

## State Government Roles for the Recruitment, Retention and Renewal of Mathematics and Science Teachers

<b>RECRUITMENT</b> <i>Strengthen teacher recruitment policies in mathematics and science.</i>		
<p><b>Implement a comprehensive package of mathematics and science teacher education recruitment strategies, starting in P–12 and extending through graduate school, that include incentives such as scholarships, signing bonuses, and differential pay.</b></p>	<p><b>Strengthen the content and pedagogy of teacher preparation programs to ensure a national mathematics and science teacher workforce capable of preparing P–12 students for success in higher education and the workplace.</b></p>	<p><b>Expand strategies to attract talented individuals in STEM-related professions to teaching, and ensure that they are adequately trained for the classroom.</b></p>
<b>ROLES FOR STATE GOVERNMENT</b>		
<p>Develop a statewide plan that includes policies, programs, and practices to increase the quality and quantity of P-12 mathematics and science teachers.</p> <p>Provide scholarships, research fellowships, teaching assistantships, and awards to attract promising candidates—middle school students through graduate students—into the mathematics and science teaching profession.</p> <p>Provide incentives for recruitment policies and programs, including signing bonuses; differential pay; student loan forgiveness; housing subsidies, loans, and stipends; and relocation costs.</p> <p>Provide incentives to school districts to develop programs that introduce middle and secondary school students to professional mathematics and science education organizations and that engage them in activities to nurture interest in STEM fields, such as mentoring and tutoring.</p>	<p>Encourage colleges and universities to align teacher preparation programs with P–12 mathematics and science content standards.</p> <p>Provide incentives for colleges and universities to create a broad range of preprofessional activities such as creating affiliate groups of the National Council of Teachers of Mathematics and the National Science Teachers Association; offering P–12 field experiences and internships; and sponsoring content-specific pedagogical institutes.</p>	<p>Develop/expand and evaluate alternative mathematics and science licensure programs that are based on relevant research and that are designed to attract STEM professionals.</p> <p>Provide incentives to attract STEM professionals currently working outside education to enroll in alternative mathematics and science teacher licensure programs.</p> <p>Invest in programs to strengthen the pedagogical skills of STEM professionals seeking to enter the teaching profession.</p>

*Transforming the Recruitment, Retention, and Renewal of Our Nation's Mathematics and Science Teaching Workforce*

State Government Roles for the Recruitment, Retention and Renewal of Mathematics and Science Teachers (CONTINUED)

**RETENTION**  
*Improve the retention of both new and experienced teachers, and address the causes of teacher dissatisfaction.*

<b>Develop and implement research-based induction programs for all new mathematics and science teachers.</b>	<b>Implement comprehensive policies and programs that address the leading causes of teacher job dissatisfaction, including inadequate compensation, lack of administration support, and professional isolation.</b>
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**ROLES FOR STATE GOVERNMENT**

<p>Develop and disseminate tools to evaluate the effectiveness of comprehensive, research-based induction programs.</p> <p>Establish, evaluate, and report on comprehensive, research-based induction programs.</p>	<p>Establish career ladders for teachers that require increased responsibility, additional training, and appropriate evaluation at each step, while providing an increase in base salary with each career advancement.</p> <p>Establish licensure requirements for the position of vice principal for academic affairs and provide incentives to school districts to create the position in every district school.</p> <p>Work with districts to raise teachers' salaries to levels comparable to those of professions requiring the same level of mathematics and/or science content knowledge.</p> <p>Encourage districts to create learning communities for mathematics and science teachers.</p>
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**RENEWAL**  
*Ensure that all mathematics and science teachers participate in renewal activities that support their effectiveness in the classroom.*

<b>Provide ongoing, research-based professional development programs, focused on both content and pedagogy, for all mathematics and science teachers.</b>	<b>Revamp teacher license renewal programs to incorporate measures of teacher effectiveness.</b>	<b>Establish comprehensive statewide data collection systems that track student progress, teacher effectiveness, and employment trends of mathematics and science teachers.</b>
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**ROLES FOR STATE GOVERNMENT**

<p>Establish state policies that require school districts to employ research-based principles for effective design and implementation of professional development.</p> <p>Work with school districts to implement research-based, comprehensive professional development programs that promote teacher collaboration.</p>	<p>Revise state teacher license renewal requirements to include a measure of the teacher's impact on student achievement, classroom observations, reviews of student work, and parent evaluations.</p> <p>Establish licensure standards for teachers of middle school mathematics and science, and for the position of vice principal for academic affairs.</p>	<p>Develop and implement high quality, statewide, longitudinal data systems that track P-12 student performance, graduation rates, and teacher effectiveness; monitor schools of education graduation and licensure rates; and report teacher employment trends.</p> <p>Improve state data analysis and reporting.</p>
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