# LUSD STEAM Festival Assignment May 13-14, 2016

## Friday 5-8 PM

## Saturday 9-Noon

## Science, Technology, Engineering, Art and Math

# Assignment for Secondary Grades

The Friday night STEAM Festival promises to be an unforgettable event that you won't want to miss. It's happening at Cabrillo High School. For more information go to: http://www.ccstemexpo.org/ and click on "STEAM Festival".

There will be a variety of hands-on demonstrations of various scientific principles and/or engineering. You are to study some of these, sketch how the demonstrations work, and write a few brief sentences discussing the scientific principles or engineering at work.

You must choose 4 different demonstrations.
You are to choose one demonstration from four different categories.
For each demo sketch a figure showing how the apparatus was set-up. Label the figure with important pieces of equipment. For many demos you should draw both a before and an after picture.
In a few sentences, explain the scientific concepts or demonstrated engineering (see the next page for a template).

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| **Group 1**: **Computer Science** | o iOS App Development (Booth 15)<br>o Computer Coding (Booth 22) | o Saturday Only<br>o Saturday Only |
| **Group 2**: **Environmental Science** | o Water and Air Quality Testing (Booth 5)<br>o Milkweed and Bee Feed seed Packets (Booth 10)<br>o Water Shed Model (Booth 9) | o Friday Only<br>o Friday Only<br>o Friday Only |
| **Group 3:** **Health Science** | o MeCP2 Patient Case Study (Booth 17)<br>o Effects of Second Hand Smoke (Booth 16)<br>o Sickle Cell Anemia (Booth 17) | o Friday Only<br>o Saturday Only<br>o Saturday Only |
| **Group 4**: **Life Science** | o Diatomaceous Earth (Booth 2)<br>o Interactive Marine Aquaria- with UCSB (Booth 31)<br>o Marine Life & Touch Tanks- with Cabrillo High (Booth 27)<br>o Microscope Demonstrations (Booth 2) | o Friday Only<br>o Friday Only<br>o Friday and Saturday<br>o Saturday Only |

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| **<u>Group 5</u>: Physical Science** | o Trebuchet (Booth 43)<br>o Bottle Rockets (Booth 44)<br>o Infrared Camera Demonstration (Booth 21)<br>o Making Oobleck (Booth 33)<br>o Cloud in a Bottle (Booth 37)<br>o Air Rockets (Booth 42)<br>o Display of Sky Dive Santa Barbara Videos & Parachute Target Contest (Booth 30)<br>o Bernoulli's Principle (Booths 11 & 29)<br>o Making Slime (Booth 32) | o Friday Only<br>o Friday Only<br>o Friday Only<br>o Friday Only<br>o Friday Only<br>o Friday Only<br>o Friday and Saturday<br>o Saturday Only<br>o Saturday Only |
| **<u>Group 6:</u> Art** | o Art Activities- Los Berros (Booth 26) | o Friday and Saturday |
| **<u>Group 7:</u> Engineering** | o LEGO Robots, iPad apps, Old Computer Reverse Engineering and More! (Booth 14)<br>o Engineering & Manufacturing Robotics (Booth 14)<br>o STEM- Hands-On with Cabrillo High (Booth 25)<br>o STEM- Hands-On with Allen Hancock (Booth24) | o Friday and Saturday<br>o Friday and Saturday<br>o Friday and Saturday<br>o Saturday Only |
| **<u>Group 8:</u> Technology** | o Soldering Practice (Booth 35)<br>o Etching, Laser Cutter and 3D Printers Demos (Booth 28)<br>o Maneuver Underwater ROV Through a Course (Booth 40)<br>o Demo of Capabilities of Spartatroniks Robot (Booth 39)<br>o Run RC cars Through a Course and Fly Drones (Booth 45)<br>o Space X- Estes Rocket Launches (Booth 41) | o Friday Only<br>o Friday Only<br>o Friday and Saturday<br>o Friday and Saturday<br>o Friday and Saturday<br>o Friday and Saturday |

Student Name: _____

Student School: _____

Demonstration Name: _____

**Sketch of Presentation**

| BEFORE | AFTER |
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Explanation of Scientific Concept or Engineering:

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Explanation of Scientific Concept or Engineering:

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**Sketch of Presentation**

| BEFORE | AFTER |
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Explanation of Scientific Concept or Engineering:

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