

# Early Childhood STEM Program Development



Children have an innate curiosity. From an early age, they like to tinker, test and explore objects. Through these interactions, they begin to develop inquiry skills, reasoning and problem solving. This is a natural introduction to science, technology, engineering and math (STEM) – skills that, when fostered and developed at an early age, will help them develop design and computational thinking needed to excel through the Pre-K –12 education process.

## Early Childhood Digital Fabrication Labs

Digital fabrication labs are a natural fit for this age group as they teach the skills of tomorrow with embedded play-based learning. TIES creates, designs and builds labs that are child-driven and support critical social and mental development skills including collaboration, creativity, interactivity, communication and exploration. This is accomplished by customizing each lab based on the facility's local context, school requirements, community partnerships and other objectives.



### ***TIES early childhood digital fabrication labs:***

- Supplement labs with low-tech and tactile design approaches and tools focused on young minds.
- Create safe and supportive spaces that provide children with tools and mentoring that promote a mindset to shape and tinker.
- Introduce children to the engineering design process.



## Creating Environments That Inspire Computational Thinking

At TIES it is our mission to make STEM-rich opportunities available to all learners –including the youngest. We partner with organizations, communities and funders to design digital fabrication labs that can be used as an extension of school districts, early childhood centers, museum and community facilities. As an early member of the digital fabrication movement, TIES has been instrumental in establishing standards for design, prototyping and development of curriculum.

*“Technology and interactive media are tools that can promote effective learning and development when they are used intentionally by early childhood educators, within the framework of developmentally appropriate practice to support learning goals established for individual children.\*”*

## TIES. Providing STEM Access for All Learners

TIES is dedicated to making STEM accessible to everyone, especially underserved and underrepresented learners. We do this by connecting stakeholders – educators, funders, community organizations, businesses and government agencies – who, through collaborative partnerships, create meaningful and gainful STEM learning experiences. Our team of consultants provides strategic planning support and guides design, training and implementation across all of our services.

## Our Customized Services Include All Aspects of Creating A Maker Space



### PLANNING

Learning tours of existing labs and demonstration of work, site assessment and evaluation of existing curriculum.



### DESIGN

Creating a custom lab that meets purpose, goals, curriculum, use and sustainability factors.



### INSTALLATION & TRAINING

Sourcing equipment, installation, trouble shooting and contextual training for staff.



### EDUCATIONAL SUPPORT

Extended user training, professional development and ongoing support and connectivity to curriculum for teachers and lab managers.



Uniting Partners. Transforming Learning.

Teaching Institute for Excellence in STEM

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