

VIRTUAL kit: STEAM – SCIENCE, TECHNOLOGY, ENGINEERING, ART & MATH

kit QT

**“Every kids starts out as a natural-born scientist,
and then we beat it out of them.**

**Few trickle through the system with their
wonder and enthusiasm for science intact.”**

--Carl Sagan

This quote by the famous scientist, Carl Sagan, points to the ineffective ways we have traditionally viewed teaching the sciences to children—by focusing on teaching of science *facts*, as opposed to teaching scientific *thinking*. Our approach to science education has historically not given children the necessary opportunities to foster curiosity, practice inquiry, exercise persistence, and act on reflective thinking. These are the skills necessary for success in the STEAM fields. The [Kansas Early Learning Standards](#) address science & math standards, but perhaps more importantly, Approaches to Learning standards, that aim to foster persistence & engagement, initiative, and creativity. These are some of the many attributes to focus on when thinking about STEAM education for young children. Below you will find online resources that will aid you in planning and implementing STEAM conversations, experiences, and activities with the children in your care, in a way to inspire their wonder and enthusiasm for science.

**“We should not teach children the sciences,
but give them a taste for them.”**

--Jean Jacques Rosseau

SHOW ME NOW – I NEED IT TOMORROW

[Let's Talk, Read, and Sing About STEM! Tips for Infant/Toddler Teachers & Providers](#)

[Let's Talk, Read, and Sing About STEM! Tips for Preschool Teachers & Providers](#)

[Understanding STEAM and How Children Use It](#)

Videos:

[Block Tricks: Defying Gravity](#)

[Foundations of Learning: Building STEM Skills](#)

[Let's Talk About STEM Video Series \(with handouts on each video\)](#)

[Let's Talk About Math: Early Math Video Series \(with handouts on each video\)](#)

WHAT DOES THIS LOOK LIKE IN PRACTICE? (I HAVE A LITTLE MORE TIME TO READ ABOUT THIS)

[NAEYC Making & Tinkering Webinar](#)

[Hands-On Learning](#)

[Infants plus Nature: The Perfect Equation for Joyful Learning](#)

[Physics in Preschool? Teaching STEM with Ramps and Pathways](#)

[Help Your Child Develop Early Math Skills](#)

[Teaching STEM \(or STEAM\) in Infant-Toddler Environments](#)

[STEM Resources and Materials for Engaging Learning Experiences](#)

[The Wonder of Nature's Colors: When Art & Nature Meet](#)

[Art Talk: Developing Visual and Verbal Literacy](#)

[STEM vs. STEAM: Why the "A" Makes the Difference](#)

WHAT DO THE ECRC HAVE ON THIS TOPIC?

Below are selected resources from the Early Childhood Resource Center. For additional resources go to the [KITS website](#) and access the Early Childhood Resource Center catalog by clicking on [ECRC](#), or call (620) 421-6550 ext. 1638 for personal assistance.

Barbre, J. (2017). Baby steps to STEM: Infant and toddler science, technology, engineering, and math activities.

Stone-MacDonald, A. (2015). Engaging young engineers: Teaching problem solving skills through STEM.

Heroman, C. (2016). Making and tinkering with stem: Solving design challenges with young children.

HOW CAN I FIND TRAINING/TRAINING MATERIALS ON THE TOPIC?

KCCTO Inc. Online training courses at www.kccto.org:

Notice, Wonder, Explore...Science With Children—4 KDHE Clock Hours

So just what is 'science'? How can this broad topic be encompassed in one complete definition? Take this course to gain a basic understanding of science in early childhood, the role of the teacher in supporting young children's scientific inquiry, and creating an environment that supports science within the early childhood program.

Process & Art Creation—3 KDHE Clock Hours

What is the process of art and how do children learn through art? This course will provide new ideas and techniques to foster children's creativity, guide you the teacher in your role of creativity, and provide ideas for materials and tools to utilize in the art environment.

Building Skills Through Art—6 KDHE Clock Hours

Want to know how you can support children's development through the arts? This course was developed by Kathrine Schlageck, Senior Educator at the Beach Museum of Art at Kansas State University, and shares examples of the many successful early childhood programming activities offered through the museum. Participants in this course will learn the power of art and how it links to physical development, development of the concept of symbols, observation skills, art interpretation & cognitive skills, problem solving, social skills, creativity and interdisciplinary connections. The activities and information provide a deeper level of study into art with young children.

- [KCCTO-KITS ITSN Community Based Training\](#)
 - STEM for Babies & Toddlers
 - Emergent Planning for STEAM Activities
 - Process & Art Creation
- Visit these links for collaborative training calendars:
 - [KCCTO Training Calendar](#)
 - [KITS Training Calendar](#)

To inquire about a specific class, contact the KCCTO office 785-532-7197 or visit KCCTO.org

IF YOU THOUGHT THIS WAS HELPFUL YOU MIGHT ALSO LIKE

[Intentional Planning for Infants and Toddlers \(TA Packet\)](#)

[Proactive Strategies to Support Classroom Routines and Schedules \(TA Packet\)](#)

[Support Social Competence Through Strategies for Birth-5 \(Virtual Kit\)](#)

WHAT IF I STILL NEED HELP?

You may request technical assistance from the KCCTO-KITS Infant Toddler Network Specialists by calling the KCCTO office at 800-227-3578.

EVALUATION

Please take a minute to complete a brief survey to let us know what you think about this virtual kit, and what other topics you would like to see addressed in the future:

<https://www.surveymonkey.com/r/C5ZV75M>

REGERENCES

Kansas State Department of Education. (2014). Kansas Early Learning Standards: Building the Foundation for Successful Children. Retrieved from <http://www.ksde.org/portals/0/early%20childhood/ksearlylearningstandards.pdf>

Let's Talk, Read, and Sing About STEM! Retrieved from <https://www2.ed.gov/about/inits/ed/earlylearning/talk-read-sing/stem-toolkit-preschool-teachers.pdf>

Maples, L. (2017). Hands-On Learning. Community Playthings. Retrieved from <http://www.communityplaythings.com/resources/articles/2017/hands-on-learning>