Student Success in Mathematics Partnership Meeting

January 12, 2021

Pam Buffington
Partnership Lead

Ryoko Yamaguchi
Research Lead

Laura Kassner
Partnership Liaison

Jill Neumayer DePiper
Partnership Staff

IES Institute of Education Sciences

This presentation was prepared for the Institute of Education Sciences (IES) under Contract ED-IES-17-C-0004 by Regional Educational Laboratory Appalachia administered by SRI International. The content does not necessarily reflect the views or policies of IES or the U.S. Department of Education nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.

REL Appalachia at SRI International

Welcome

Laura Kassner
Partnership Liaison

Student Success in Mathematics partnership: REL AP staff

Pam Buffington
Partnership Lead

Ryoko Yamaguchi
Research Lead

Jill Neumayer DePiper
Partnership Staff

Laura Kassner
Partnership Liaison

Anna Chiang
Partnership Liaison

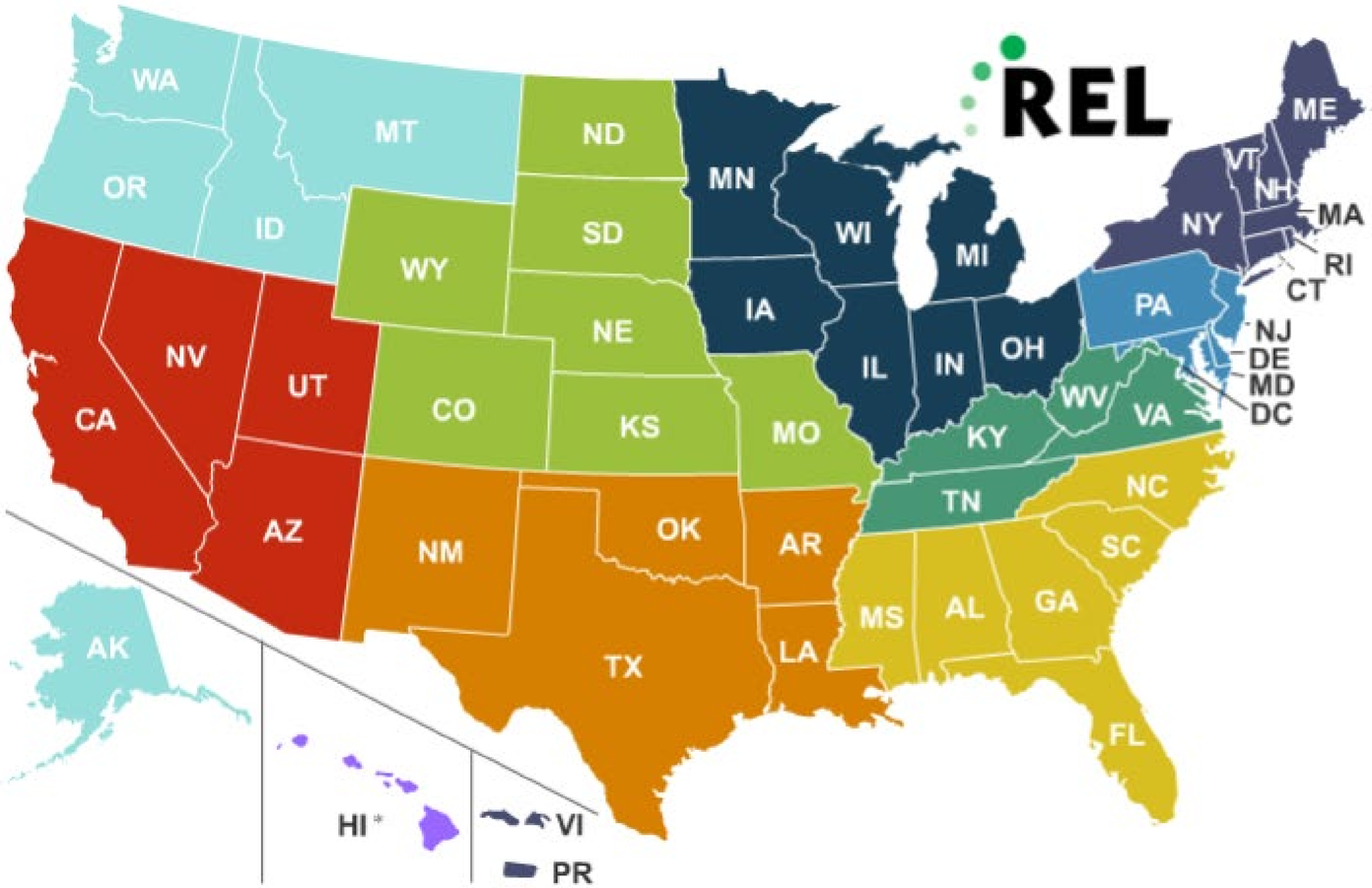
Agenda

- Welcome
- Student Success in Mathematics (SSM) partnership goals and overview of activities
- Overview of mathematics course-taking patterns coaching project
- Next steps

Meeting objectives

- Review SSM partnership logic model
- Identify and share associated resources and products
- Share how the partnership activities informed the work in participating school divisions
- Review "Algebra I and college preparatory diploma outcomes among Virginia students who completed Algebra I in grades 7–9" study results
- Provide an overview of mathematics course-taking patterns coaching project

The Regional Educational Laboratories



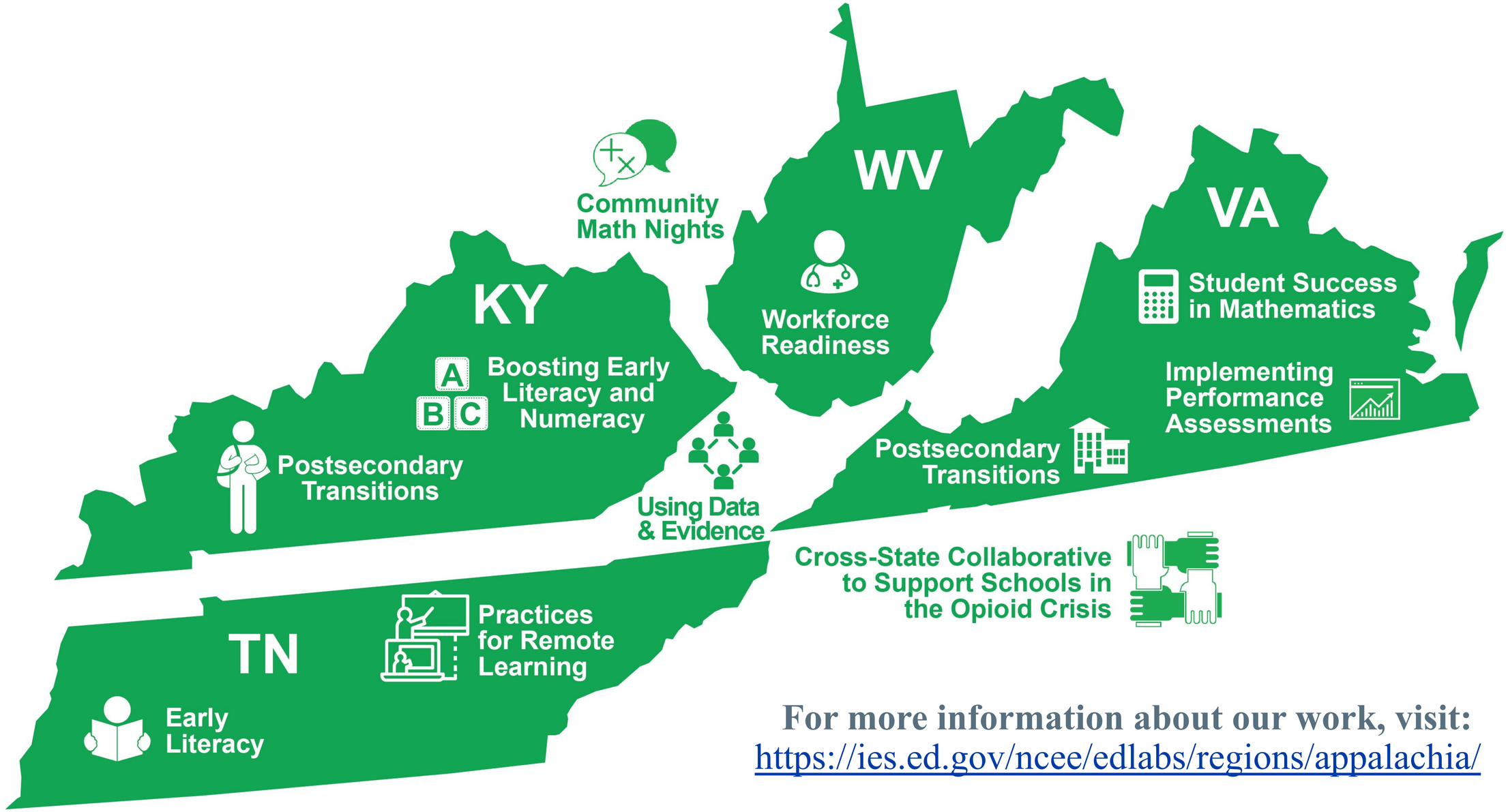
Appalachia
Central
Mid-Atlantic
Midwest
NE & Islands
NW
Pacific*
SE
SW
West

* The Pacific Region contains Hawaii pictured on the map and American Samoa, the Commonwealth of the Northern Mariana Islands, the Federated States of Micronesia (Chuuk, Kosrae, Pohnpei, & Yap), Guam, the Republic of the Marshall Islands, & the Republic of Palau not pictured on the map

The **10 RELs** work in partnership with stakeholders to **support a more evidence-based education system.**

Administered by the U.S. Department of Education, Institute of Education Sciences (IES)

Find us on the web! **https://ies.ed.gov/ncee/edlabs/regions/appalachia/**

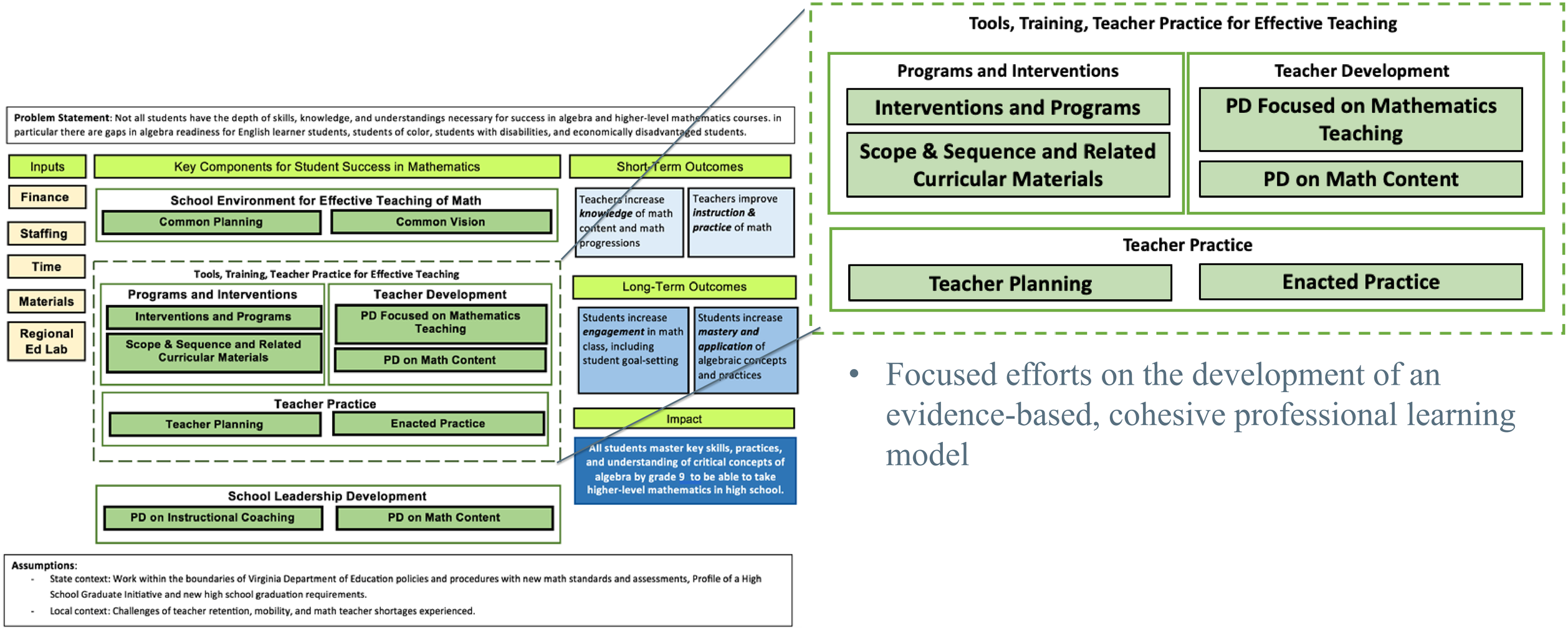


For more information about our work, visit:
https://ies.ed.gov/ncee/edlabs/regions/appalachia/

Student Success in Mathematics (SSM) Partnership Goals and Overview of Activities

Pam Buffington
Partnership Lead

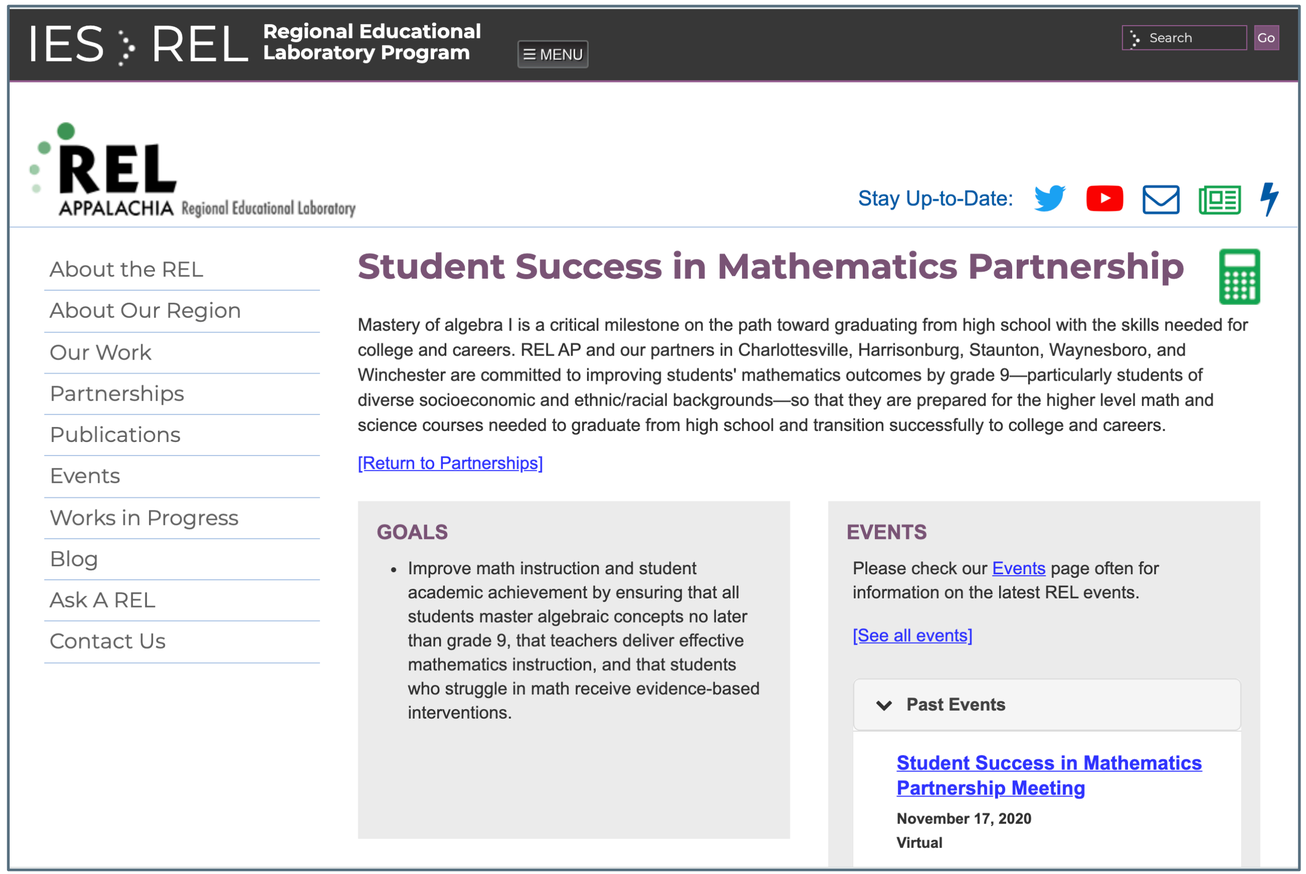
SSM Partnership logic model



- Focused efforts on the development of an evidence-based, cohesive professional learning model

Review and reflections of the SSM partnership activities

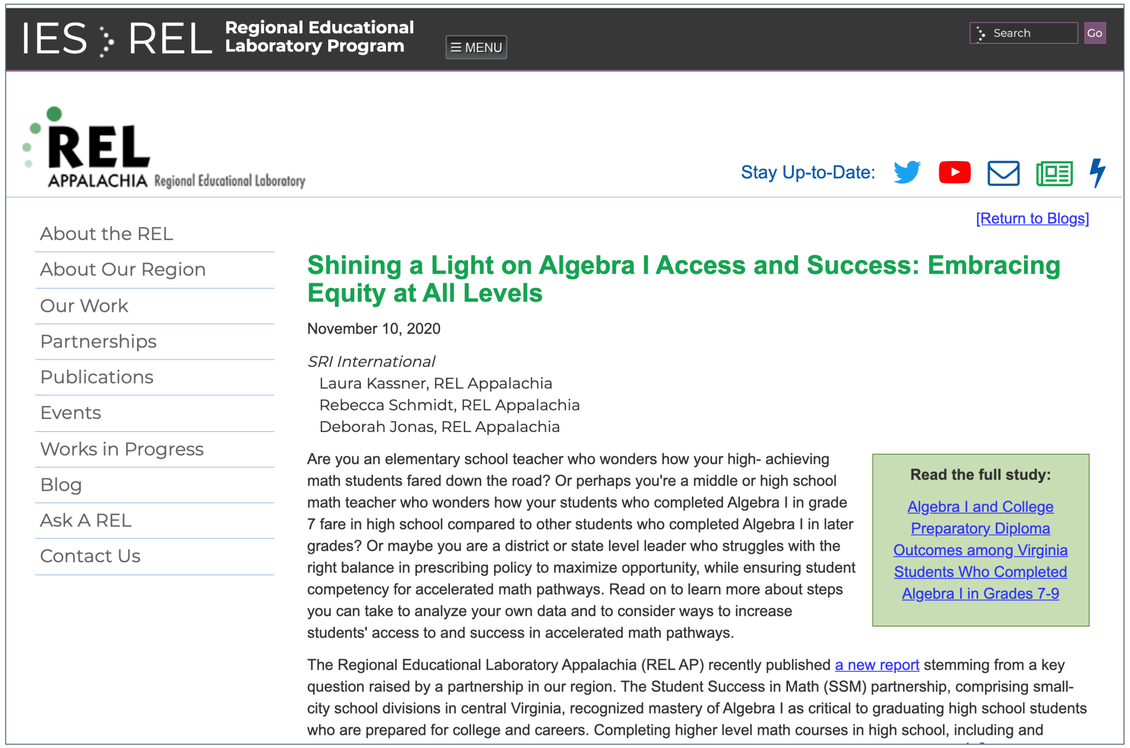
- Webinars
- Trainings
- Research
- Coaching
- Networking
- Strategy sharing



Sample SSM Partnership activities

Shining a Light on Algebra I Access and Success: Embracing Equity at All Levels blog

- Algebra I and College Preparatory Diploma Outcomes among Virginia Students Who Completed Algebra I in Grades 7–9
- Mathematics Instruction with an Equity Lens
- Algebra for All! Preparing Students for Success
- Student Success in Mathematics Partnership Meeting
- Algebra for All: Focus on Visual Representations


IES REL Regional Educational Laboratory Program ☰ MENU Search Go

REL APPALACHIA Regional Educational Laboratory

Stay Up-to-Date:

[Return to Blogs]

About the REL
About Our Region
Our Work
Partnerships
Publications
Events
Works in Progress
Blog
Ask A REL
Contact Us

Shining a Light on Algebra I Access and Success: Embracing Equity at All Levels

November 10, 2020

SRI International
Laura Kassner, REL Appalachia
Rebecca Schmidt, REL Appalachia
Deborah Jonas, REL Appalachia

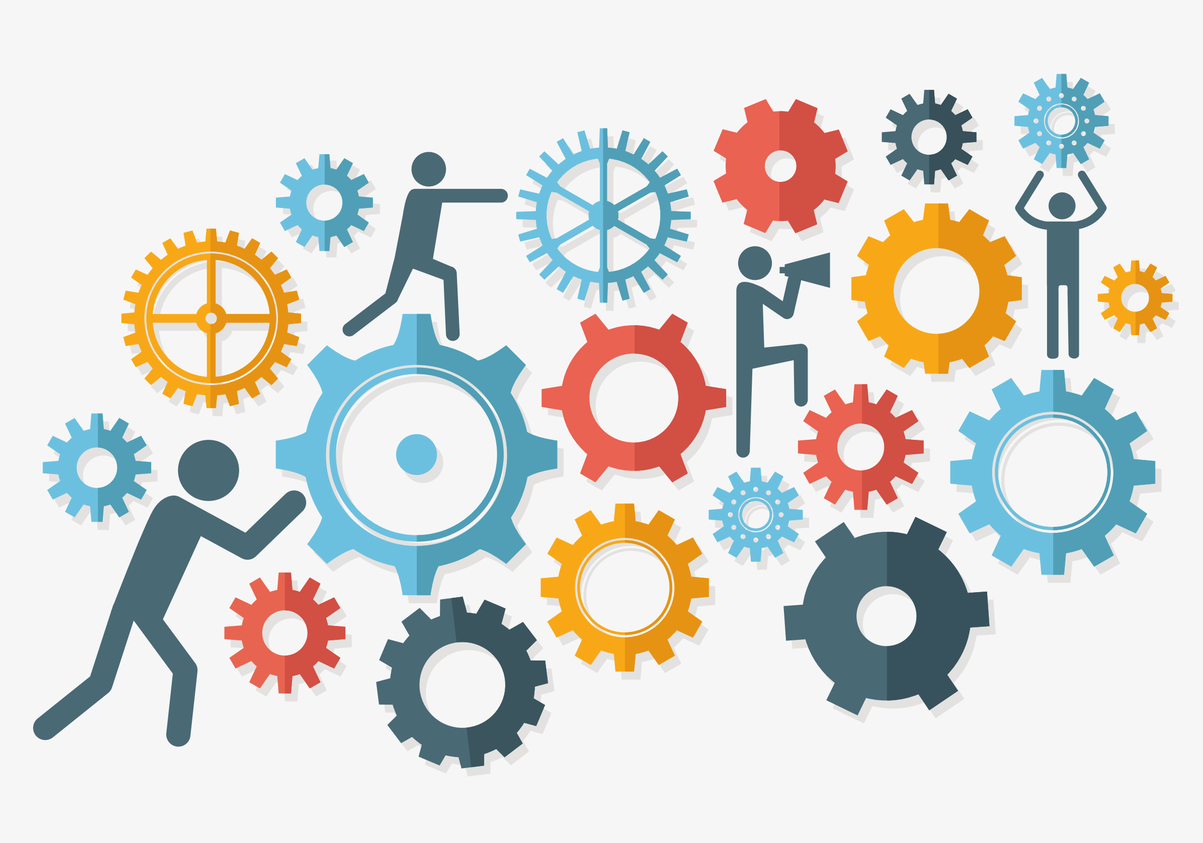
Are you an elementary school teacher who wonders how your high- achieving math students fared down the road? Or perhaps you're a middle or high school math teacher who wonders how your students who completed Algebra I in grade 7 fare in high school compared to other students who completed Algebra I in later grades? Or maybe you are a district or state level leader who struggles with the right balance in prescribing policy to maximize opportunity, while ensuring student competency for accelerated math pathways. Read on to learn more about steps you can take to analyze your own data and to consider ways to increase students' access to and success in accelerated math pathways.

Read the full study:
Algebra I and College Preparatory Diploma Outcomes among Virginia Students Who Completed Algebra I in Grades 7-9

The Regional Educational Laboratory Appalachia (REL AP) recently published a new report stemming from a key question raised by a partnership in our region. The Student Success in Math (SSM) partnership, comprising small-city school divisions in central Virginia, recognized mastery of Algebra I as critical to graduating high school students who are prepared for college and careers. Completing higher level math courses in high school, including and

Student Success in Mathematics partnership sharing

- Choose a SSMP project, activity, or product that you have found beneficial.
- Share how it informed work in your school division.

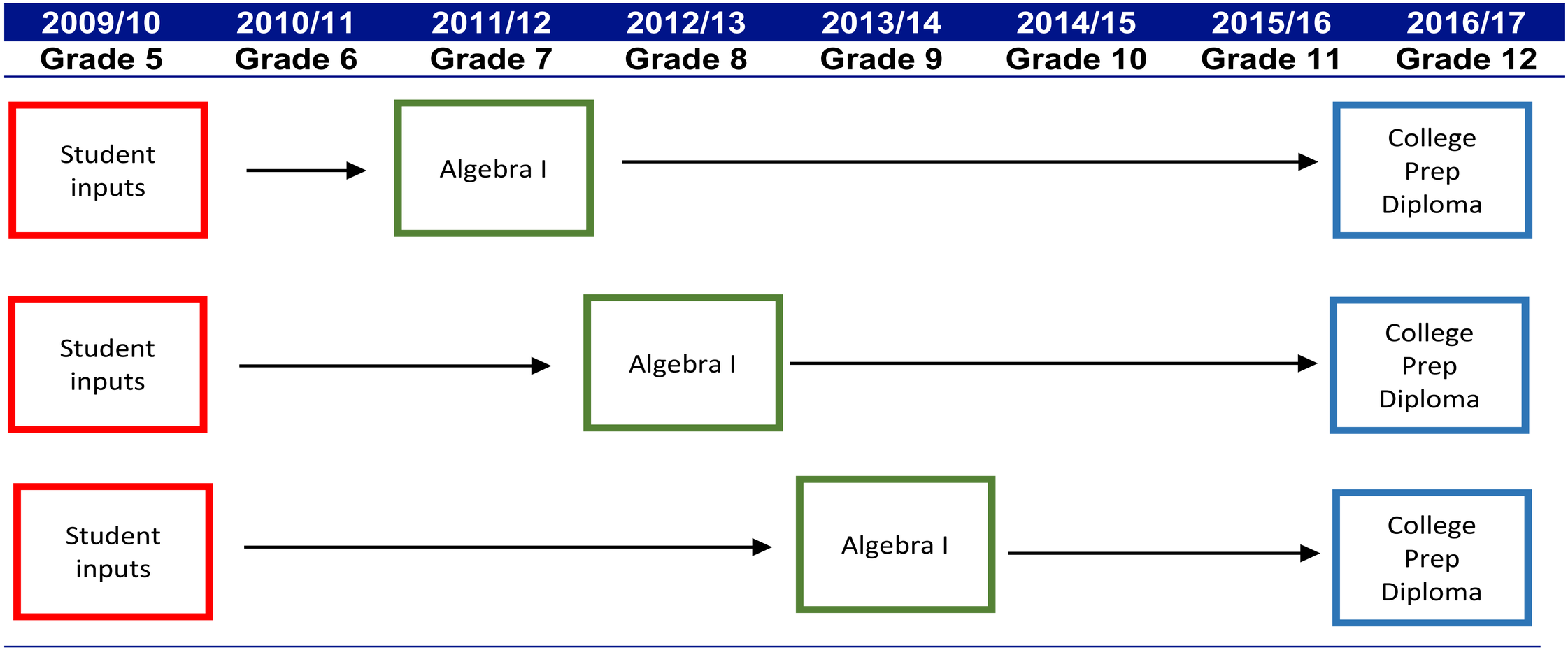


Overview of Mathematics Coursetaking Patterns Coaching Project

Ryoko Yamaguchi
Research Lead

Study overview: Algebra I and college preparatory diploma outcomes among Virginia students who completed Algebra I in grades 7–9

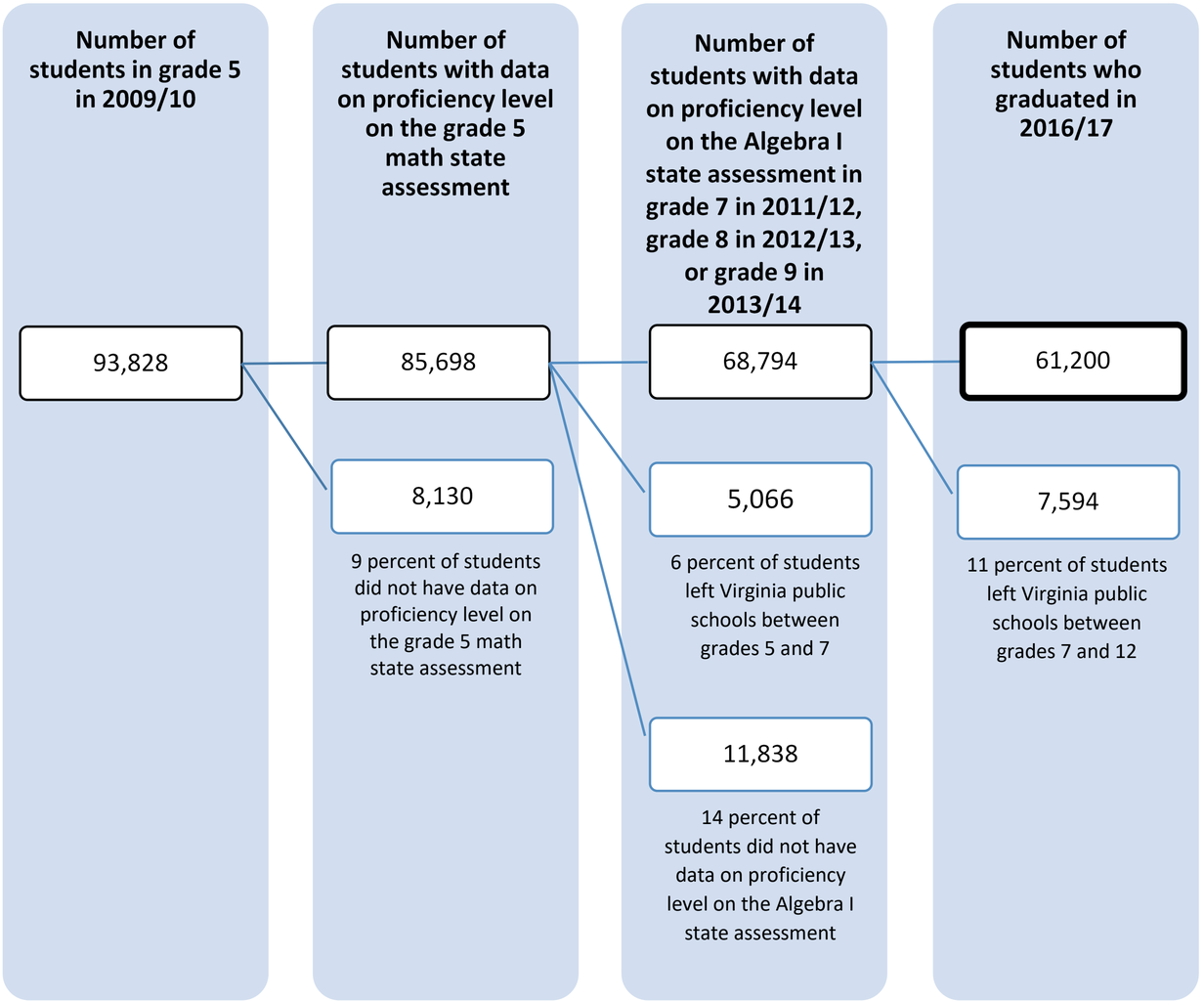
Description of the Algebra I study



Study population from the Virginia Longitudinal Data System

Graduating cohort of 2017

- All students: 61,200
- Economically disadvantaged (ED) students: 22,196 (36 percent)
- English learner (EL) students: 3,108 (5 percent)




JEOPARDY!
JEOPARDY!
JEOPARDY!
JEOPARDY!
JEOPARDY!
JEOPARDY!
JEOPARDY!
JEOPARDY!
JEOPARDY!
LUNCH

Completed Algebra I in grade 7	Completed Algebra I in grade 8	Completed Algebra I in grade 9
$200	$200	$200
$400	$400	$400
$600	$600	$600

Among ___ students who scored Advanced Proficient in math in grade 5…

Only 18 percent completed Algebra I in grade 7.

Answer

Economically disadvantaged students

Among students who scored Advanced Proficient in grade 5 and completed Algebra I in grade 7…

80 percent of ___ students earned college preparatory diploma.

Answer

All students

Among students who scored Advanced Proficient in grade 5 and completed Algebra I in grade 7…

62 percent of ___ students earned a college preparatory diploma.

Answer

Economically disadvantaged students

Among students who scored Advanced Proficient in grade 5 and completed Algebra I in grade 8…

75 percent of ___ students earned a college preparatory diploma.

Answer

All students

Among students who scored Advanced Proficient in grade 5 and completed Algebra I in grade 8…

89 percent of ___ students passed the Algebra I assessment (the same percentage as taking Algebra I in grade 7).

Answer

All students

Among students who scored Advanced Proficient in grade 5 and completed Algebra I in grade 8…

60 percent of ___ students earned a college preparatory diploma.

Answer

Economically disadvantaged students

Among ___ students who scored Advanced Proficient in grade 5…

Only 42 percent completed Algebra I in grade 9.

Answer

English learner students

Among students who scored Advanced Proficient in grade 5 and completed Algebra I in grade 9…

44 percent of ___ students earned a college preparatory diploma.

Answer

All students

Among students who scored Advanced Proficient in grade 5 and completed Algebra I in grade 9…

33 percent of ___ students earned a college preparatory diploma.

Answer

Economically disadvantaged students

Discussions informed by the results

- What are the **implications** of these statewide results for your local school division?
- What do you know about the **trajectory** of grade 5 students in your local school division?
- What are the criteria for student **enrollment** in Algebra 1 courses in your school division?

Among students who scored at the advanced proficient level in grade 5 math, the percentages who passed Algebra I and who earned a college preparatory diploma were lower for economically disadvantaged students than for the overall study population, 2009/10–2016/17

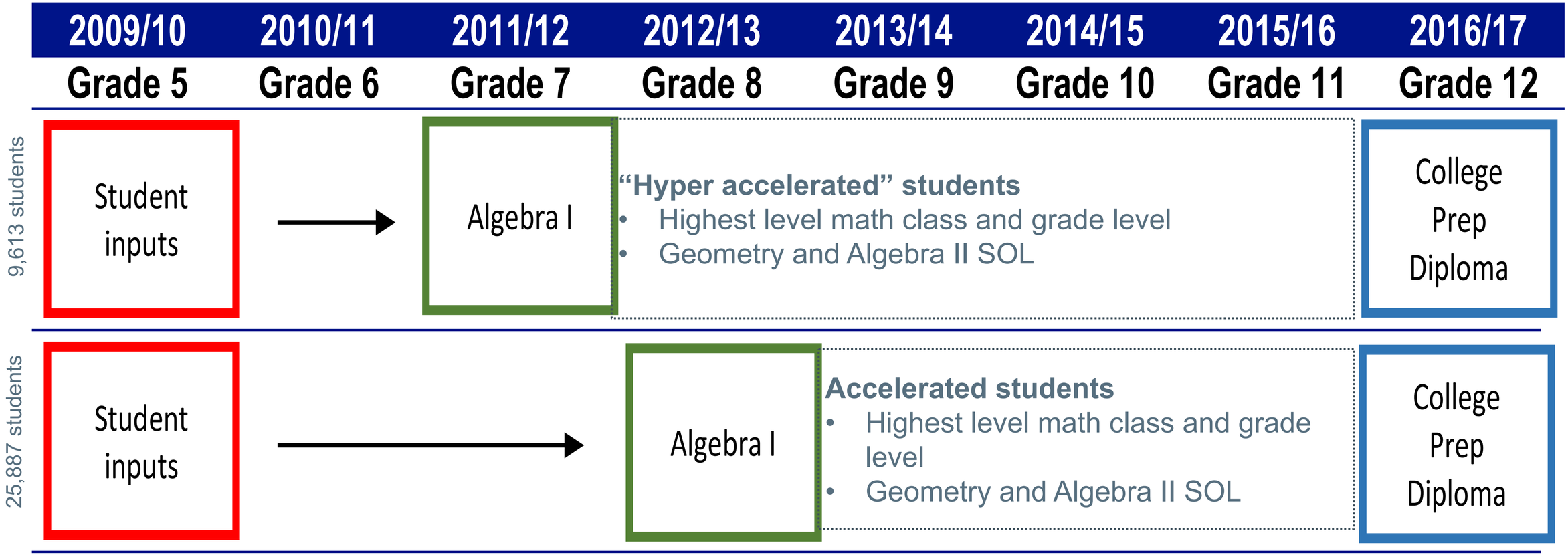
Grade level of Algebra I completion	Passed Algebra I	Earned college preparatory diploma
All students who scored advanced proficient in grade 5 math		
Grade 7 (*n* = 8,928)	90	80
Grade 8 (*n* = 19,320)	89	75
Grade 9 (*n* = 9,650)	76	44
All economically disadvantaged students who scored advanced proficient in grade 5 math		
Grade 7 (*n* = 1,983)	80	62
Grade 8 (*n* = 4,916)	81	60
Grade 9 (*n* = 3,976)	71	33

Source: Authors' analysis using data from the Virginia Longitudinal Data System, 2009/10–2016/17.

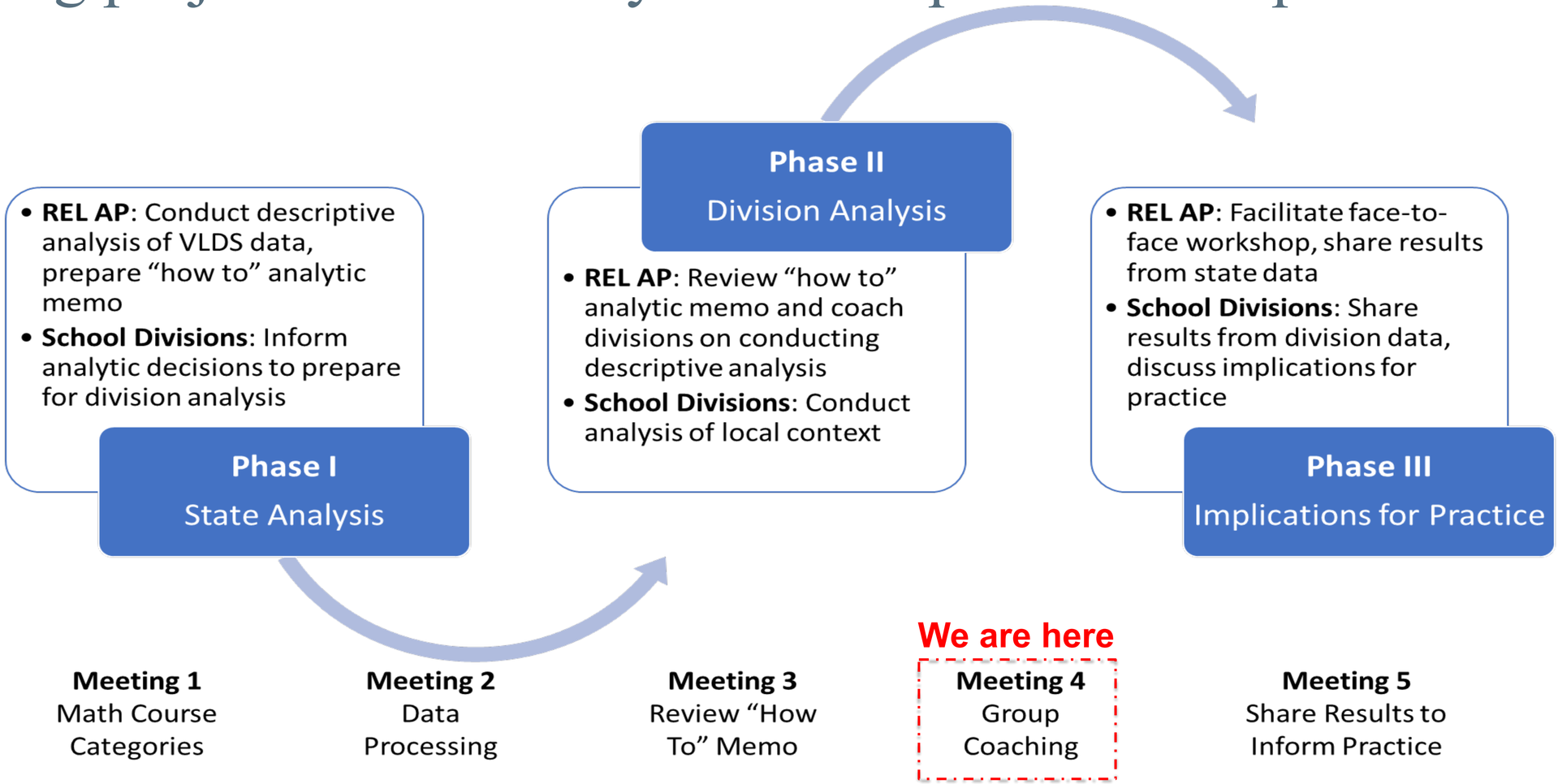
Access to full report: https://ies.ed.gov/ncee/edlabs/projects/project.asp?projectID=4577

Next steps: Building capacity of school divisions to use student data to inform their practice

Building capacity of school divisions to use their data: School division interest to focus on "hyper acceleration" of Algebra I

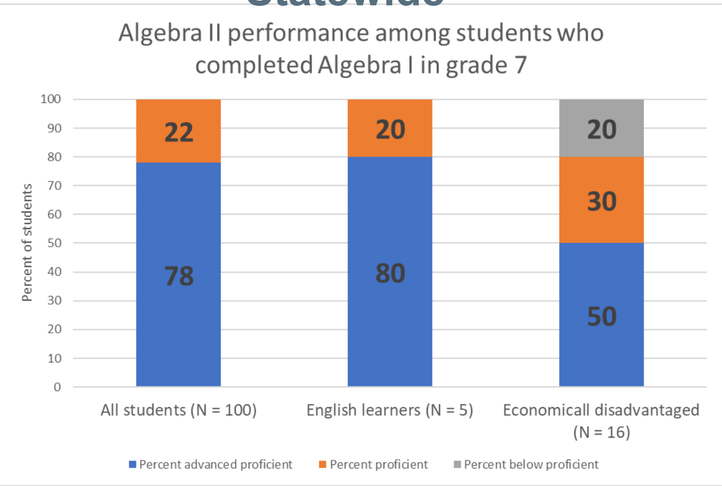


Building capacity of school divisions to use their data: Coaching project on data analysis and implications to practice

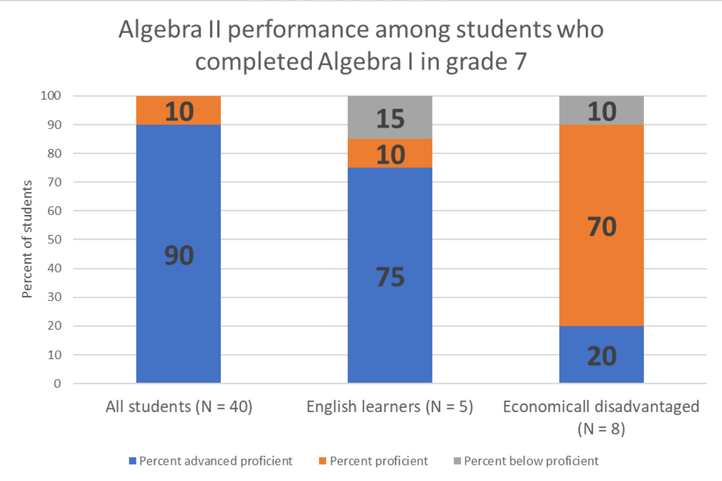


Sharing results to inform practice

Statewide



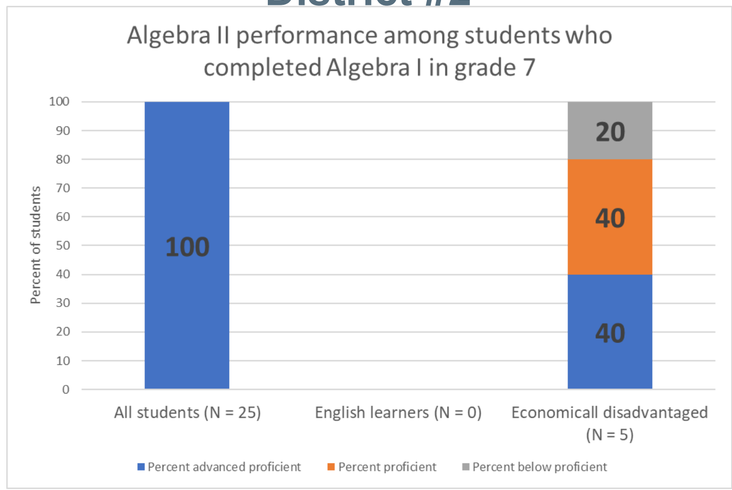
District #1



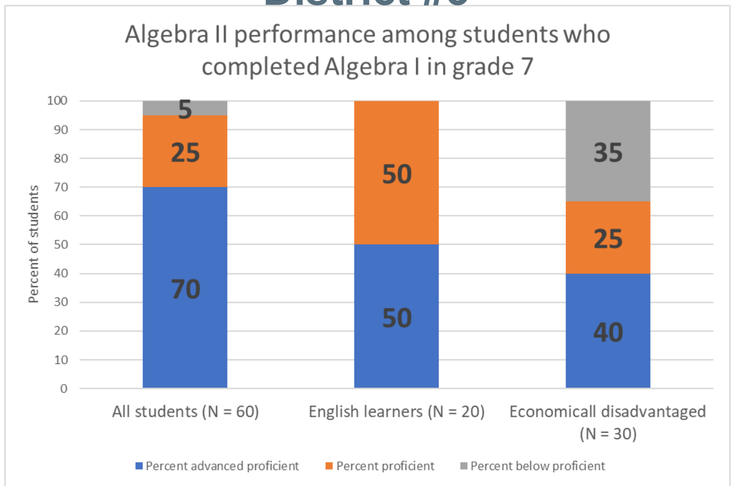
Facilitated discussion to:

- Share results from the state and each school division.
- Ponder about access and opportunities of students who complete Algebra I in grade 7.
- Brainstorm ways to improve practices and policies for equitable student outcomes.

District #2



District #3



Next Steps

Pam Buffington
Partnership Lead

Next steps

- Questions/concerns
- Next meeting

Contact us

REL Appalachia Student Success in Mathematics Partnership Team

Dr. Pamela J. Buffington pbuffington@edc.org

Dr. Ryoko Yamaguchi ryamaguchi@plusalpharesearch.com

Dr. Jill Neumayer DePiper jdepiper@edc.org

Dr. Laura Kassner laura.kassner@sri.com

Anna Chiang anna.chiang@sri.com

Contact us

https://ies.ed.gov/ncee/edlabs/regions/appalachia

RELAppalachia@sri.com

@REL_Appalachia

References

Loucks-Horsley, S., Stiles, K. E., Mundry, S., Love, N., & Hewson, P. W. (2010). *Designing professional development for teachers of science and mathematics.* Corwin.

National Council of Teachers of Mathematics (NCTM). (2014). *Principles to action: Ensuring mathematical success for all*. NCTM.