The 2027 National Survey of Science, Mathematics Computer Science, and Engineering Education (NSSME+)

Eric R. Banilower (PI), Daniel J. Heck (Co-PI), Kristen A. Malzahn (Co-PI), Courtney L. Plumley (Co-PI)

Horizon Research, Inc. Chapel Hill, North Carolina

Horizon Research, Inc. is conducting the 2027 NSSME+, the seventh in a series of related surveys dating back to 1977. The 2027 NSSME+ will assess changes over time and provide current data on essential elements of the K–12 computer science, engineering, mathematics, and science education system in the United States.

Study Design

The 2027 NSSME+ will use a stratified, two-stage probability sample of schools and science, mathematics, and computer science teachers in grades K–12 in the US. In the first stage, 2,000 elementary and secondary schools will be selected within sampling strata with probability proportional to size. In the second stage, 10,000 science, mathematics, and computer science teachers will be sampled at predetermined rates to ensure the required number of teachers for domain estimates, such as for particular regions or types of communities.

Instruments

Seven instruments will be administered at each school in the sample:

- Teacher Listing Form
- School Coordinator Questionnaire/Computer Science Program Questionnaire
- Mathematics Program Questionnaire
- Science Program Questionnaire
- Computer Science Teacher Questionnaire
- Mathematics Teacher Questionnaire
- Science Teacher Questionnaire

Acknowledgments

What percentage of science teachers have had **no** science professional development in the last three years?

Lift the flaps to learn what was happening in STEM education in 2018.

What do you think we'll see in 2027?

How many times in a school year are students required to complete external mathematics assessments?

What percentage of high schools offer AP Computer Science Courses?

Research Questions Address:

1. Characteristics of the STEM teaching force, including race, content background, beliefs about teaching and learning, perceptions of preparedness
2. Instructional practices used in computer science, engineering, mathematics, and science instruction
3. Effects of recent developments such as data science and artificial intelligence on STEM instruction
4. Most commonly used instructional materials (e.g., textbooks/programs, open education resources, personalized learning systems)
5. Influences on teachers' decisions about content and pedagogy
6. Formal and informal opportunities STEM teachers have for ongoing knowledge and skills development
7. Distribution of resources for STEM education among schools in different types of communities and different socioeconomic levels

New Topics in 2027

- The use of artificial intelligence in schools
- Computational literacy
- Data science
- Residual effects of the COVID-19 pandemic

Timeline

Project award	Instrument development	School sampling	School recruitment	Data collection	Data analysis	Dissemination
Sept 2024	Dec 24–Feb 26	October 2025	Oct 25–Dec 26	Mar 27–Jun 27	Jul 27–Dec 28	Dec 27–Aug 29

For Further Information

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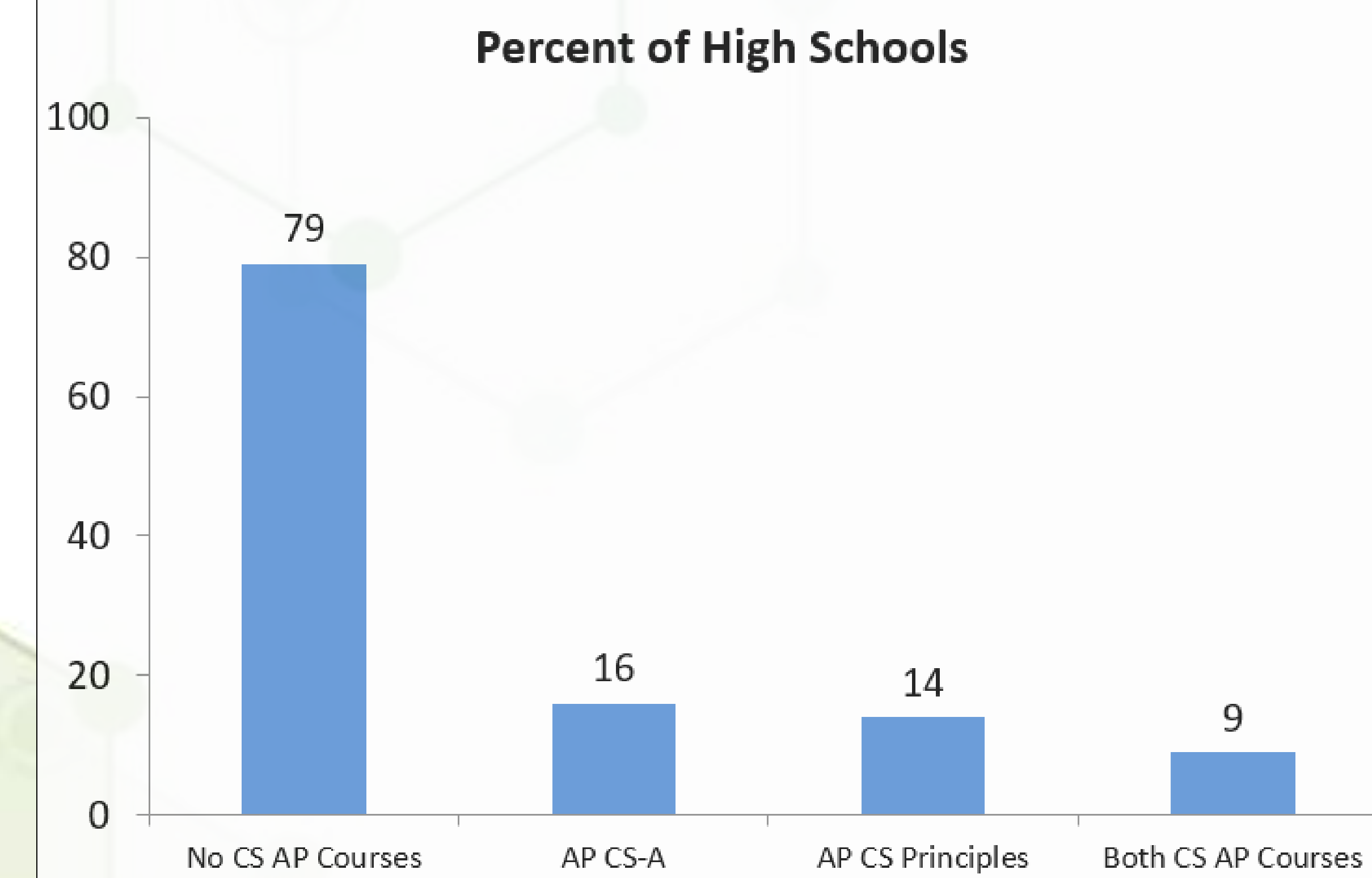## Acknowledgments

No Science PD in Last Three Years
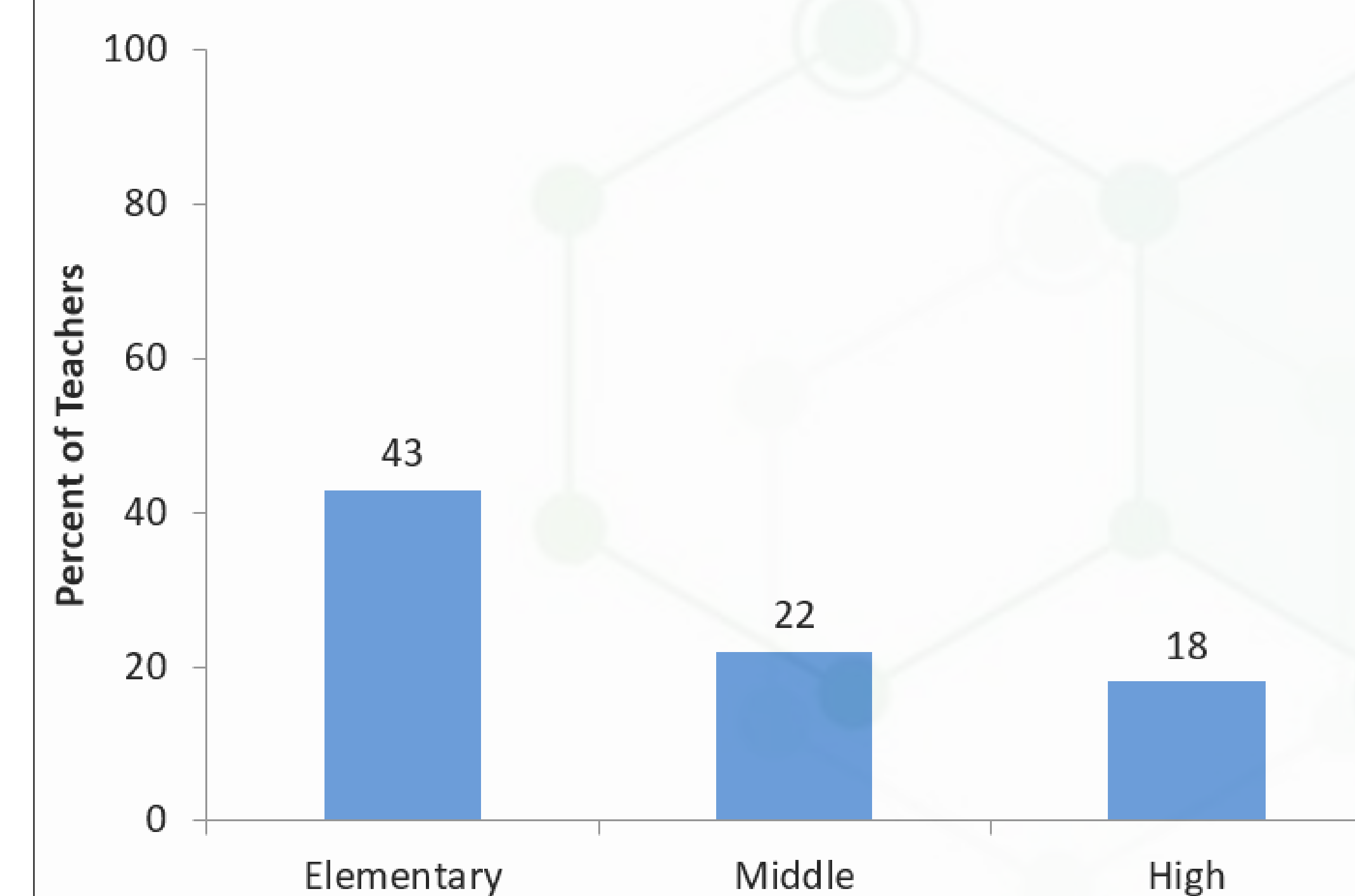
Lift the flaps to learn what was happening in STEM education in 2018.

What do you think we'll see in 2027?

Required External Mathematics Testing

	Percent of Classes		
	Elementary	Middle	High
Never	9	1	20
Once a year	9	12	25
Twice a year	9	11	22
Three or four times a year	48	43	24
Five or more times a year	25	33	10

High Schools Offering AP Computer Science Courses

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