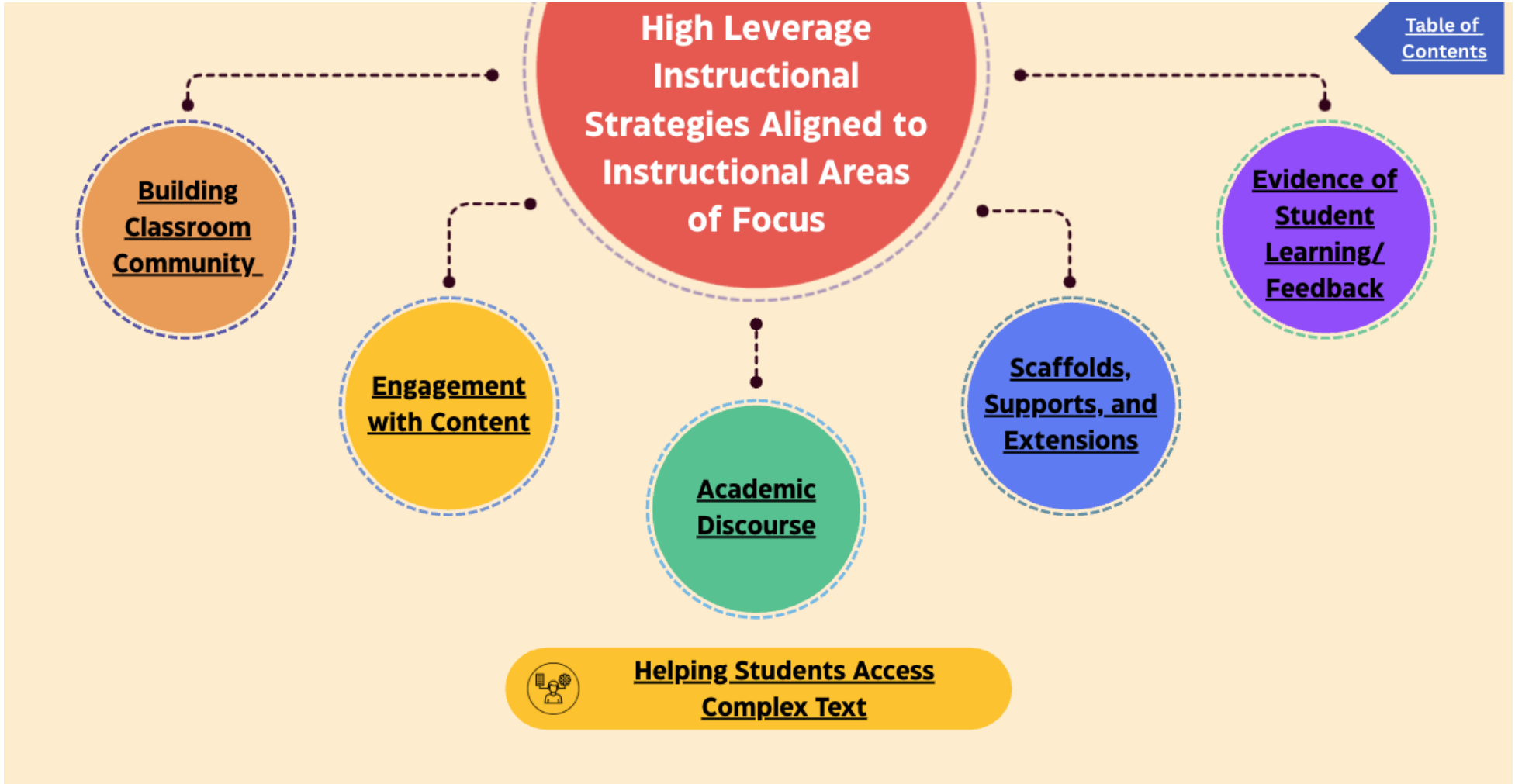
How to Use the Playbook: This playbook is a resource, not a script — it isn't meant to be read cover to cover. Instead, use it as a reference tool to strengthen instruction where it's needed most. Start by assessing where you currently stand in relation to the Instructional Areas of Focus, the APS Lesson Foundation, or other area. Once you've identified your need — jump directly to that section using the linked Table of Contents. From there, explore the targeted strategies, tools, and resources designed to support that specific area. Use the playbook to:

- Build common language and expectations across a building or division
- Support your individual growth as a teacher or administrator
- Guide coaching conversations and PLC discussions
- Inform walkthrough look-fors and feedback

Think of it less like a manual and more like a toolkit — pull what you need, when you need it, to help strengthen instruction.

Instructional Playbook and Science Instruction, Cont.

Student Academic Growth and Success



Collaborative Learning Teams (CLTs)



Student Academic Growth and Success

Supporting CLTs

- CLT conversations supporting components of the instructional playbook
- Elementary School: Eight schools receiving support with CLTs
- Middle School: Gunston grade 8, Jefferson grades 7 and 8, and Kenmore grade 8
- High School: Wakefield–biology, earth science, and chemistry

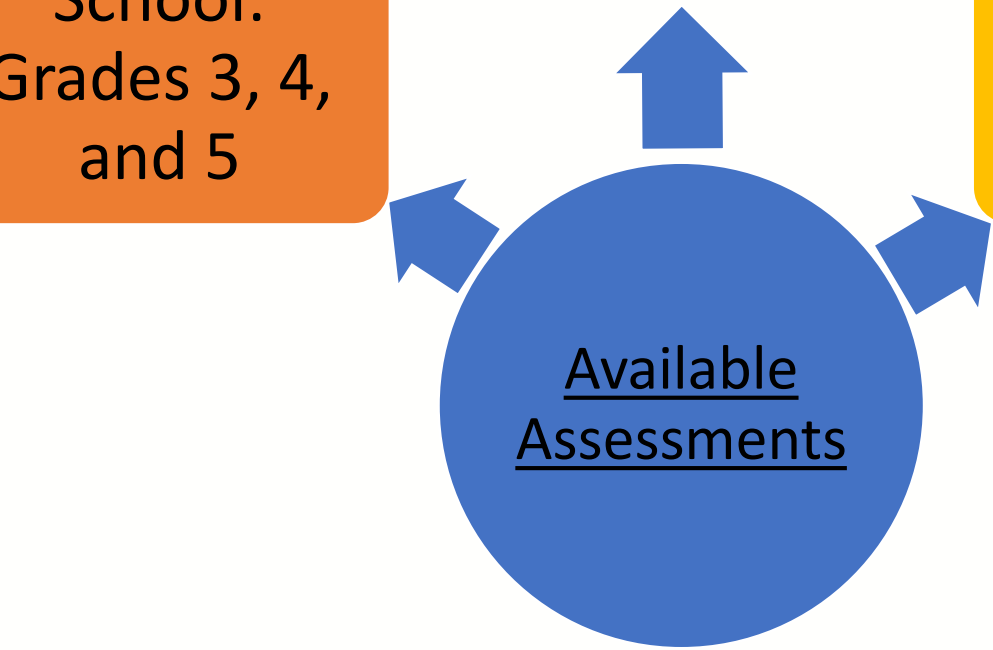
Science Unit Assessments (Mastery Connect)

Student Academic Growth and Success

Middle School: Grades 6, 7, and 8

Elementary School: Grades 3, 4, and 5

High School: Biology, Earth Science, and Chemistry



Classroom Walk-Throughs



Student Academic Growth and Success

Walk-Throughs and Teacher Support

Partners for Progress (PfP) walk-throughs at the elementary level

Science-specific walk-throughs at the secondary level

Individualized teacher support

Next Steps



Student Academic Growth and Success

Implementation of instructional playbook fidelity for science instruction through CLT and teacher support

Emphasis on Tier One instruction, including consistent and adequate elementary science instruction for all students

Laboratory safety training for school-based administrators

Arlington Public Schools

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APS Strategic Plan
2024-2030

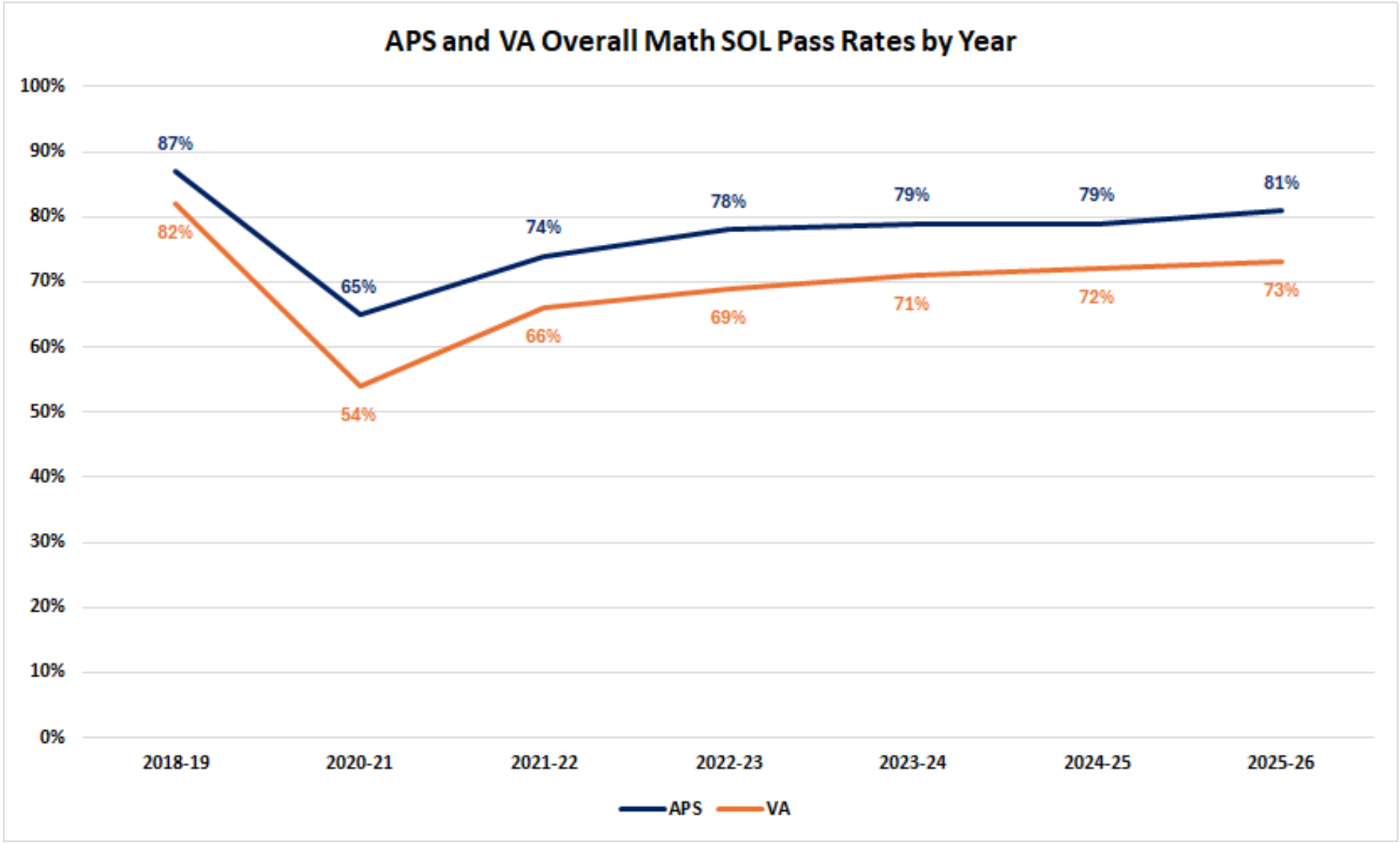


Mathematics

APS Overall Math SOL Performance Compared to the State

Student Academic Growth and Success

APS mathematics results outperformed the state by eight percentage points.



Academic Outcomes in Math by Select Subgroups

Student Academic Growth and Success

APS saw increases in subgroup achievement.

APS Mathematics 2022–2023 to 2025–2026 Overall SOL Performance by Subgroups					
Subject	**Subgroup**	**2022–2023 Pass Rate**	**2023–2024 Pass Rate**	**2024–2025 Pass Rate**	**2025–2026 Pass Rate**
Mathematics	SWD	52	51	48	49
Mathematics	ELs	46	45	47	48
Mathematics	Economically Disadvantaged	58	60	60	63

Science of Learning in Mathematics



Student Academic Growth and Success

The Instructional Hierarchy: An Empirically-Validated Learning Process

	ACQUISITION	FLUENCY	GENERALIZATION
Stage Goals	**Accuracy**: Perform skill accurately and understand concept(s)	**Efficiency**: Increase speed and accuracy	**Novel application:** Apply the skill flexibly in unstructured situations
Instructional Tactics	**Explicit instruction** (modeling, guided practice, immediate feedback)	**Maximum practice opportunities**, favoring independent and/or timed practice	**Novel problems and student-led tasks**; spiraling to ensure skill maintenance

Our Mathematics High-Quality Instructional Materials (HQIM)



Student Academic Growth and Success

- Two-Year Implementation Plan
- Responsive to Student Needs
- Educative; Guidance on Best Practices
- Evidence-Informed Instructional Design Features
- Implementation With Integrity, Not fidelity

Instructional Fidelity vs. Instructional Integrity



Student Academic Growth and Success

Fidelity

Implementing the lesson as written, with no adaptations based on the needs of the students in the classroom

Integrity

Maintain the goal of the lesson while being responsive to students.

Primary Adopted Mathematics Resources



Student Academic Growth and Success

- Bridges in Mathematics
- Number Corner
- Bridges Intervention
- Concept Quests
- Number Rack
- Family Support

mathspace

Closing Gaps Through Purposeful Practice



Student Academic Growth and Success

Homework provides additional opportunities for students to practice what they are learning and strengthen essential skills.

- Reinforces the learning
- Connects directly to classroom instruction and student needs
- Provides consistent opportunities to build fluency, confidence, and independence
- Is a meaningful practice and a greater opportunity for every student to succeed

From Resource Adoption to Instructional Change



Student Academic Growth and Success

Technical Change	Adaptive Change
Has a known solution, typically solved by expert or with existing processes	Requires shifts in beliefs, values, roles, or approaches; solutions that are not immediately clear
Example: Adopting high-quality mathematics instructional materials	*Example: Shifting instructional practice so teachers use those materials responsively, grounded in how students learn mathematics*

Job-Embedded Learning



Student Academic Growth and Success

- Professional Learning Progression
- Utilizing CLT Time
- Focusing CLTs on Student Learning and Outcomes
- Integrating Coaching Into Instructional Material Implementation
- **Unit and Lesson Internalization!**

When We Say Unit & Lesson Internalization. . .



Student Academic Growth and Success

We internalize units and lessons so we can ***pay close attention to what students are saying and doing***, allowing us to make ***informed instructional decisions that are responsive to their needs.***

- Do the math, anticipate student thinking, and plan for where students are now and what they need next.
- Choose meaningful questions to orchestrate student discussion.
- Identify and prepare needed materials.
- Incorporate lessons into teaching structures (reasoning routines, focus lesson, independent, small group).
- Identify critical moments in the lesson.
- Be mindful of time and lesson pacing.

Tools to Translate Our Work Into Classroom Practice

FIRST GRADE UNIT 2 INTERNALIZATION

PREVIEW THE UNIT: *What are students learning in this unit?*	
To understand the big ideas of the unit... • Read the first page of the unit introduction or view the unit overview video. To understand how this unit connects to previous and future learning... • Read the Skills & Concepts Across the Grade Levels section of the unit introduction.	The big mathematical ideas in this unit are _____. This unit connects to previous learning from _____. This unit prepares students to learn _____ during _____ (upcoming Bridges units or Number Corner months).

BIG MATHEMATICAL IDEAS

CONNECTIONS TO PREVIOUS LEARNING

CONNECTION TO FUTURE LEARNING

Lesson Internalization - CLT Plan	
About Mathspace in Mathematics • Mathspace is a Hiqh Quality Instructional Material (HQIM) and what is most important about this is that it's educative. It's not just a resource or a textbook. ○ We will learn together by working through problems, reading explanations, and making sense of math step by step. The lessons are designed to build understanding, encourage reasoning, and provide meaningful feedback. **Preparing Together** - Today we'll take a slightly different stance, where we will work on some language shifts - we're not planning, we're preparing together. • This is a preview of the process and how we might try to approach it across APS next year. • Us trying this together is going to be really helpful as coaches prepare for next year's work to support you all. **Our Focus:** We're going to *internalize* the lesson to pay more attention and be responsive to what our students are saying and doing in the classroom to allow us to respond to what our students need. **Teachers will know how to...** - Do the math, anticipate student thinking, plan for where students are now and what they need next - Choose meaningful questions to orchestrate student discussion - Orchestrate materials - Incorporate the lesson into math workshop structures - Mindful of time and lesson pacing	
Facilitator Goal: - Orienting teacher to each other's ideas - Leveraging teachers assets, strengths, and thinking towards a goal for teacher learning	
Lesson:	
Introduce or reiterate the focus of the PLC Discuss learning goals from the last session Listen for how teachers describe	**Focus:** **Last session's learning goal:**

Instructional Playbook and Mathematics Instruction

Student Academic Growth and Success

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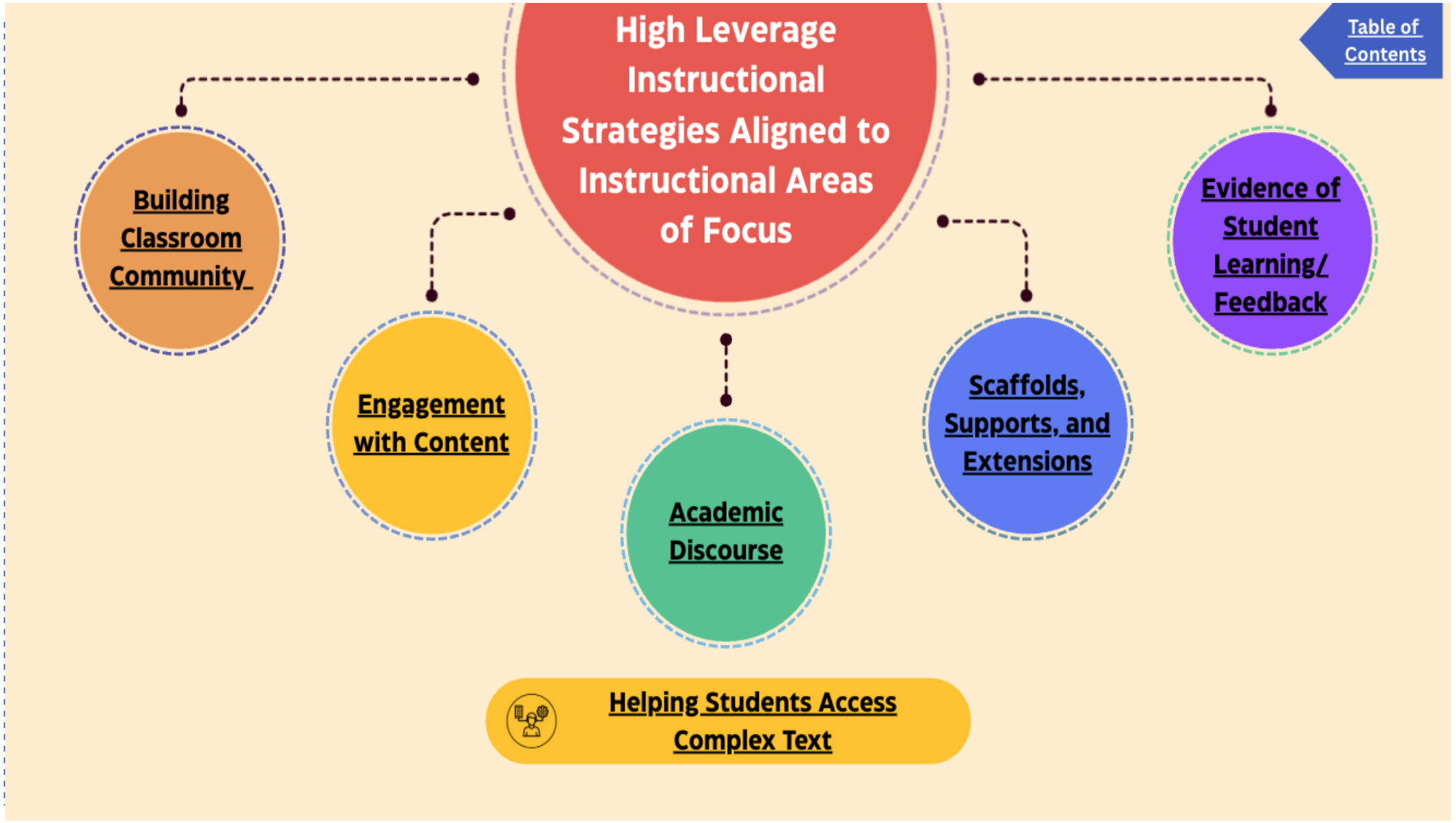
Student Academic Growth and Success

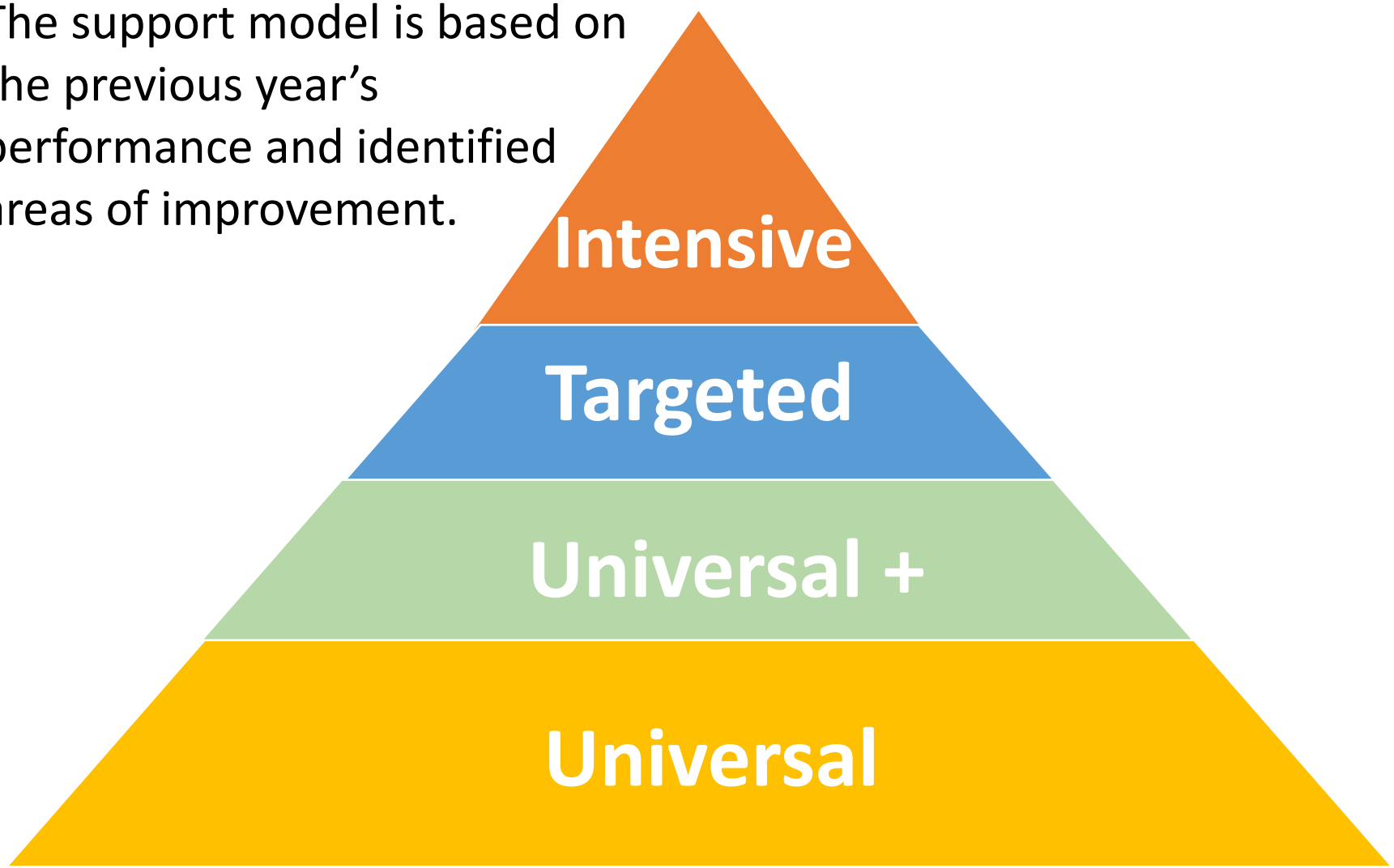


PfP Tiers of Support



Student Success & Well-Being

The support model is based on the previous year's performance and identified areas of improvement.



2026–2027 Intensive & Targeted Support Schools

Intensive	Targeted	Universal +
ELEMENTARY Abingdon Barrett Barcroft Carlin Springs Drew Hoffman-Boston Randolph **HIGH** Arlington Community High School (ACHS)	**ELEMENTARY** Long Branch **MIDDLE** Thomas Jefferson	**ELEMENTARY** Alice West Fleet (with SWD support) Innovation (with SWD support) **MIDDLE** Gunston (with Reading support) Kenmore (with Reading support) **HIGH** Wakefield (with 3E support) Langston (with 3E support)

Math Office Support to Schools

Carl Seward Mathematics Supervisor	Ashley Mistretta Elementary Mathematics Specialist	Leonda Archer Secondary Mathematics Specialist	Sukhdeep Kaur Secondary Mathematics Specialist
Arlington Science Focus Arlington Traditional Ashlawn Cardinal Claremont Drew Fleet Glebe Innovation Jamestown Montessori Nottingham Taylor	Abingdon Barcroft Barrett Campbell Carlin Springs Discovery Hoffman-Boston Key Long Branch Oakridge Randolph Tuckahoe	ACHS Grace Hopper Hamm Gunston Jefferson Yorktown	H-B Woodlawn Kenmore Swanson Wakefield Washington-Liberty Williamsburg

Math Office Support for PfP Schools



Student Academic Growth and Success

- Support action planning with clearer monitoring for implementation and strategies.
- Prioritize and support implementation of high-leverage instructional strategies.
- Develop and provide a Unit Benchmark Assessment.
- Provide differentiated support with lead teachers and coaches.
- Facilitate elementary-to-middle school vertical articulation opportunities.

New Cut Scores Are Here!

2026–2027
Math SOL Cut Scores

Pass/Approaching: Temporary Transition Level

- This range was added temporarily during the multiyear phase-in to higher cut scores.
- Students in this range are considered to have **passed** for graduation requirements and school accountability.
- **Pass/Approaching does not indicate grade-level mastery** of the more rigorous standards.
- Only **Pass/Proficient** and **Pass/Advanced** indicate demonstrated grade-level mastery.

School Year 2026 – 2027 Proficiency Implementation Plan

Reading and Math

Virginia Department of Education

Reading Assessment Cut Scores: 2026 – 2027

Grade Level	Fail/Below Basic	Fail/Basic	Pass/Approaching	Pass/Proficient	Pass/Advanced
Grade 3	0-408	409-417	**418***-443	444-501	502-600
Grade 4	0-414	415-425	**426***-450	451-513	514-600
Grade 5	0-401	402-413	**414***-445	446-509	510-600
Grade 6	0-389	390-412	**413***-448	449-514	515-600
Grade 7	0-375	376-412	**413***-448	449-510	511-600
Grade 8	0-385	386-412	**413***-448	449-515	516-600

End of Course Reading Assessment Cut Scores: 2026 – 2027

Grade Level	Fail/Does Not Meet	Pass/Approaching	Pass/Proficient	Pass/Advanced
EOC Reading	0-399	—	**400***-499	500-600

Math Assessment Cut Scores: 2026 – 2027

Grade Level	Fail/Below Basic	Fail/Basic	Pass/Approaching	Pass/Proficient	Pass/Advanced
Grade 3	0-375	376-409	**410***-442	443-520	521-600
Grade 4	0-383	384-410	**411***-444	445-517	518-600
Grade 5	0-378	379-410	**411***-444	445-510	511-600
Grade 6	0-379	380-407	**408***-432	433-506	507-600
Grade 7	0-387	388-407	**408***-429	430-507	508-600
Grade 8	0-387	388-407	**408***-429	430-502	503-600

End of Course Math Assessment Cut Scores: 2026 – 2027

Grade Level	Fail/Does Not Meet	Pass/Approaching	Pass/Proficient	Pass/Advanced
Algebra I	0-412	**413***-452	453-517	518-600
Geometry	0-412	**413***-451	452-509	510-600
Algebra II	0-410	**411***-442	443-504	505-600

*Note: Scale score in **bold with asterisks(*)** indicates the minimum score considered "passing" in the 2026-2027 school year. The dashes (—) indicate data is not applicable.*

A Few Examples of Educators Learning Together



Student Academic Growth and Success

August 2026

APS Administrative Conference

Preservice Professional Learning on HQIM for Teachers and Math Coaches

October 2026

APS Day of Learning

September 2026

School-Based Administrators

Math Coaches

Advanced Academics Coaches

Instructional Technology Coordinators

Specially Designed Instruction Specialists

December 2026

Early Release Time for Learning

Our Work Moving Forward



Student Academic Growth and Success

Continued Professional Learning Around:

- Our HQIM (Bridges and Mathspace)
- Science of Learning (Instructional Hierarchy)
- Unit and Lesson Internalization

Progress Monitoring

- Review classroom, school, and division-wide implementation of resources and learning during Year 1 of our Two-Year Implementation.

Where We Are. . .



Student Academic Growth and Success

Using what research tells us about how students learn to inform how we design, support, and improve mathematics instruction for ALL students in Arlington Public Schools

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