Magnitude.io
Powered by Curiosity

Joanne Clark
San Leandro Unified School District
San Leandro, CA 94577

February 1, 2016

RE: School CanSat Program and Budget

Hi Joanne –

We are excited to be working with San Leandro students to create an amazing experience in STEM education for San Leandro High School for the 2016 spring semester.

This letter is a summary of our conversations and provides milestones, primary objectives, and budgeting. 7 science, math, and computer science teachers will have their students participate in the program this spring both in class and/or after school.

In addition to any in-class activity, up to 32 students will participate in the program after school at the Barbara Lee Center Thursdays beginning in February 25, 2016 through May 31, 2016. The project will culminate with the launch of a high-altitude balloon on May 25, 2016 at San Leandro High.

Budget

Quantity	Price	Near Term Item	Total
2	$2,500	8 Classroom Science and Math CanSats. Hardware & Curriculum. 3D printed shell included	$5,000
0.33	$2,500	High Altitude Balloon Flight - Includes FAA clearance, logistics, hardware support, tracking and recovery	$825
40	$40	40 total hours of support Includes a minimum of 1 day/month in district for support, and reporting.	$1,600
		Subtotal	**$7,425**

Professional Development

We begin our work with a Professional Development Introduction for instructors where teachers will cover 3 subject domains: Hardware, Software and Analytics, and mapping to Next Generation Science Standards. This introduction is optional but highly recommended for optimal use in the classroom setting. The workshop will be held on February 11, 2016 at the Barbara Lee Center for Health and Wellness between 3:30 and 5:00 pm.

Program Schedule

CanSat hardware will be available at the Barbara Lee Center on or before February 25, 2016. Chromebooks with Internet access will be required for each student team (up to 4 students per team).

Classes will be held across the street from the high school at the Barbara Lee Center (BLC) on Thursdays from 3:30 to 5:00 pm.

SESSION
Teacher's Introduction
JMM - Hardware/Software Intro
BLC - Hardware/Software Intro

JMM - Barometric
BLC - Barometric
JMM - Barometric
BLC - Barometric
JMM - Temp/Humidity
BLC - Temp/Humidity
JMM - Temp/Humidity
BLC - Temp/Humidity

DATE	SESSION
5-Apr	JMM - Magnetometer
7-Apr	BLC - Magnetometer
12-Apr	JMM - Magnetometer
14-Apr	BLC - Magnetometer
19-Apr	JMM - GPS
21-Apr	BLC - GPS
26-Apr	JMM - GPS
28-Apr	BLC - GPS

3-May	JMM - Air Quality / Weather
5-May	BLC - Air Quality / Weather
10-May	JMM - Air Quality / Weather
12-May	BLC - Air Quality / Weather
17-May	JMM - Predictions
19-May	BLC - Predictions
24-May	JMM - Preparation
25-May	High Altitude Balloon Launch
26-May	JMM - Report
31-May	BLC - Reports

Flight Readiness and Launch Experience

Magnitude will work with the teachers and students to ensure each school group is prepared for the high altitude balloon experience.

Support

Magnitude will provide online support by email or phone during the school year. It will collaborate with San Leandro Unified teaching staff to develop supplemental tracks based on the interest, goals, and objectives of each individual teacher and their program. In addition, Magnitude will be in district at least once per month to gather feedback, answer questions, and attend a monthly project review meeting.

Mapping to the New Standards

Magnitude.io
Powered by Curiosity

The Magnitude program is a modular, multi-disciplinary framework that is guided by the Next Generation Science Standards 3-dimensions architecture. This includes Science and Engineering Practices (SEPs), Disciplinary Core Ideas (DCIs), and Crosscutting Concepts (CCCs) for grades 7 and 8 in this first year cohort, and engagement and support for grades 9-12 under the same NGSS framework.

The Magnitude framework engages through Science and Engineering Practices:

- Asking questions and defining problems
- Planning and carrying out investigations
- Analyzing and interpreting data
- Developing and using models
- Constructing explanations and designing solutions
- Engaging in argument from evidence
- Using mathematics and computational thinking
- Obtaining, evaluating, and communicating information

With the addition of the optional International Space Station experiments beginning Fall 2016, the program touches on every Disciplinary Core Idea:

- Physical Science
    - Matter and its interactions
    - Motion and stability: forces and interaction
    - Energy
    - Waves and their applications in technologies for information transfer
- Earth and Space Science
    - Earth's place in the universe
    - Earth's systems
    - Earth and human activity
- Engineering Technology and the Application of Science
    - Engineering design
    - Links among Engineering, Technology, Science, and Society
- Life Science *(optional – Fall 2016)*
    - From molecules to organisms: structures and processes
    - Ecosystems: interactions, energy, and dynamics
    - Heredity: inheritance and variation of traits
    - Biological evolution: unity and diversity

We are thrilled to be working alongside you, your staff, teachers, and students in this ground breaking program. Please let us know if you have any questions. Our virtual door is always open.

A posse ad esse!

- *Ted Tagami*