Learning Labs

STEM to STEAM: A Maker Day for Educators

Register Today!

Spark your creativity at Maker Day!

Learning Labs will be provided as break-outs (45 minute) and intensives (90 minute). Select the Learning Labs that align with your STEM and STEAM teaching and learning goals and objectives. There is no need to pre-register for individual learning labs. All sessions are provided on a first come, first served.

Maker Day Schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>8:15 am</th>
<th>9:00-10:40 am</th>
<th>10:50-12:20 pm</th>
<th>12:20-1:00 pm</th>
<th>1:00-2:30 pm</th>
<th>2:40-4:10 pm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check-In</td>
<td>Interactive Keynote</td>
<td>Learning Labs</td>
<td>LUNCH</td>
<td>Learning Labs</td>
<td>Learning Labs</td>
<td></td>
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</tbody>
</table>

Southeast Service Cooperative

Professional Development
Arts Electrified!
Explore ways in which circuitry can be incorporated into the arts, including interactive poetry, LED wearables, and lighted art and design. Check out project examples and make your own design to take back to school!

Presenter: Amy Thuesen  
*Technology Integration Coach*  
*Austin High School*

Color By Number
Art and math are always a strong pairing. Use the “color by number” concept to explore numbers, number patterns, multiplication, and more. Try out ways to represent number rules visually.

Presenter: Bridget Novak  
*Resident Teaching Artist and Education Coordinator*  
*Northfield Arts Guild*

Collaborating for STEM Success
The Rochester Area Math and Science Partnership (RAMSP) is the strategic advantage in preparing students for STEM careers and building pathways to economic success in southeast Minnesota through experience, exploration, connections, academic excellence, and applicable curriculum through centralized efficiencies. Learn how SSC is amplifying the impact of RAMSP and participate in a maker activity.

Presenter: Sarah Ness  
*Program Manager*  
*Southeast Service Cooperative*
**Explore Chemistry through Watercolor**
Throughout the history of painting, science has been key to developing artist materials and techniques to produce specific results. Learn watercolor techniques that help your students explore chemistry and how materials interact.

Presenter:
Bridget Novak  
*Resident Teaching Artist and Education Coordinator*  
Northfield Arts Guild

**Inside the Creative Process**
Take a creative journey with writer and illustrator, Joni Oeltjenbruns. She will share the steps she uses to create a story and then facilitate the conception of a story with session participants. She will guide you through the illustration process to take your ideas from imagination to reality and create a tangible work.

Presenter:
Joni Oeltjenbruns  
*Author and Illustrator of Children’s Books*

**Making a Makerspace**
Are you designing a makerspace? Do you already have a makerspace and need ideas and resources to keep it fresh and vibrant? Dive into the making of a makerspace with Troy Strand. Troy has experience teaching in a makerspace and working with students to learn 3D modeling and printing, robotics, machine fabrication, music production, woodworking, programming, and web design. He supports teachers in White Bear Lake Area Schools on technology best practices, using the latest tools to effectively boost creativity, communication, collaboration, and critical thinking in their students. He is working to build stationary and mobile makerspaces within the district and will share the behind-the-scenes details on setting up successful makerspaces. This is a hands-on learning session that will inspire you to take your makerspace ideas to the next level! You will get to try out materials and makerspace activities.

Presenter:  
Troy Strand, Musician and Educator  
*Digital Learning Specialist, White Bear Lake Area Schools  
Composition Teacher, MacPhail Center for Music*
Prototyping

Prototyping is a critical step in the design process for products, software, and services. It is used across all sectors including healthcare, education, building and trades, manufacturing, agriculture, government, and technology. Being able to conceptualize a solution from the spark of an idea to the creation of a product or service is an essential and in-demand career skill. Experience prototyping and get ideas for high-tech and low-tech methods and resources to conceptualize and test designs. Make a 2D and 3D prototype using fun arts and crafts materials and equipment.

Presenter:
Katie Schmitt
Development and Innovation Specialist
Southeast Service Cooperative

Origami: STEAM Undercover

The basic technique of origami is simple. Fold paper to transform it into a 3D object. From a seemly simple concept, origami brings a wealth of STEAM connections. Origami provides experiential learning in building blocks for math, including: shapes, patterns, geometry, spatial sense, and symmetry. Additionally, physics, design, and building are embedded into the making process. Origami also encourages patience, persistence, creativity, and following directions. Make origami and uncover the STEAM connections.

Presenter:
Kathleen Sheridan
Origami and You

45 minutes

90 minutes
Recycle - Make Paper!
You've heard it's messy. You've heard it's hard. You've heard the 'paper' doesn't turn out like paper. It's time to go hands-on and find out for yourself. Make your own sheet of paper by recycling wastepaper into a new, usable handmade sheet. Discover why you'll hear kids say, “Hey! When do we get to make paper?” Presented by Arnold Grummer’s in collaboration with SAX Arts & Crafts.

Presenter: Kim Schiedermayer

Scratch the Itch!
Programming with Purpose in the Classroom
Scratch helps young people learn to think creatively, reason systematically, and work collaboratively - essential skills for life in the 21st century. Scratch is a free online coding platform that lets kids be creative and program variety of interactive media projects, including, animations, stories, and games. This session will introduce teachers in grades 3-8 to Scratch, help them complete a project, and suggest ways to use it for many content areas in the classroom. Participants need to bring a laptop to this session.

Presenter: Pam Bagniewski, Technology Integration Specialist
St. Francis of Assisi School

Using Technology to Empower Students to be Leaders in Learning
Making is not only about the design process or end product. The maker movement is also about sharing and building community. Students need an outlet to share what they have made or created and reflect on the learning experience. In this session, participants will learn ways to deepen the learning process through technology and social networking. Participants are encouraged to bring a tablet or laptop to this session.

Presenters:
Kristi Traxler, Family and Consumer Science Teacher
Jason Ludwigson, Technology Integration Specialist
LaCrescent-Hokah Middle School and High School
Visual Thinking Strategies

Visual Thinking Strategies (VTS) is an inquiry-based teaching strategy for all grade levels. You do not need any special art training to use this strategy. The goal of VTS is not to teach the history of a work of art but, rather, to encourage students to observe independently and to back up their comments with evidence. It provides for open-ended yet highly structured discussions of visual art, and significantly increases students’ critical thinking, language, and literacy skills, across a range of subjects. With one question, “What’s going on in this picture?” and a carefully chosen work of art, teachers can start their students down a path toward deeper learning. The Visual Thinking Strategies (VTS) teaching method has been successfully implemented in schools, districts, and cultural institutions nationwide. VTS is a learner-centered approach through which students at all levels are involved in rich, absorbing discussions.

Presenter:
Brad Hokanson, RA, PhD
Director of Educational Futures
College of Design Professor, Graphic Design Program
University of Minnesota

The Whale Dance

A deep dive (pun intended) into some current whale research being conducted by Goldbogen Labs at Stanford University and how to investigate mathematical and scientific concepts of this research through dance and movement with students. This session is geared towards teachers of grades 3-8, (but all are welcome!) and is an adaptation of workshops presented at Weber State University's STEAM Professional Development Day.

Presenter:
Alyssa Herzog Melby
Assistant Director for Academic Civic Engagement
St. Olaf College