



• Just Playing Around • Teaching PreK to 3rd grade STEM Through Inquiry, Exploration, and Play

A Series of Three Workshops with Course Option

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

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

The series can also be taken as a 2-credit course which requires participation in all three workshops and completion of readings and assignments focusing on purposeful play, cultivating STEM identities, and strengthening both teacher and student mindsets with STEM content. The course instructor is Loree Silvis.

Workshop #1: January 31, 2019 - Science

Presenter: Susan Koch

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

- Creating a learning environment which optimizes play and exploration;
- Developing strategies to encourage questioning and prompt inquiry;
- Introducing science phenomena, tasks, and problems to spark curiosity;
- Using literature to embed science themes;
- Scaffolding to include all learners and personalize learning; and
- Utilizing loose parts and a tinkering mindset.

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Dates: 1/31/19, 3/26/19, 5/17/19
Place: Capitol Plaza
Montpelier, VT
Cost: \$150/workshop; \$850 for 2-
credit graduate or
undergraduate course
Time: 8:30-3:30



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Workshop #2: March 26 - Mathematics

Presenter: Loree Silvis

Participants in the mathematics workshop will:

- Develop an understanding of teaching and learning trajectories in Number and Operations, Geometry, and Measurement;
- Investigate ways to naturally highlight math in play situations;
- Learn how to 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.

Workshop #3: May 17 - Engineering

Presenter: Marlene Guay

The workshop content is from the Boston Museum of Science's *Wee Engineers* and *Engineering is Elementary* modules. During this science workshop, participants will:

- Explore ways to harness children's natural curiosity;
- Focus on real-world problem solving that helps children think about the designed world in which they live;
- Discover ways to introduce the engineering design process to children in preschool to 3rd grade; and
- Learn how to implement these practices into common pre-school environments.

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 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.

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.

Marlene Guay is a professional development provider at the Boston Museum of Science. She is a Certified Early Childhood Educator experienced in formal and informal education facilitation working with toddlers through adults. Marlene advocates for high quality inclusive learning experiences that promote equity to better service underrepresented, underserved and underperforming populations.

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

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