

Design and Maker Class Colloquium
August 2016, Windward School

Coding + Art

Partnering art and computer science students
to create interactive art projects



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Marlborough School

- Located in Hancock Park
- All girls (~500 total)
- Middle School (7-9) and Upper School (10-12)




My background

- Mathematics
- Software development
 - Antivirus security
 - Computer Graphics / User Interface
 - Computational Biology / Bioinformatics

- 3rd year at Marlborough School
- Math and Computer Science Instructor
- STEM Program Co-Head

Co-conspirators



Andy Witman
Science Instructor
Robotics Coach
STEM Program Co-Head



Kathy Rea
Visual Arts Instructor

Why?

1. Computing has become ubiquitous, and is used in every field.
2. All work is interdisciplinary.

STEM Program at Marlborough

Emphasis on STEM activities that are:

- Collaborative
- Creative
- Interdisciplinary

Computer Science curriculum:

- Processing (-> Arduino) -> Java
- Python, Scratch in Math and Science classes
- Focus on computer graphics / artistic creation

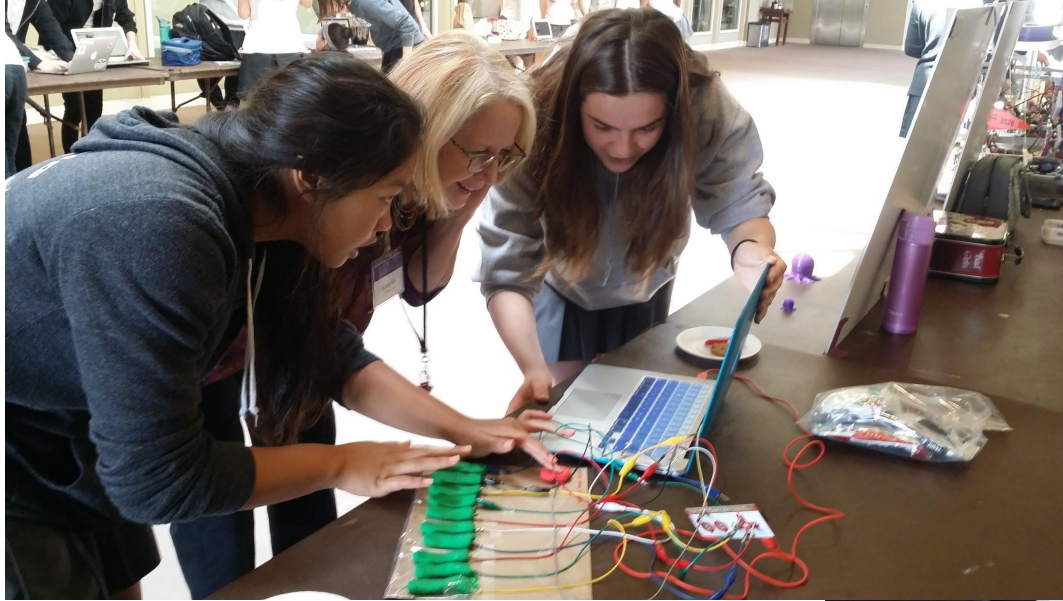
STEM + Arts Gallery



STEM + Arts Gallery



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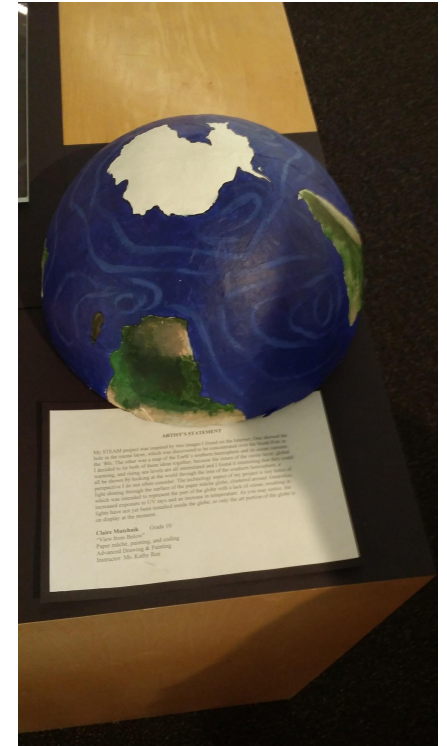
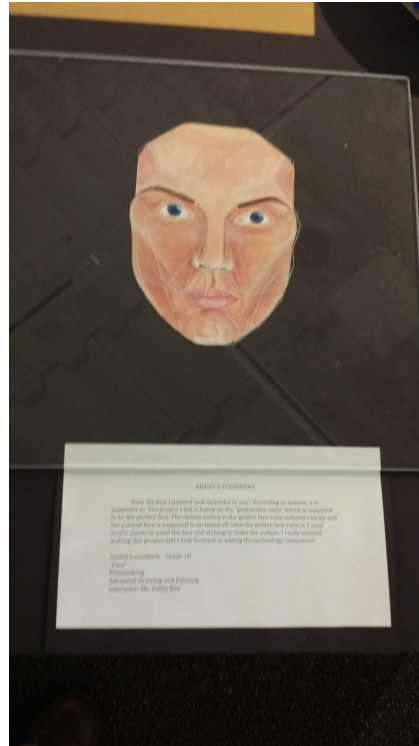
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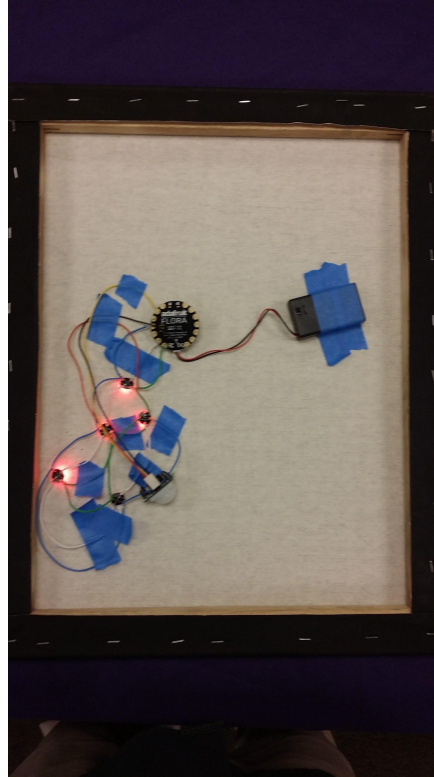
STEM + Art Partner Projects

- Collaboration between Advanced Art students (Kathy Rea) and 1st year coding students.
- Art students initiated project, with requirement that it involve STEM in some way.
- Option: Partner with coding student to use Arduino micro-controllers to enhance the project.
- Coding students had started with Processing, and had been introduced to Arduino.

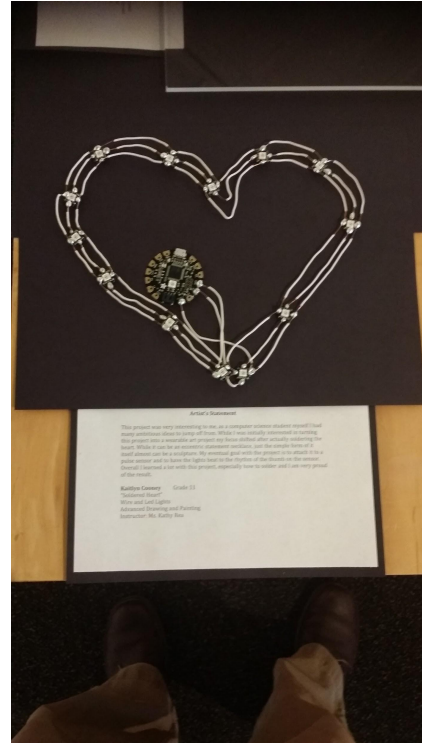
STEM + Art Partner Projects



STEM + Art Partner Projects



STEM + Art Partner Projects



Lessons

- Not all students are interested in electronics / hardware. Give coding students a chance to play with Arduino early in the year, to see who's interested.
- Have these students present prototypes and ideas to art students at beginning of project -- show what's possible.
- Have students collaborate more during the design process.
- Start collaboration early in the year if possible.

Observations

- Computers are frustrating (90-10 rule).
- Get started, see what works with your students, and iterate.
- Embrace change (hardware, operating systems, programming languages).
- Encourage student interest.
- It is extremely helpful to have supportive department heads and administrators.

Thank you!



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