

Providing the *S.T.E.A.M.* to fuel Virginia's future

Please Support Amendment #135, Early Childhood STEM Learning Through the Arts



FREQUENTLY ASKED QUESTIONS:

Why are the Arts an effective way to teach STEM?

STEM + Arts = STEAM. The arts and sciences share sequential learning and habits of mind that mutually support creative problem-solving, imaginative thinking, and transference of skills and knowledge.

“Jobs in the fields of Science, Technology, Engineering, and Math require foundational qualities such as curiosity, creativity, collaboration, and critical thinking—all of which are key concepts that are best learned through the performing arts.”

Arnold Punaro
Chairman, National Defense Industrial Association

Why Arts in early childhood education?

Arts-integrated teaching methods tap into children's innate desire for active, multisensory learning as children literally embody concepts by singing and dancing, and engage their imagination through puppetry, story dramatization, and role play.

Why STEM in early childhood education?

Early childhood provides the foundation for all future learning. Research confirms that young children are able to learn STEM concepts as the brain is particularly receptive to learning math and logic between the ages of 1 and 4.* Research also confirms that early math skills are the strongest predictor of later academic success.**



Which Virginia school systems will incorporate STEM Learning through the Arts?

Fairfax and Loudon Public School Systems have implemented the Wolf Trap Institute's Early STEM/Arts model and seek to expand their offerings in FY15. If funding is available, Petersburg, Wythe, and Accomack Public School Systems intend to utilize Early STEM/Arts in their Pre K– Kindergarten class-

How much funding is needed to implement these programs and what is the potential return on investment?

During the 2014-2015 school year, with Commonwealth funding of \$500,000, the Virginia STEM Early Learning through the Arts Project can provide 23,821 hours of service to approximately 4,240 students and 1,126 teachers, parents, and caregivers.

Professional development for teachers will ensure that an additional 7, 200 children will be served in the next 5 years.

“The arts are among society's most compelling and effective paths for developing 21st Century Skills in our students.”

Partnership for 21st Century Skills

“A lifetime societal return of greater than \$10 for every dollar invested in quality Pre-K education.”

The Pew Center on the States

*Chesloff, JD. “STEM Education Must Start in Early Childhood.” *Education Week*. 2013. Retrieved November 2013, http://www.readynation.org/uploads/20130328_JDChesloffEdWeek030613.pdf

**Duncan, G. J., Dowsett, C.J., Classens, A., Magnuson, K., Huston, A.C., Klebanov, P., et al. (2007). School readiness and later achievement. *Developmental Psychology*, 43, 1428-1446.

FY15 Proposal: STEM/Arts Early Childhood Education for Virginia Public Schools

