



• Just Playing Around: Teaching STEM Through Inquiry, Exploration, and Play •

A workshop series for teachers of PreK, K and 1st grade students

Children are naturally curious, full of questions, creative, and playful. This four-part workshop series uses the concept of science, technology, engineering, and mathematics (STEM) as play; children are engaged in asking questions, making discoveries, experimenting, working with others, and working toward proficiency in the VELs, NGSS and CCSS standards.

The format of each workshop reflects this playful approach to STEM. Participants will interact with each other, ask questions, explore materials, and play. The series starts with a focus on mathematics followed by science. Engineering, the third workshop, is presented as an application of scientific and mathematical concepts. Technology is viewed as a tool that is woven throughout the series. The last workshop focuses on integrating STEM throughout the day.

The series can also be taken as a 3-credit graduate course. The course requires participating in all four workshops, completing readings and assignments online, focusing on purposeful play, cultivating STEM identities, and strengthening both teacher and children's mindsets with STEM content. The course instructor is Loree Silvis.

September 26, 2019 - Workshop #1: Mathematics

Presented by Loree Silvis, M.Ed.

October 17, 2019 - Workshop #2: Science

Presented by Susan Koch, M.Ed.

November 4, 2019 - Workshop #3: Engineering

Presented by Maggie Carrera-Bly, M.S.

December 3, 2019 - Workshop #4: Integrating STEM Throughout the Day

Presented by Loree Silvis and Others

Dates: September 26, October 17, November 4, December 3

Place: Delta Hotel, South Burlington

Cost: \$150 for each workshop; \$1200 for 3-credit graduate course

Time: 8:30-3:30

See page 2 and 3 for details and registration





VERMONT HIGHER EDUCATION COLLABORATIVE

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OUR 20TH
YEAR!



September 26, 2019 - Workshop #1: Mathematics

[Register for Workshop #1](#)

Participants in this workshop will:

- Develop an understanding of the teaching and learning trajectories in the areas of Number and Operations, Geometry, and Measurement;
- Investigate ways to naturally highlight math in play situations and provide focused learning opportunities through play;
- Explore and extend their own math understandings during problem solving explorations; and
- Create math toolkits to use in their own learning environments.

October 17, 2019 - Workshop #2: Science

[Register for Workshop #2](#)

Participants in this workshop will leave with a STEM toolkit of ideas and simple materials grounded in:

- Using the outdoors as a learning environment that optimizes play and exploration;
- Introducing science phenomena, tasks and problems to spark curiosity;
- Employing strategies that encourage questioning and prompt inquiry;
- Using literature to thread science themes throughout the day;
- Reflecting and documenting with technology; and
- Scaffolding to include all learners and personalize learning.

November 4, 2019 - Workshop #3: Engineering

[Register for Workshop #3](#)

Engineering is the application of science and math to solve problems; its aim is to solve the “so what?” question that students often wonder about. The Next Generation Science Standards (NGSS) specifically call for students to engage in the practices of science and engineering that will address major challenges confronting our society today and get them ready to solve societal and environmental challenges they’ll face in the future. Students are expected to define problems, identify and work with criteria and constraints when searching for solutions; build and test prototypes; and generate, evaluate and optimize solutions.

Workshop participants will:

- Dive into the importance of engineering in early elementary classrooms, as well as resources and tools to help build students’ capacity in both science and engineering;
- Engage in an engineering design challenge; and
- Consider ways to incorporate engineering into the day.

December 3, 2019 - Workshop #4: Integrating STEM Throughout the Day [Register for Workshop #4](#)

This final workshop addresses the question, “How can I use this in my classroom?” Participants will draw upon the knowledge, instructional strategies, and tools they acquired in the first three workshops to create integrated, playful, and rich learning experiences for children. Participants will leave armed with concrete plans for implementing developmentally appropriate learning experiences throughout the day that integrate STEM.

[Register for All Four Workshops](#)

[Register for STEM Course](#)

Use vthec.org for registration, and [Facebook](#) and [Twitter](#) for additional news, resources, articles, etc.



Presenter Bios

Loree Silvis is an early childhood and elementary mathematics specialist, and an instructor in the VT-HEC Early Childhood Program. She researches, develops, and teaches graduate-level courses and workshops focusing on how young children construct an understanding of important foundational mathematics concepts. She also works with school districts throughout Vermont focusing on instructional best practices in mathematics.

Susan Koch, a first-grade teacher in Montpelier, has been devoted to using an inquiry approach to learning for more than 25 years. She is passionate about outdoor learning and creating community, and she believes that developing a sense of wonder is crucial for the future stewards of the Earth. Susan was named the 2016 Vermont Teacher of the Year.

Margaret Carrera-Bly is the science specialist for the Vermont Agency of Education. She has been providing professional learning to the field around the Next Generation Science Standards in an effort to familiarize all educators in how to unpack, read and understand the disciplinary core ideas, science and engineering practices, and crosscutting concepts. Prior to her work at the state, she was a classroom teacher for grades 5 through 12.

Perhaps, we need to look at play from a different perspective; if the feeling of active movement toward a goal is what we call work, then play is the work of children. In fact, it is the work and the art of childhood: the essence of learning, discovery, and creating.*

**From Purposeful Play: A Teacher's Guide to Igniting Deep and Joyful Learning Across the Day by K. Marz, A. Porcelli & C. Tyler*

These workshops are offered at a cost reduction through the VT-HEC Mission Investment Fund. Additional scholarships may be available.



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