Adventures in STEAM
Transitioning from a Science Fair to an Interactive STEAM Showcase

adventure is out there.

Casey Shea
Curriculum Coordinator for Maker Education
cshea@scoe.org
@caseymaker

Dan Blake
Director, Innovation and Partnerships
dblake@scoe.org
@danblake51

Anna Van Dordrecht
Curriculum Coordinator for Science
avandordrecht@scoe.org
@avandordrecht

Matt O’Donnell
Tech Innovation Specialist
modonnell@scoe.org
@21Cmatt
“I believe that art and design are poised to transform our economy in the 21st century in the same way that science and technology did in the last century, and the STEAM movement is an opportunity for America to sustain its role as innovator of the world.” - John Maeda

Impetus for Change

- Broader scope for authentic audience
- More classroom-based
- More opportunities for student involvement (TK-12)
- Pedagogical and technological shifts
- Collaboration vs Competition

STEAM Defined

STEAM is an educational approach to learning that uses Science, Technology, Engineering, the Arts and Mathematics as access points for guiding student inquiry, dialogue, and critical thinking.

- Susan Riley
  Arts Integration Specialist

Elements of STEAM

purposethe reason for which something is done or created; an intention

2017 STEAM Showcase
Theme: Cause and Effect

Project Formats

- Performance/Live Demonstration (limit of 15 minutes)
- Digital Display
- Interactive Installation
- Physical Display (2D or 3D)

(Project could also be a combination of two or more formats)

# STEAM Showcase Rubric

<table>
<thead>
<tr>
<th></th>
<th>Emerging</th>
<th>Approaching</th>
<th>Proficient</th>
<th>Distinguished</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Connection to Theme</strong></td>
<td>Project demonstrates <strong>limited</strong> connection to Showcase theme.</td>
<td>Project clearly demonstrates connection to Showcase theme.</td>
<td>Project clearly demonstrates connection to Showcase theme and student(s) can articulate that connection.</td>
<td>Project demonstrates connection to Showcase theme in a novel or extended way and student(s) can articulate that connection.</td>
</tr>
<tr>
<td><strong>Purpose</strong></td>
<td>Project has no clear purpose.</td>
<td>Project's only purpose is exhibition at the Showcase.</td>
<td>Project has a purpose beyond exhibition at the Showcase.</td>
<td>Project has a clearly defined purpose beyond exhibition at the Showcase that has the potential to impact an entity beyond the student's immediate sphere.</td>
</tr>
<tr>
<td><strong>Integration</strong></td>
<td>Project includes only one STEAM area.</td>
<td>Project includes multiple STEAM areas, but they are separate.</td>
<td>Multiple STEAM areas are integrated in a way that enhances the overall project.</td>
<td>Symbiotic integration of STEAM areas is evident and vital to the overall project.</td>
</tr>
<tr>
<td><strong>Process</strong></td>
<td>Some of the following elements of the process are evident:</td>
<td>Many of the following elements of the process are evident:</td>
<td>Most of the following elements of the process are evident:</td>
<td>All of the following elements of the process are evident:</td>
</tr>
<tr>
<td></td>
<td>- documentation</td>
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<td>- organization</td>
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<td></td>
<td>- incorporation of feedback</td>
<td>- incorporation of feedback</td>
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<td>- incorporation of feedback</td>
</tr>
<tr>
<td><strong>Content Mastery</strong></td>
<td>Project demonstrates <strong>limited</strong> understanding of relevant curricular content.</td>
<td>Project demonstrates understanding of relevant curricular content.</td>
<td>Project demonstrates understanding of relevant curricular content and its applications. Student can articulate how his/her design relates to curricular content.</td>
<td>Project demonstrates understanding of relevant curricular content and its applications. Student(s) can articulate how his/her design enhances others' understanding of content.</td>
</tr>
<tr>
<td><strong>Exhibition</strong></td>
<td>Artifact/product exhibited</td>
<td>Artifact/product exhibited and some explanation given</td>
<td>Artifact/product exhibited and detailed explanation given demonstrating some understanding of process and product connections</td>
<td>Artifact/product exhibited and detailed explanation given demonstrating full understanding of process and product connections</td>
</tr>
</tbody>
</table>

# Synopsys-Sonoma County STEAM Showcase Schedule

<table>
<thead>
<tr>
<th>TIME</th>
<th>GREEN</th>
<th>ORANGE</th>
<th>PURPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00am</td>
<td>Check-in &amp; Project Setup</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:00am</td>
<td>Event Overview &amp; Orientation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:00am</td>
<td>Project Evaluations</td>
<td>Hands-on Activities</td>
<td>Lunch/Project Viewing</td>
</tr>
<tr>
<td>12:00pm</td>
<td>Lunch/Project Viewing</td>
<td>Project Evaluations</td>
<td>Hands-on Activities</td>
</tr>
<tr>
<td>1:00pm</td>
<td>Hands-on Activities</td>
<td>Lunch/Project Viewing</td>
<td>Project Evaluations</td>
</tr>
</tbody>
</table>

**1:50pm**: Project Breakdown & Clean-up
Teacher/Project Mentor Responsibilities

- Submit Intent to Participate form, Disclaimer form, & Participant Information forms
- Check project feasibility
- Ensure project content & artifacts are appropriate for public display
- Assist with setting project benchmarks
- Provide project feedback (use rubric as applicable)--portfolio must show evidence of feedback
- Select projects to be displayed at Showcase based on allocation
- Ensure all documentation is in the project folder before the Showcase
Student Responsibilities

- Understand project & Showcase expectations prior to undertaking a project
- Document all stages of the project via videos, text, pictures, slides, etc.
- Seek out and incorporate feedback from project mentor and others as applicable
- Upload documentation and feedback to official Google Drive folder prior to the Showcase
- Set-up project by specified time on the day of the Showcase (please note: all devices needed must be provided by the student and fully charged)
- Students must attend the Showcase to present and receive feedback on their project
Deadlines

- **November 3rd**: Intent to Participate form due (submitted by teacher/project mentor)
  - Allocation of spots will be sent by **Nov. 17th**
- **December 8th**: Disclaimer form submitted by teacher/project mentor
- **January 19th**: Google Forms submitted by teacher/project mentor to articulate:
  - School
  - Grade Level(s)
  - Individual or Group Project
  - Name(s) of Individual(s) or Group
  - What format the project will take

**PLEASE NOTE**: ONE FORM SUBMITTED FOR EACH PROJECT

- **February 1st-March 2nd** *(ongoing)*: Documentation submitted to bit.ly (as individual project folder)
  - All documentation must be in the folder by March 2nd. **Please start early!**
Badges are awarded for all projects receiving “Distinguished” in one or more rubric categories

STEAM Project Support

- **SCOE Design Lab Classes**
- SCOE Representatives available for support
- Sonoma State University Student Support

Showcasing Tool Exploration (2 Rounds)

Student Projects

Student Projects

Teacher Reflections

“We do not learn from experience...we learn from reflecting on experience.”
—John Dewey

My students were so excited about presenting and were energized and inspired by the day. The activities were especially interesting and fun and the evaluators did a wonderful job interviewing students. It was so great for my students to have a large and authentic audience for their projects!”
The shift to a STEAM showcase **opened up the possibilities for our students' inquiry.** It also opened up the process of going about a project, allowing it to be more creative and **fit with the design/test/redesign process of engineering standards in NGSS.** My class had a blast working in teams in class, knowing there was a push to make their projects ready to present by the showcase date, but also knowing that the showcase was a place for them to get more feedback to redesign rather than expect it to be perfect and "done". **They grew more confident in explaining their thinking and process** as we did so in class and then finally presented to experts from the industry who asked questions and evaluated at the showcase. **STEAM showcase was a great impetus for me as a teacher to try something new and grow as well.** Win-win!
If we weren’t at this fair, we wouldn’t have done all of this. We would be doing reading, writing and arithmetic. They do have some exposure to science - we do a little bit in the class - and partner with another class. ... But this has been two science projects that are just theirs.

Were the students able to integrate their projects with classroom experiences?
What does this mean for you???

● How can you apply this idea to your context?

● What support and resources do you need to make this happen?

What comes next?

For Sonoma County...

Event Logistics

Date: Friday, March 2, 2018
Time: 9:00am-2:00pm
Location: Sonoma County Fairgrounds
(Saralee's Barn & Finley Hall)

STEAM Showcase Themes:
- Systems and System Models
- Creativity in Community


For you...

“I hope this Showcase inspires more like it in the state and countrywide! Thank you!!”