

Algebra I and College Preparatory Diploma Outcomes Among Virginia Students Who Completed Algebra I in Grades 7–9: Digging Deeper into Local Data

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Welcome and introductions



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Agenda



Time	Agenda item
11:00 – 11:10 a.m.	Welcome and introductions
11:10 – 11:25 a.m.	Results from the Virginia Longitudinal Data System: Algebra I and college preparatory diploma outcomes
11:25 – 11:45 a.m.	Digging deeper into local data: Algebra I in grade 7 <ul style="list-style-type: none">• Staunton City Public Schools• Harrisonburg City Public Schools
11:45 – 12:00 p.m.	Implications for policy and practice

REL Appalachia Student Success in Mathematics partnership staff



Ryoko Yamaguchi
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Research Staff

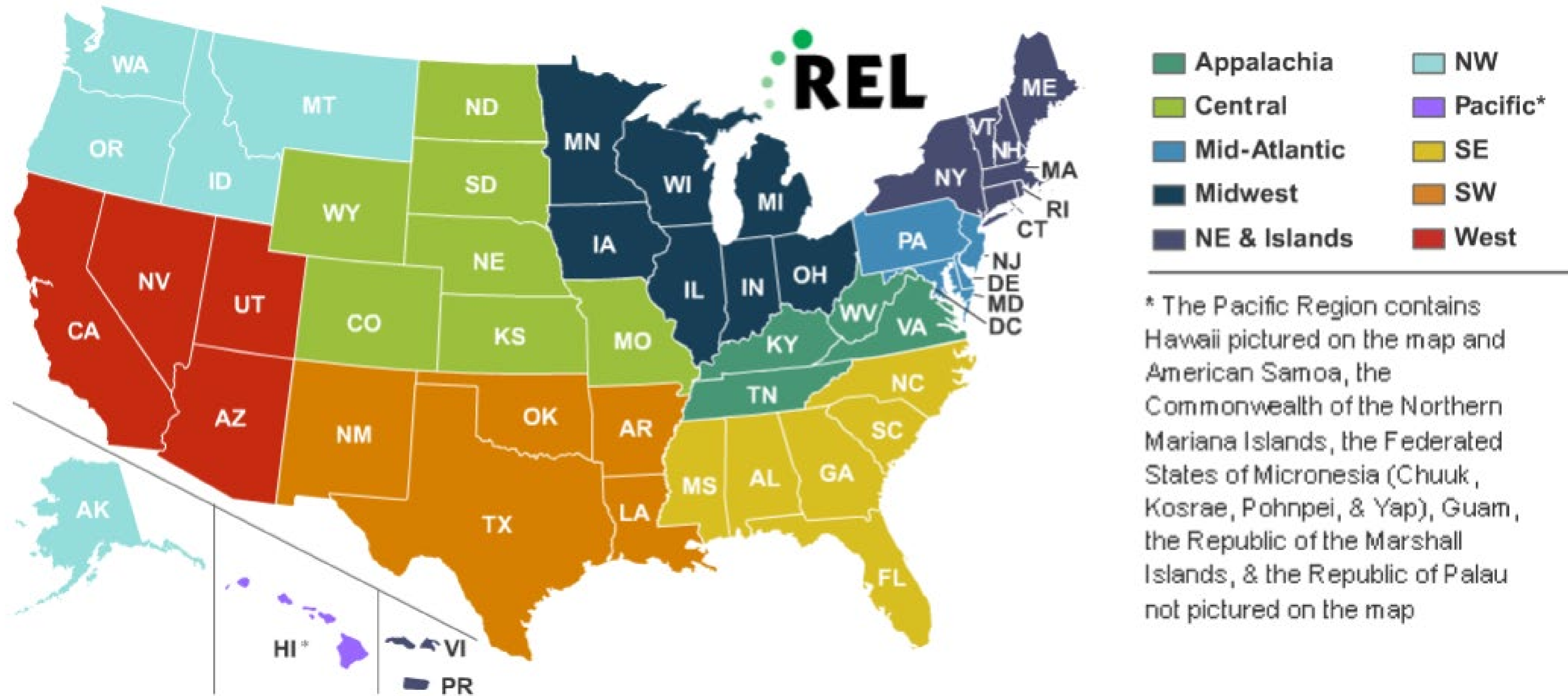


Brian Nussbaum
Partnership Member



Stephanie Haskins
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The Regional Educational Laboratories



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At SRI International

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U.S. DEPARTMENT OF EDUCATION


What Tools Have States Developed or Adapted to Assess Schools' Implementation of a Multi-Tiered System of Supports/Response to Intervention Framework?

A Publication of the National Center for Education Evaluation and Regional Assistance at IES




Supporting Your Child in Developing Math Skills For Future Success

Math success opens doors to college and careers.
The technical and professional jobs of the future demand more mathematical knowledge and problem solving skills.



- Children who believe they can be successful in math are more willing to put in effort, even when they struggle, and this results in better performance.¹
- Success in elementary school math predicts future achievement in middle and high school math and other subjects.^{2,3}
- Students who complete higher-level math in high school earn higher incomes in the future.⁴
- The number of STEM (science, technology, engineering, and mathematics) jobs is growing and half of all STEM jobs are available to workers without a four-year college degree. STEM jobs pay 10% more than other jobs available to these workers.⁵

Families can support children in developing math skills for the future by⁶:

- praising effort and modeling positive math attitudes.
- encouraging children to seek help and try new strategies when they are stuck.
- confronting stereotypes about who is good at math.

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¹Boaler, J. (2015). Mathematical mindsets: Unleashing students' potential through creative math, inspiring messages and innovative teaching. San Francisco, CA: John Wiley & Sons.

²Ciacciona, A., & Engel, M. (2012). How important is where you start? Early mathematics knowledge and later school success. *Teachers College Record*, 114(6), 1-20. <http://www.tcrecord.org/Default.asp?id=1020177>

³Singler, R. S., Dunson, G. J., Davis-Kean, P. E., Duckworth, K., Ciacciona, A., Engel, M., ... & Chou, M. (2012). Early proficiencies of high school mathematics achievers. *Psychological Science*, 23(7), 671-677.

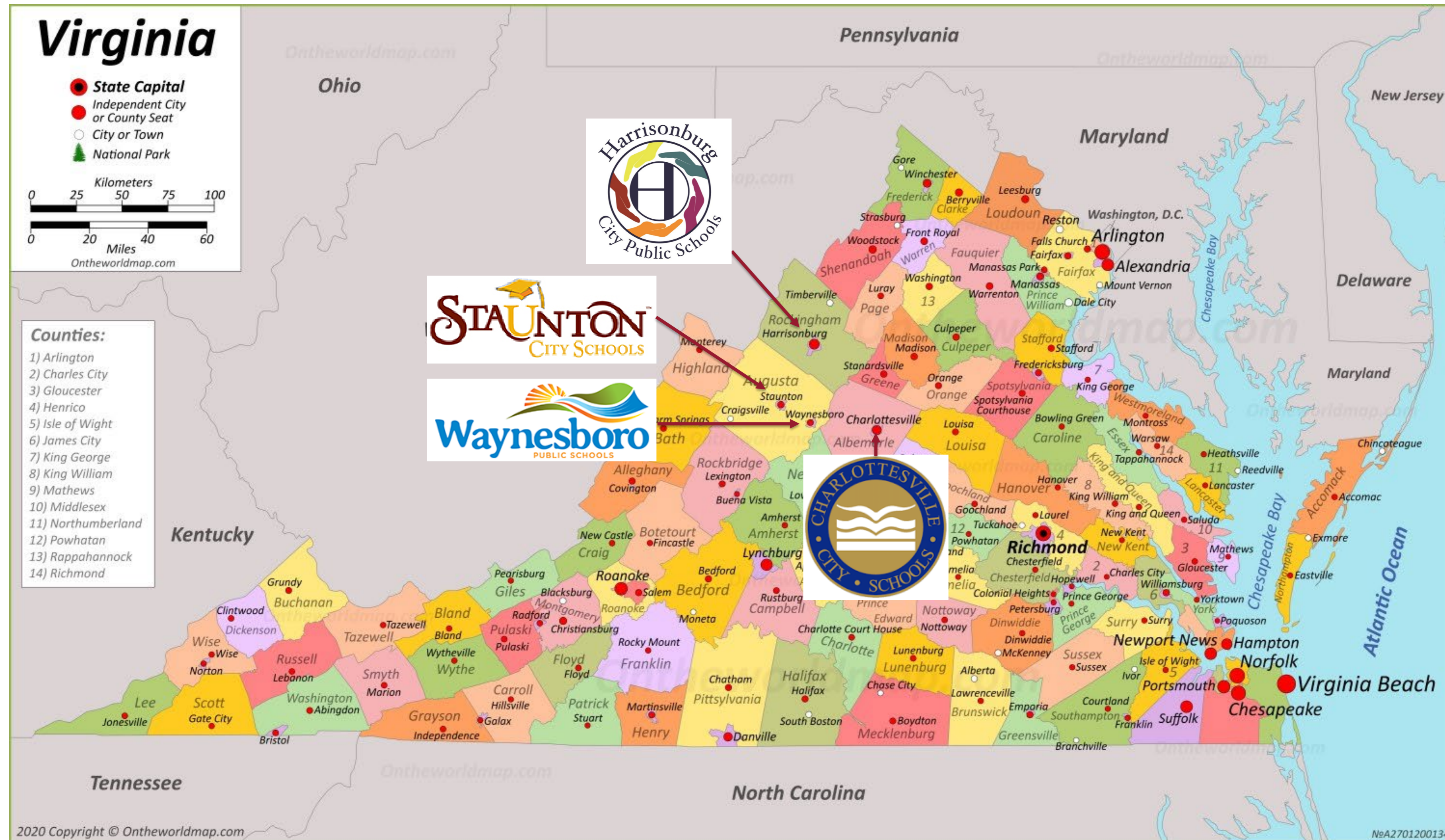
⁴Achieve, Inc. (2004). *Closing the expectations gap: An annual 50-state progress report on the alignment of high school policies with the demands of college and work*. Washington, DC: Author.

⁵Rothwell, J. (2013). *The Hidden STEM Economy*. Brookings Institution: Washington, DC.

⁶Espinosa, J. L. (2011). School, family, and community partnerships (1st ed.). Boulder, CO: Westview Press.

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Student Success in Mathematics partnership: Virginia school divisions



Results from the Virginia Longitudinal Data System: Algebra I and college preparatory diploma outcomes



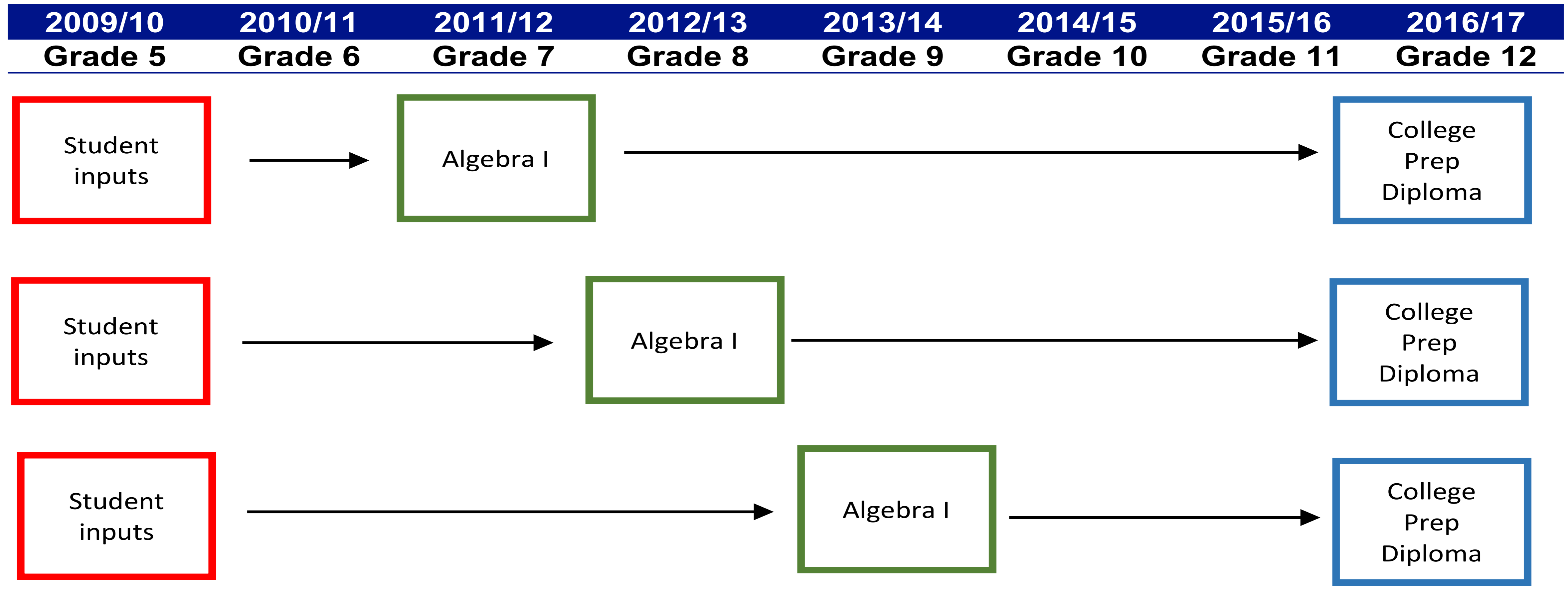
Rebecca Schmidt

Goals of the study



- Goal 1: Understanding the **characteristics** of students in different math coursetaking pathways of Algebra I by grade 9.
- Goal 2: Understanding the **outcomes** of students in different math coursetaking pathways of Algebra I by grade 9.

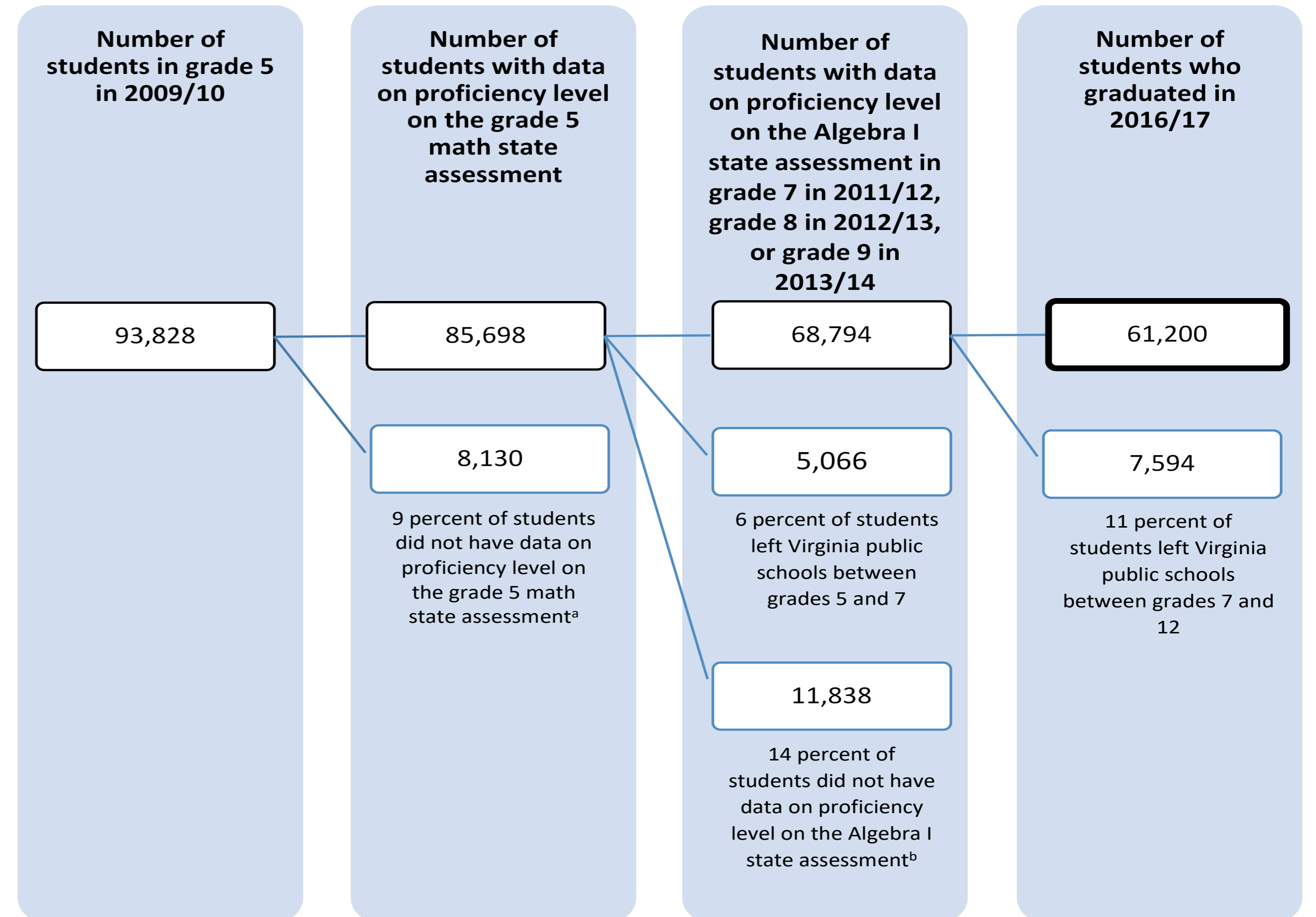
Description of the study



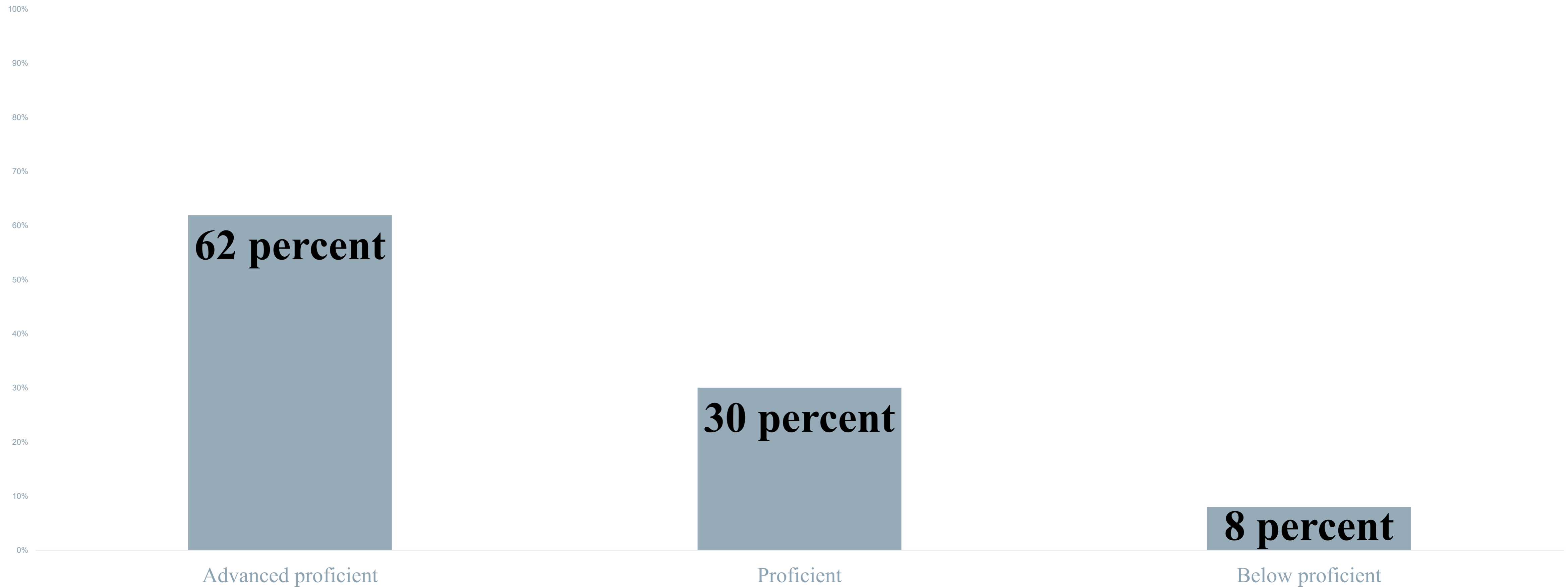
Study population from the Virginia Longitudinal Data System

Graduating cohort of 2017

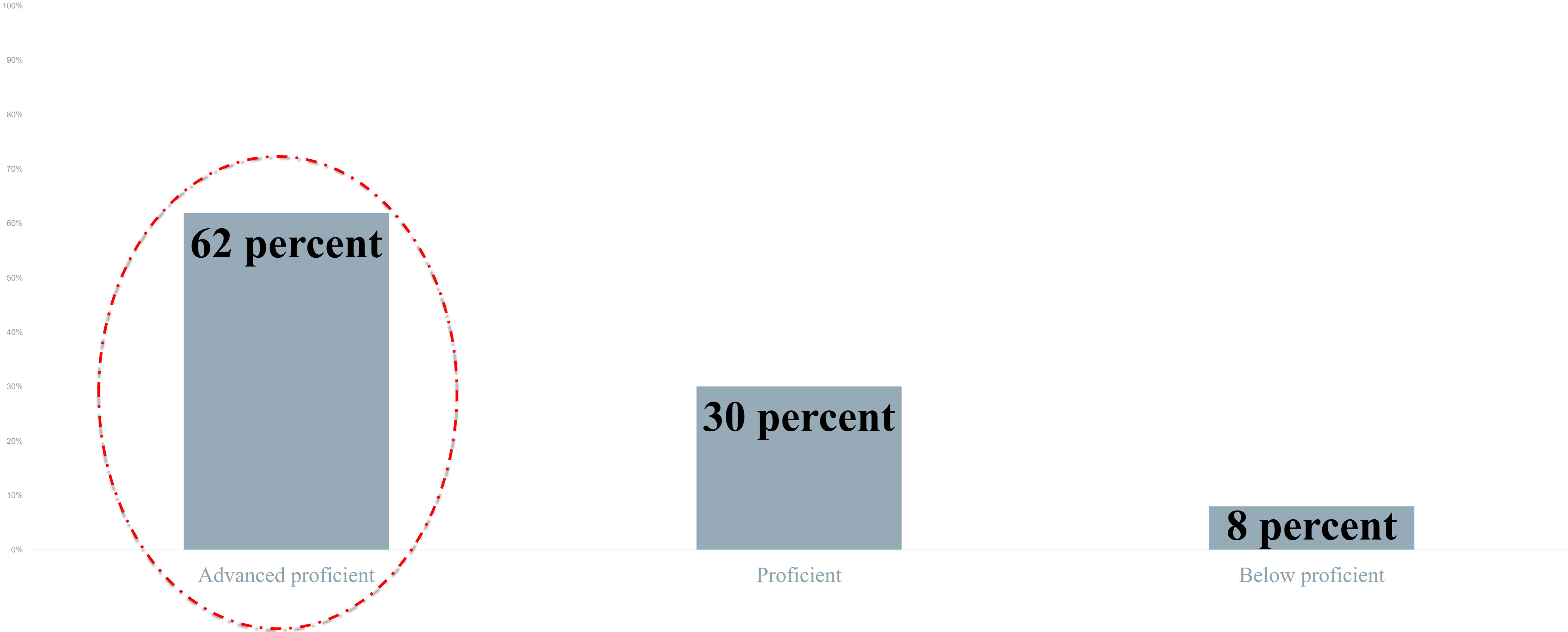
- All students: 61,200
- Economically disadvantaged (ED) students: 22,196 (36 percent)
- English learner (EL) students: 3,108 (5 percent)



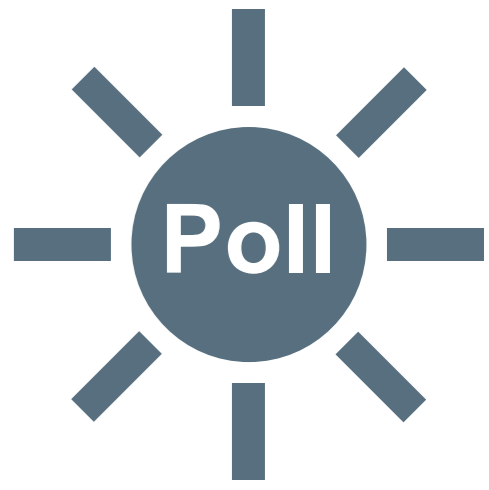
Of the 61,200 students in the study, 62 percent scored Advanced Proficient in grade 5 mathematics.



Let's drill down and look at the students who scored Advanced Proficient in grade 5 mathematics.



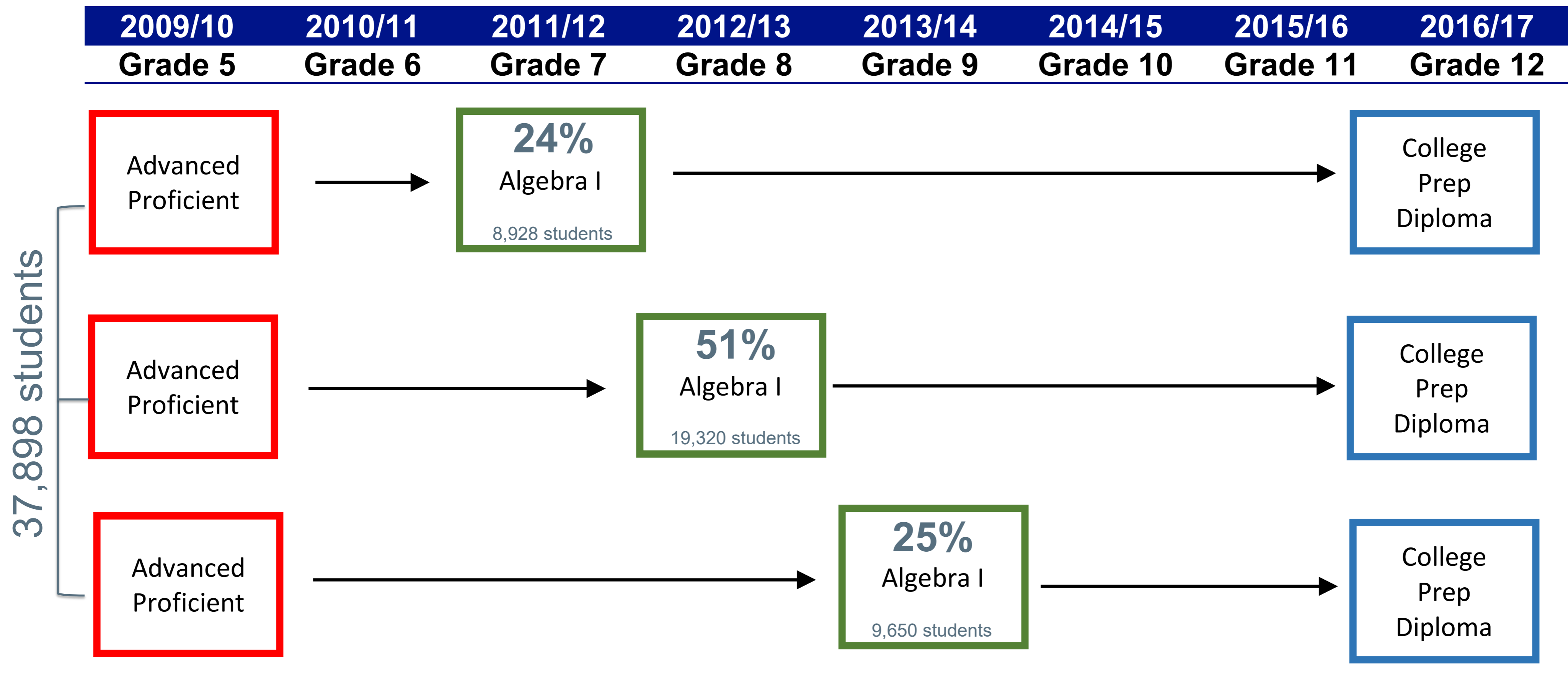
Among the students who scored **Advanced Proficient** in grade 5 mathematics, what grade level do you think has the highest percentage of students completing Algebra I in Virginia?



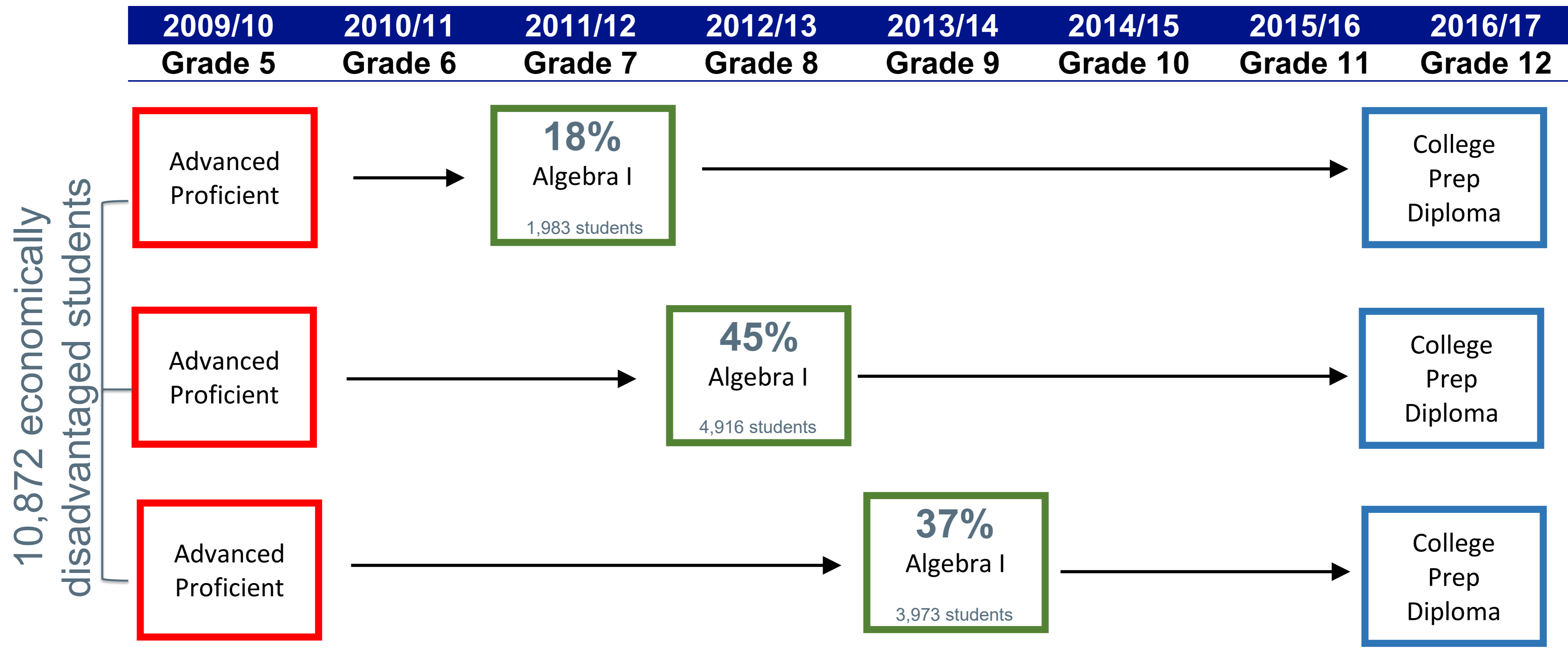
- Grade 7
- Grade 8
- Grade 9



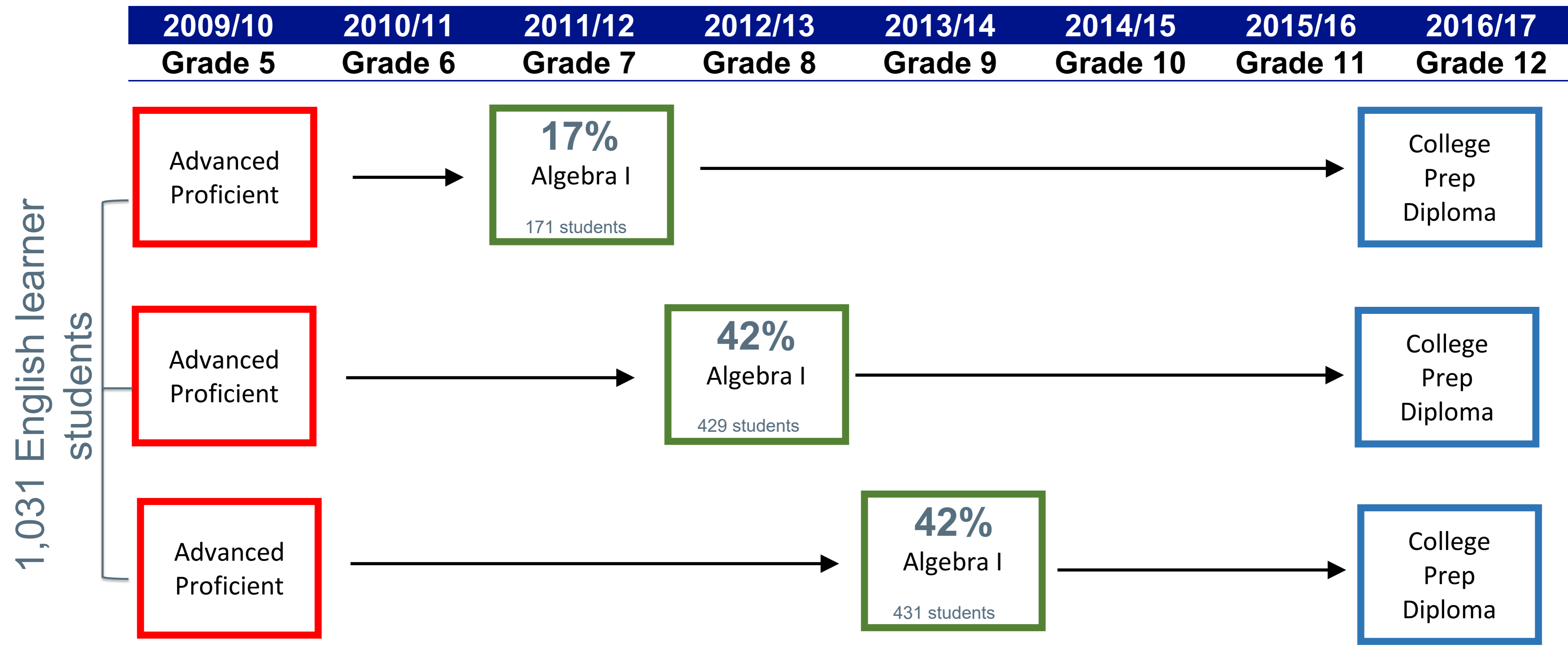
Among students who scored Advanced Proficient in grade 5, 51 percent completed Algebra I in grade 8.



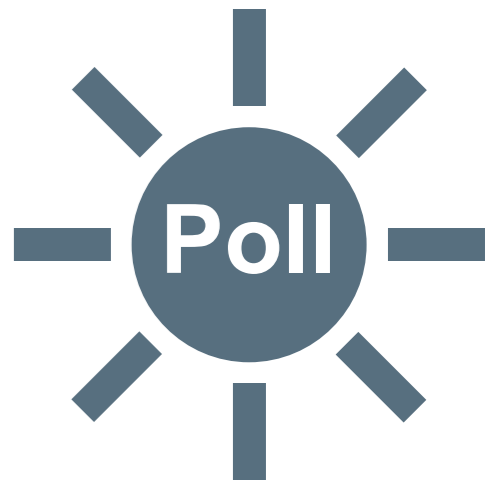
Among economically disadvantaged students who scored Advanced Proficient in grade 5, 45 percent completed Algebra I in grade 8.



Among **English learner students** who scored Advanced Proficient in grade 5, 42 percent completed Algebra I in grade 8.



Among the students who scored **Advanced Proficient** in grade 5 mathematics, which group had the highest percentage of students who graduated with a college preparatory diploma?

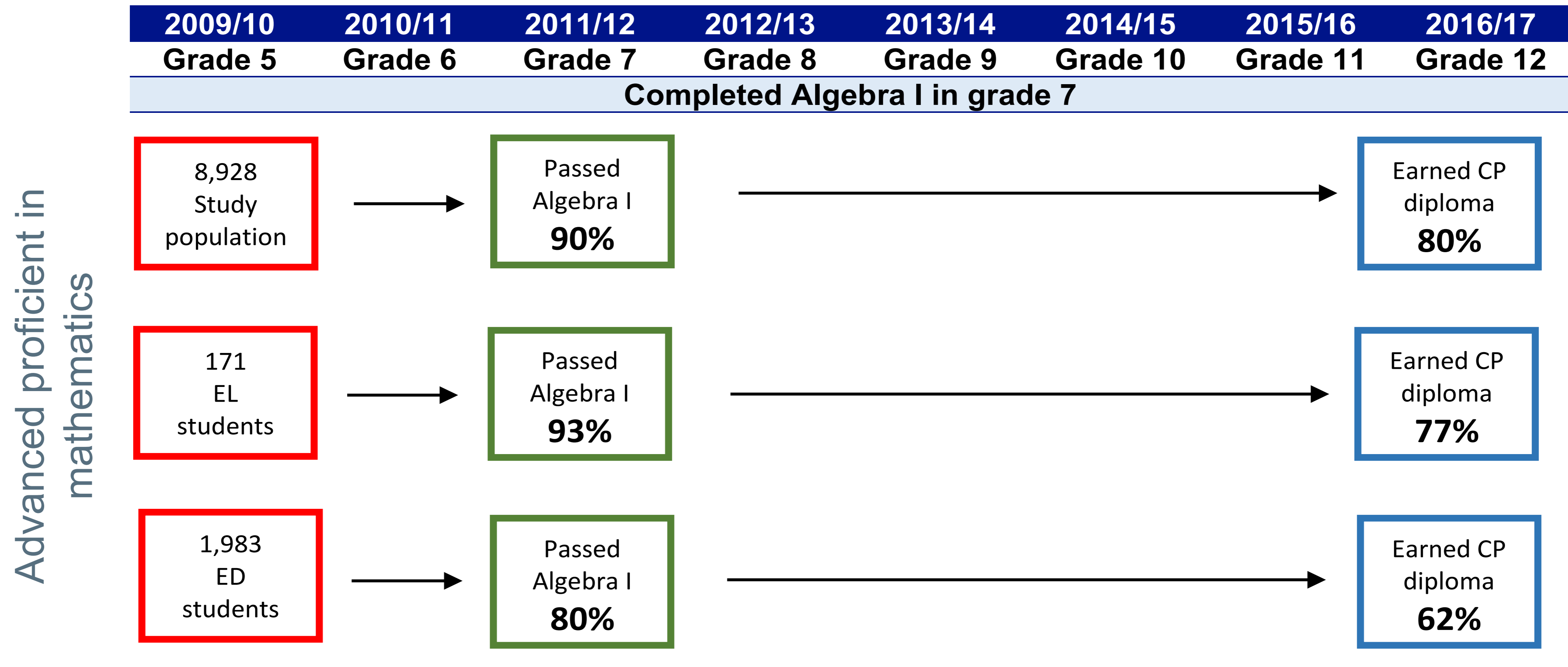


The group who completed Algebra I in:

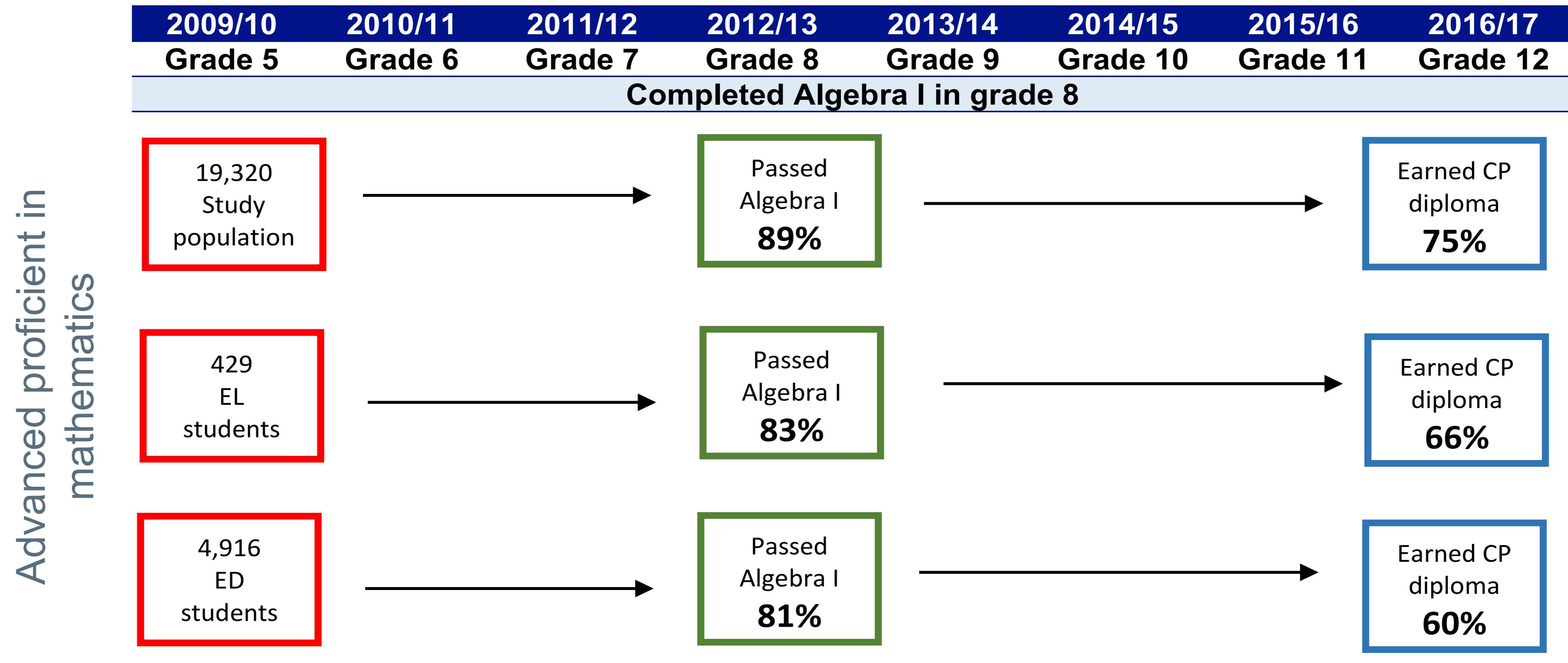
- Grade 7
- Grade 8
- Grade 9



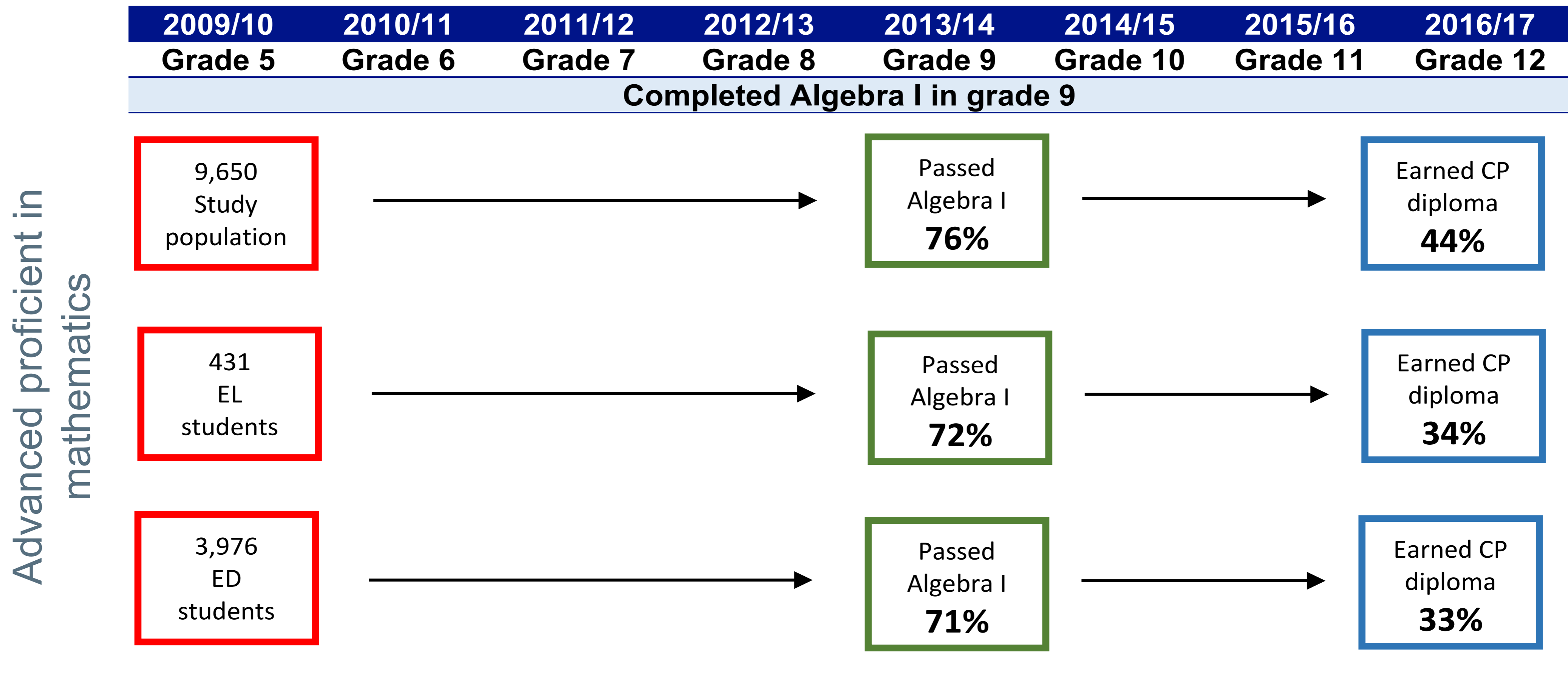
Among students who scored Advanced Proficient in grade 5 and completed Algebra I in grade 7, 80 percent earned a college preparatory diploma.



Among students who scored Advanced Proficient in grade 5 and completed Algebra I in grade 8, 75 percent earned a college preparatory diploma.



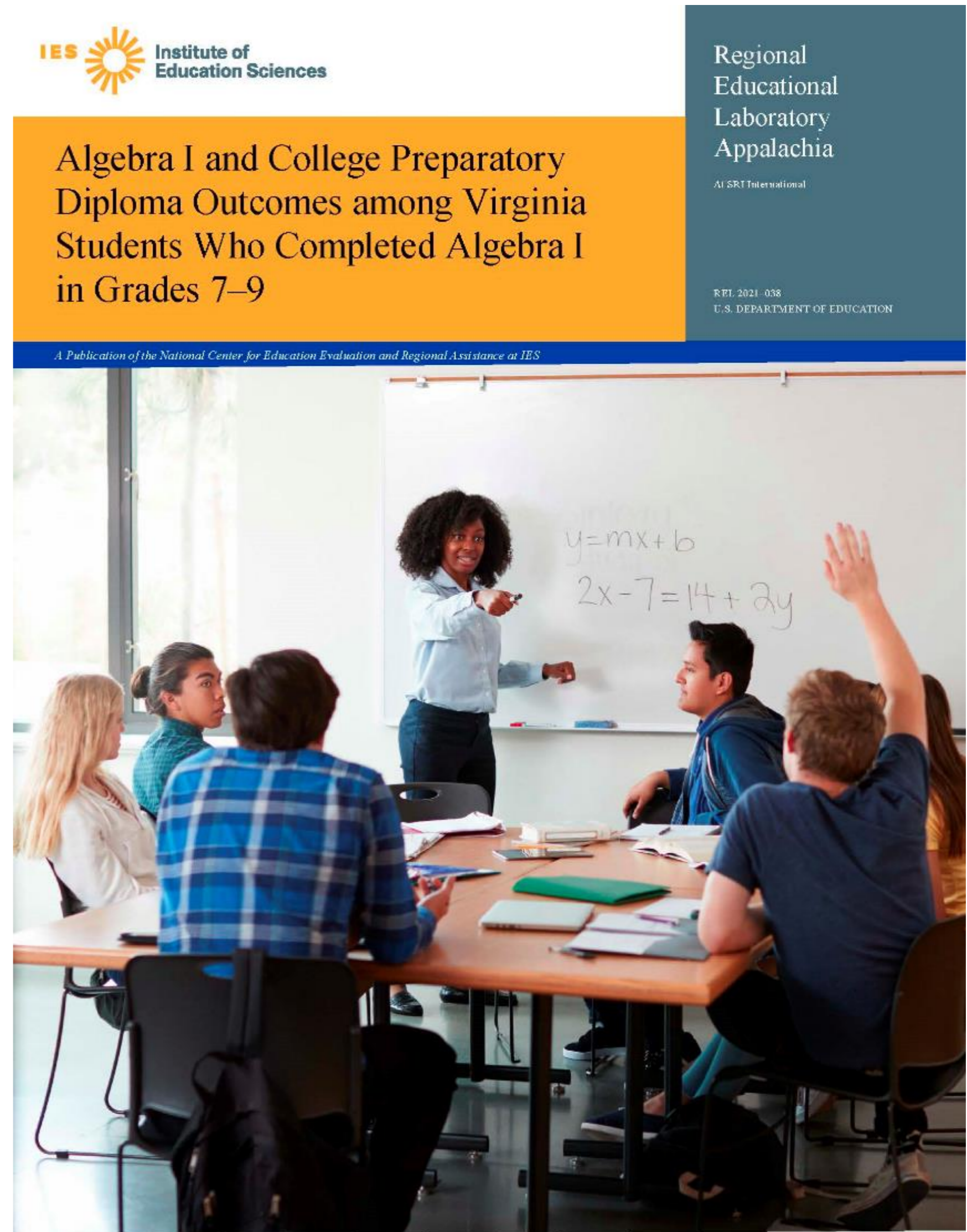
Among students who scored Advanced Proficient in grade 5 and completed Algebra I in grade 9, 44 percent earned a college preparatory diploma.



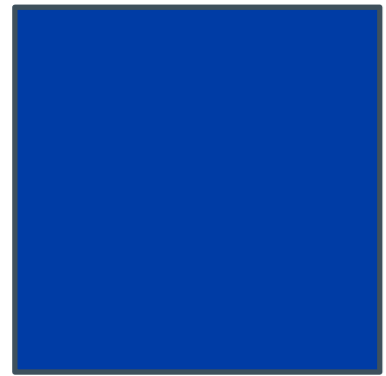
For more information

Access the full report, appendices, and study snapshot on the U.S. Department of Education, Institute of Education Sciences website:

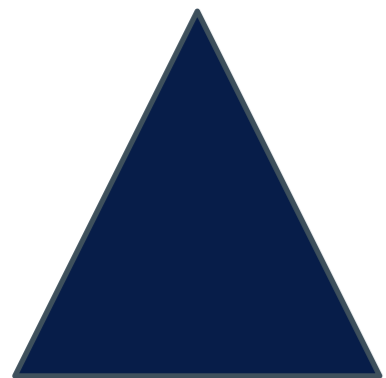
- <https://ies.ed.gov/ncee/edlabs/projects/project.asp?projectID=4577>



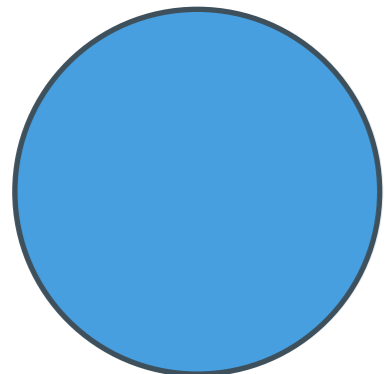
Pause and reflect



What is something that **squared** with your experience?



What are **three points** you want to remember?



What is a lingering question still going **around** in your mind?

Digging deeper into local data: Algebra I in grade 7



Ryoko Yamaguchi

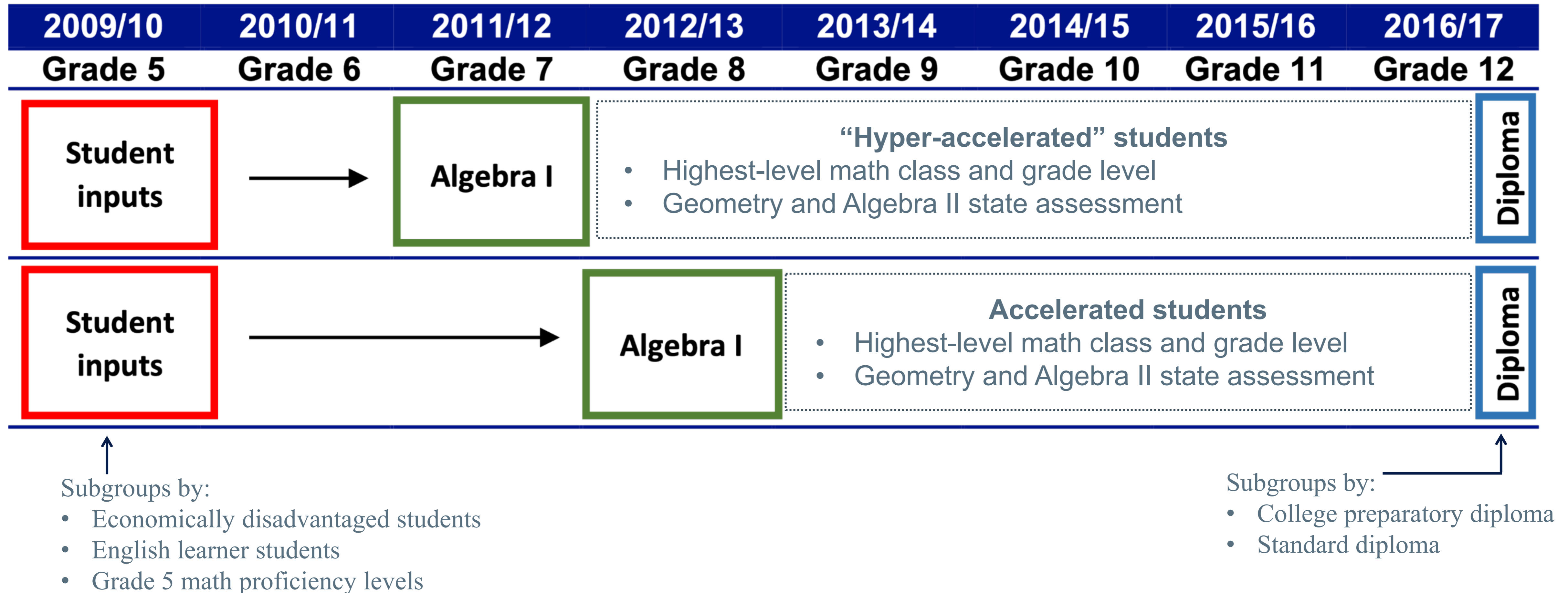


Stephanie Haskins



Brian Nussbaum

What is the story of students who completed Algebra I in grade 7? How does it compare with grade 8?



What is the story of students who completed Algebra I in grade 7?



Stephanie Haskins
Executive Director of Instruction



Brian Nussbaum
Secondary Mathematics Coordinator

Implications for policy and practice



Ryoko Yamaguchi

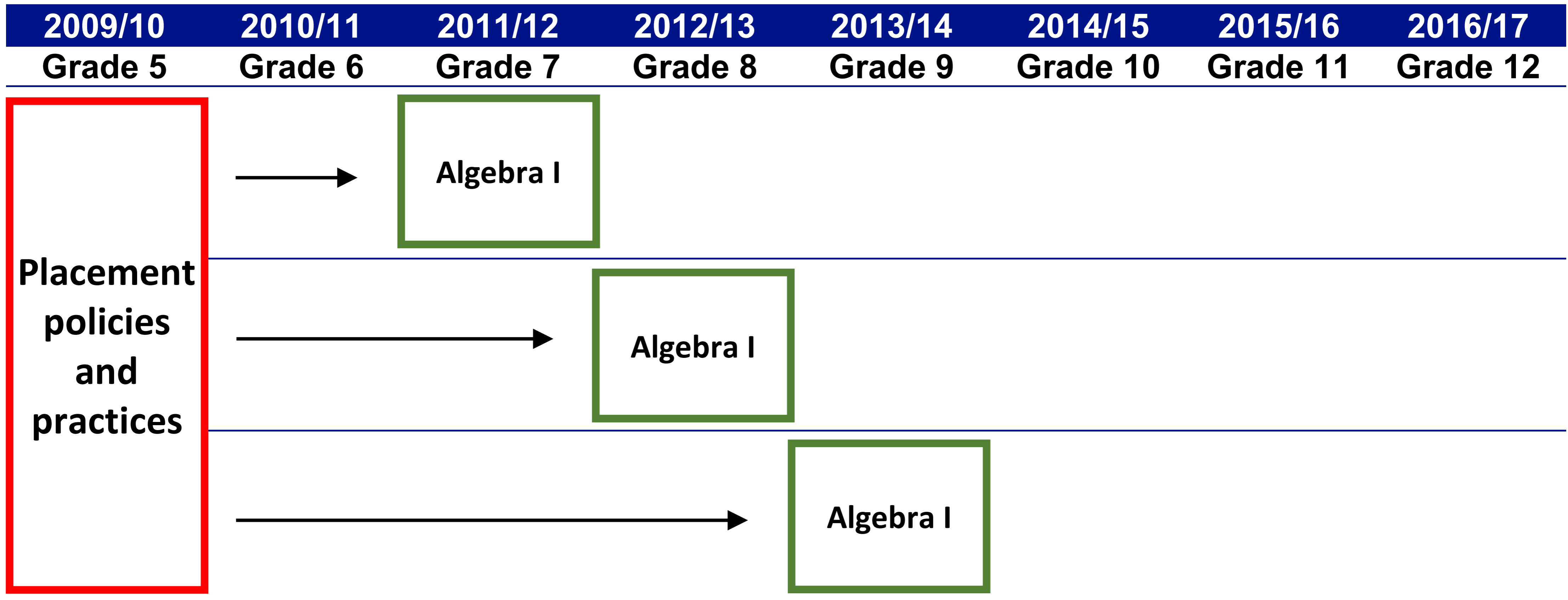


Stephanie Haskins

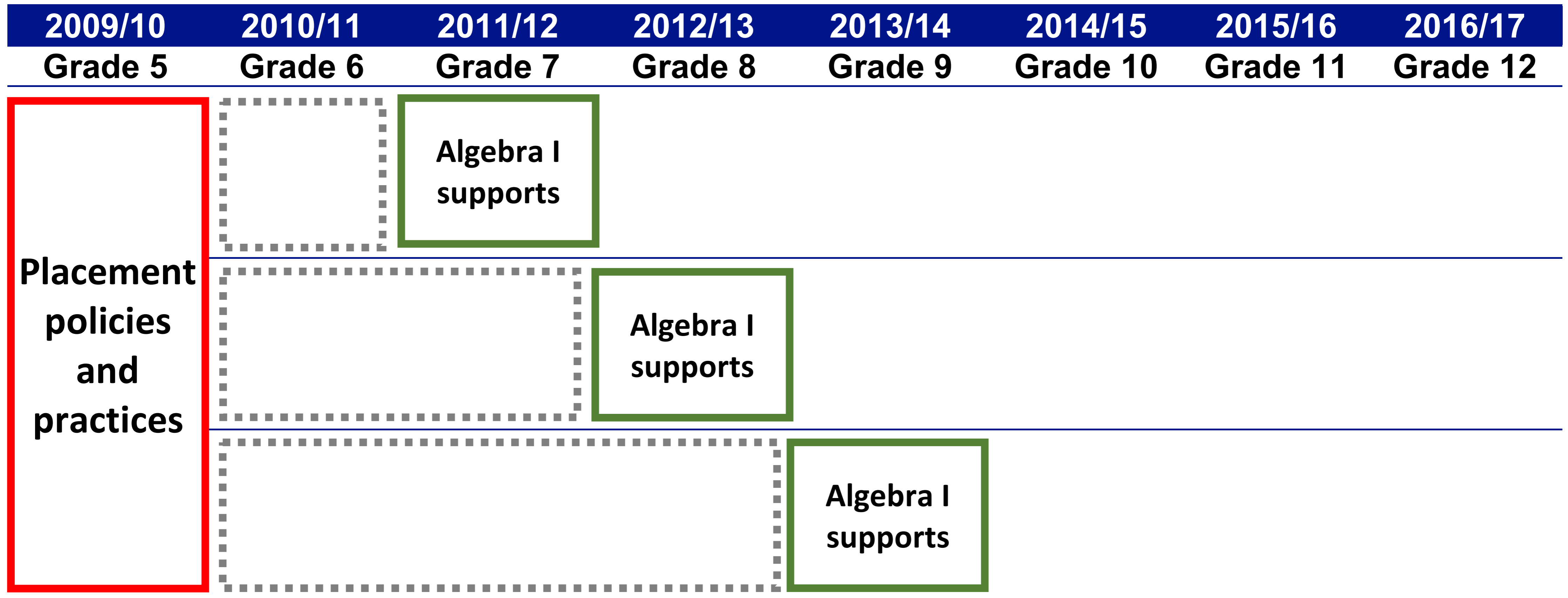


Brian Nussbaum

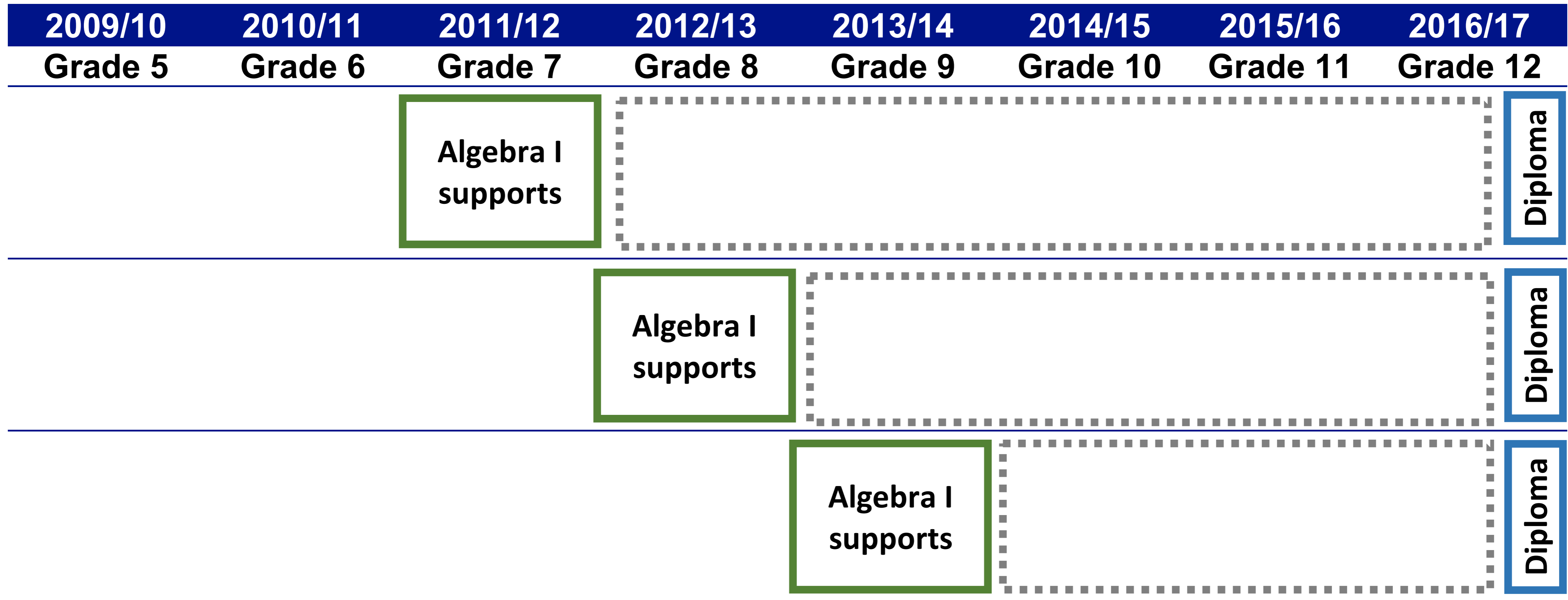
Reflect and discuss: Algebra I placement policies and practices



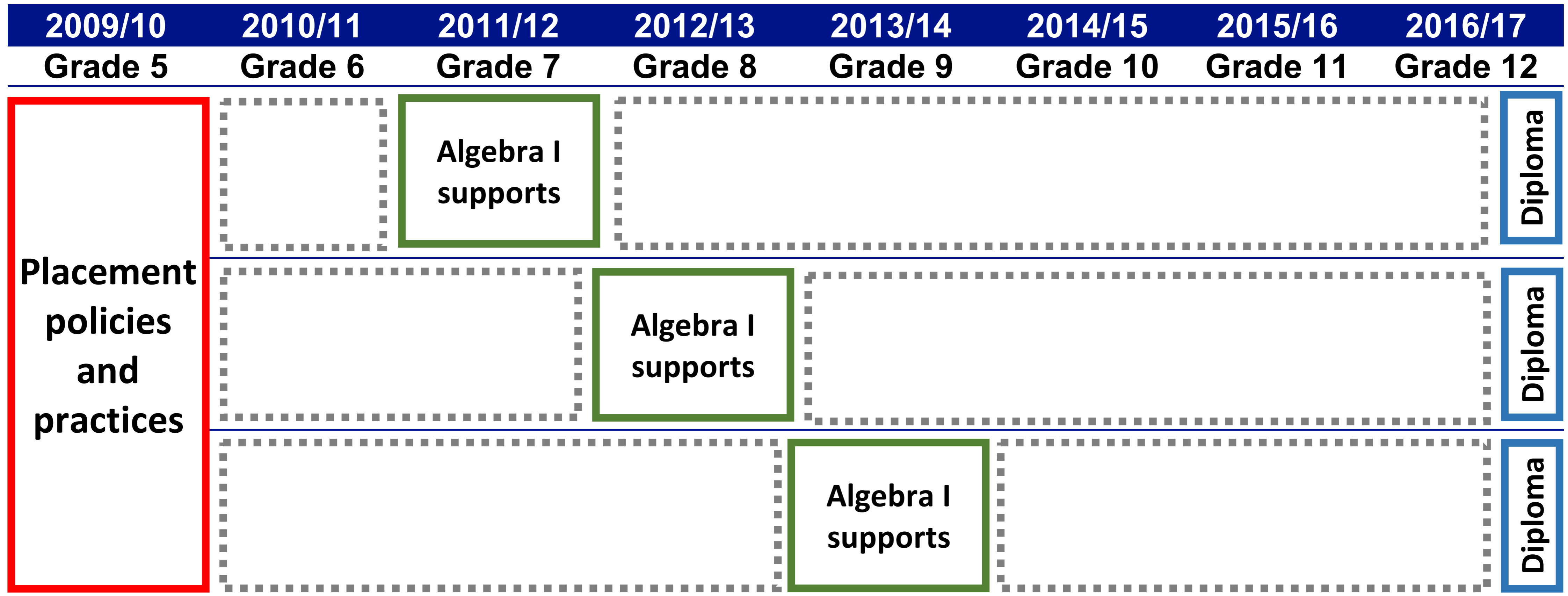
Reflect and discuss: Instructional supports before and during Algebra I



Reflect and discuss: Instructional supports after Algebra I to ensure college and career readiness at graduation



Reflect and discuss: Improving policies and practices throughout each student's mathematics coursetaking pathway



Thank you!



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



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Questions?

