

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

RECRUITMENT		
<i>Strengthen teacher recruitment policies in mathematics and science.</i>		
<p>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.</p>	<p>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.</p>	<p>Expand strategies to attract talented individuals in STEM-related professions to teaching, and ensure that they are adequately trained for the classroom.</p>
ROLES FOR FEDERAL GOVERNMENT		
<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 for the development, evaluation, and dissemination of mathematics and science teacher preparation programs.</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 pre-professional activities, such as creating student 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>Fund research on standards of effectiveness for alternative mathematics and science licensure programs.</p> <p>Provide incentives to states, school districts, and institutions of higher education for the development, implementation, and evaluation of alternative, research-based mathematics and science teacher licensure programs.</p> <p>Provide incentives, such as tuition assistance and loan forgiveness, to attract STEM professionals currently working outside education to enroll in alternative mathematics and science teacher licensure programs.</p> <p>Establish a national adjunct teacher corps that will prepare qualified STEM professionals to work in classrooms.</p>
RETENTION		
<i>Improve the retention of both new and experienced teachers, and address the causes of teacher dissatisfaction.</i>		
<p>Develop and implement research-based induction programs for all new mathematics and science teachers.</p>	<p>Implement comprehensive policies and programs that address the leading causes of teacher job dissatisfaction, including inadequate compensation, lack of administration support, and professional isolation.</p>	
ROLES FOR FEDERAL GOVERNMENT		
<p>Expand support for comprehensive, research-based induction programs.</p> <p>Offer incentives for the development and dissemination of programs to evaluate the effectiveness of comprehensive, research-based induction programs.</p>	<p>Expand summer professional experiences and employment programs for mathematics and science teachers at national laboratories and federal installations involved in STEM-related research and development.</p> <p>Provide incentives to higher education/state department of education partnerships to develop licensure programs for the position of vice principal for academic affairs, a school-level administrative leader who will work with teachers on curriculum, instructional practice, and professional development.</p> <p>Provide loan forgiveness, tax credits, and other financial incentives to mathematics and science teachers.</p> <p>Expand support to upgrade high school laboratory facilities and classroom technology and train teachers to incorporate new technology into their curriculum.</p>	

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RENEWAL <i>Ensure that all mathematics and science teachers participate in renewal activities that support their effectiveness in the classroom.</i>		
Provide ongoing, research-based professional development programs, focused on both content and pedagogy, for all mathematics and science teachers.	Revamp teacher license renewal programs to incorporate measures of teacher effectiveness.	Establish comprehensive statewide data collection systems that track student progress, teacher effectiveness, and employment trends of mathematics and science teachers.
ROLES FOR FEDERAL GOVERNMENT		
<p>Expand research and dissemination of programs that focus on the teaching and learning of mathematics and science.</p> <p>Increase support for the development, implementation, and evaluation of research-based, comprehensive professional development programs.</p> <p>Provide incentives to businesses, universities, nonprofit organizations, and federal laboratories to develop and support content-based summer externships for P-12 mathematics and science teachers.</p> <p>Provide incentives such as scholarships, fellowships, and assistantships for practicing P-12 mathematics and science teachers to encourage them to pursue graduate degrees in mathematics, science, mathematics education, or science education.</p>	<p>Provide incentives to expand research on, and dissemination of, criteria for determining effective teaching.</p> <p>Offer states and school districts incentives to revamp their teacher license renewal programs to include student performance data that tracks teacher effectiveness over time.</p>	<p>Expand support to states for the initial development of high quality longitudinal data systems and for the expansion and strengthening of existing ones.</p>