

CPE STEM Task Force
Crosswalk of Sector Group Ideas
December 19, 2006

January 30, 2007

	Sector Group		
	Business	Government	Higher Education
Communications Campaign			
Public relations/education campaign about the importance of STEM education	X	X	X
Students must see benefits of pursuing STEM fields / How might we energize those who are already in the pipeline to select STEM?	X	X	
Opportunity for KY niche in "sustainable energy" – potential new technologies and new jobs		X	
Create a large prize for creation of innovative energy solutions (Like X Prize)		X	
Communicate urgency of STEM crisis to the search committees for the CPE, KDE and Economic Development leadership positions		X	
Expand the idea of accountability for STEM education to include parents, students and higher education – not just about teachers			
Student and Teacher Incentives			
Differential pay for K-12 teachers in STEM disciplines	X	X	X
"Pay for performance" for teachers in STEM		X	
KEES Reform -- scholarships should pay more for STEM / create incentives for students to take more rigorous courses / fix STEM disincentives	X	X	X
Create strategies to maximize SMART grants in KY	X		
Money and grants for STEM majors/future STEM graduates		X	
Teacher Development in STEM Fields			
P-12 Schools			
Improve teacher education programs for STEM teachers / More STEM content in elementary and middle school teacher training / MA/MS programs in STEM fields		X	X
Raise credentialing standards for teachers in STEM disciplines / Require new high school science and math teachers to have content-based masters degrees / MA/MS in content area		X	X
Improve professional development for STEM teachers / Provide <u>paid</u> , college-level professional development opportunities for current math and science teachers in an adult-friendly format, such as a 6-week summer academy / Use distance learning/ technology for professional development		X	X
Alternative certification for PhD's who want to teach in K-12 / Hire mathematicians to teach mathematics	X	X	
Require mentoring for teachers who are lacking proper skills and/or certification		X	
Postsecondary Institutions			
Dual tenure track in higher education / Education vs. research faculty tracts			X
Require the cost of best practices to be factored into postsecondary institution's business plans			X

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STEM Instruction, Curriculum and Assessment			
P-12 Schools			
Strengthen STEM curriculum / raise standards in STEM content areas in secondary education / four year science requirement / review core content for relevancy and currency / cover content in depth, not with shallow breadth			X
Invest in interactive instructional technologies (Computer video games as upcoming tech platform for K-12 learning) / use technical tools to accelerate learning		X	
Review the assessment system in STEM subjects / add end of course exams / Review for disincentives to recommended curriculum and instruction changes / we currently teach to what is being tested		X	
Incorporate national STEM curriculum where possible		X	
Increase access to distance learning upper level Math and Science for all secondary students			X
Review the methods used in science and math instruction / inquiry-based instruction, team teaching, project based, etc.			
Consider a performance-based school model -- performance based school days and course endings			
Postsecondary Institutions			
Flexible, interdisciplinary Professional Science Masters programs to meet specific labor market needs			
Coordination of Current STEM Programs and Initiatives			
Coordinate the many math and science programs across the state / Clearinghouse of successful STEM programs / Higher education presentations indicate that resources are spread too thin without a focus on what is working	X		X
Business - Education Partnership			
Business community needs to become an active advocate for reform	X		
Work more closely with the business community -- students in the workplace and professionals in the classroom			
Achievement Gaps			
Close achievement gaps in STEM disciplines		X	
Taskforce Process			
Look at best practice states that may have similar demographics to KY	X		
Set aspirational but attainable goals in particular areas	X		
Match incentives to desired outcomes		X	
Create focus groups with talented high school students		X	
Already Accomplished			
Create Governor's Scholars-type program for STEM -- The Kentucky Math and Science Academy at Western Kentucky University was funded as part of Council's 2006-08 budget request and will begin this summer.			

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K-12 Education