

|| STEM LEADERSHIP

Bringing STEM To Our School Henry David Thoreau Elementary Through Family/Teacher Partnership

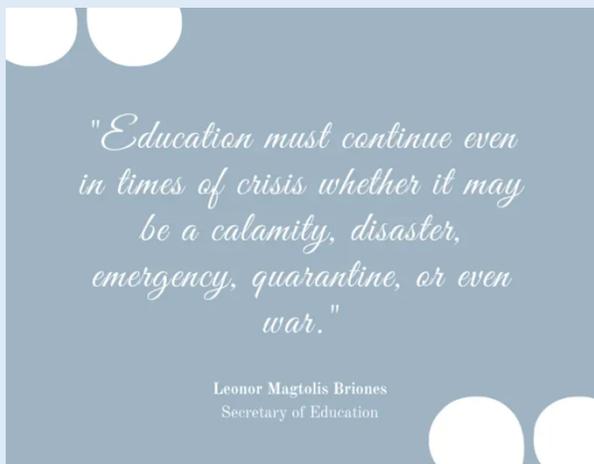
By Eliana Arias-Dotson

|| January 31, 2022

OVERVIEW

1. Project choice: Option 1 - Implementation of a Professional Development Exercise

A. Project Justification



The impact of the Covid-19 pandemic have led education into unexpected paths where prioritizing has to be done, focusing on core subjects like reading, writing and math and having to put aside other important aspects in the foundation built during elementary school like science, social

studies, art, STEM etc.

Whether educators teach remotely, in person or hybrid model, our teachers seem overwhelmed fulfilling the increasing demands to identify, address and to some extent even solve all the social-emotional and academic gaps students continue to navigate through since the beginning of the pandemic. Despite the efforts, the challenges faced in the past year had already created a difficult path for schools and teachers to bring students to at least the expected level and that's why *the partnership between families, teachers and schools perhaps could offer a solution*. Our community counts with skilled and highly educated parents who could contribute to a diverse range of knowledge and experiences to our students.

STEM education is a hands-on endeavor that welcomes the the integration and interdisciplinary approach to science, technology, engineering, and math and we can explore ways to facilitate these lessons that are now conditioned, more than ever by time, safety precautions, spatial limitations, changes to students' schedules and the need for continuous adjustments and flexibility. The need to find ways to help all our students to close this gap in STEM education is becoming each day more and more relevant and we, parents, can be part of the solution.

Studies show that building solid parent–teacher relationships is key to student success. We all can help to achieve the common goal of offering the best possible options and opportunities to our children when we work together as a community. Although poverty, literacy, time and many other problems are limiting factors for families to engage in many children’s educations, when working as community we can build strong, bridges of communication, collaboration and consistent support to guarantee we all can overcome the challenges of this time and create a long- lasting partnership to the student’s success.

I propose creating and facilitating a website with STEM content that aligns with the NGSS and LWSD standards to create a bridge of collaboration and partnership between families and our school. The STEM website will have content that can easily be brought to the classroom with engaging NASA resources and activities and complement the AMPLIFY curriculum followed by our school. This partnership can offer a glimpse of the power of working together as a community and the opportunity to explore a model that can be implemented at a longer term.

B. Project Description

i The project suggest the following:

- 1) March 9th – Henry David Thoreau Elementary Staff Meeting Seminar/Webinar in the form of a power point presentation introducing with brief discussion about
 - a. The importance of STEM specially during these times
 - b. What I have learned from teacher/parent collaborations through the years at Thoreau Elementary
 - i. NASA/ORION/Artemis in the Classroom (K-4 grade)
 - ii. Career Week (3 grade)
 - iii. First time authors (3 grade)
 - c. Introduction to the “Pilot STEM Teacher/Parent Partnership Website” that contains curriculum-based projects/lessons/tasks from NASA and “NASA Contents” aligned with the NGSS and LWSD standards
 - d. The Pilot STEM Teacher/Parent Partnership vision
 - e. Questions/Answers
- 2) March- April: Practicum - Bringing the Pilot STEM project Teacher-Parent Partnership to classroom by bringing some of the lessons to the classroom

3) May: Reflecting on the results of “The STEM Project Teacher-Parent Partnership” and the possibilities for its future

School: Henry David Thoreau Elementary

Audience: About twenty (20) teachers from grade K to 5th grade at Henry D. Thoreau Elementary

Study body: ~450 Students

Curriculum Topics and Standards -[NGSS](#) for grades K-5th and [LWSD](#)

C. Project Scope

i *The initial webinar will be an initial effort to introduce the possibility of a long-lasting partnership between families and teachers to support STEM education and a channel of communication and collaboration that ultimately benefits all students at our school H.D. Thoreau Elementary.*

I will design and create a website that contains NASA resources that align with the Lake Washington School District (LWSD) and the four core disciplines defined by the Next Generation Science Standards (NGSS) for each grade. The resources listed on the website would align with the current AMPLIFY curriculum used by the school and will be presented as a complementary hands-on STEM activities and reinforce concepts and integrate two or more pillars of STEM (Science, Technology, Engineering and Math)

- *Physical Science*
- *Life Science*
- *Earth and Spaces Science*
- *Engineering, Technology and Application of Science*

The Pilot website will be introduced to teachers during a staff meeting on March 9th

Invitations will be open to all teachers to explore the use of the Pilot STEM Teacher/Parent Partnership Website and during the remaining month of

March, April and May I will come to the classroom to bring to the classroom the lesson the teacher considers appropriate.

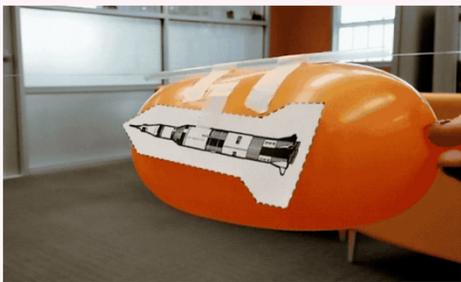
An initial reflection and evaluation of the project can be scheduled for early April to present results to the Endeavor Practicum class and a second one in early May to evaluate the results and possibility for continuing the project for the next school year.

This is a tentative timeline that depends on teachers/staff availability and constraint by COVID changing regulations.

Staff Meeting is already scheduled with Principal at Thoreau Elementary.

Figure 1. Initial Idea of Website page for teachers, Kindergarten – Physical Science – Learning about Motion and Forces -Simple Rocket Science

Kindergarten - Physical Sciences



Simple Rocket science:

NGSS Standards:

K-PS2-1, K-PS2-2

Motion and forces K-2

Video clip from the launch of GRACE-FO on May 22, 2018.

Credit: NASA/JPL-Caltech

Overview

Students perform a simple science experiment to learn how a rocket works and demonstrate Newton's third law of motion. Students will predict the motion of a rocket, perform an experiment to verify, and repeat the experiment to validate the results.

D. Deliverables

i *March 9th 2022*

Presentation –

Pilot Website

E. Possible Expected Outcome: Welcoming of the idea by some of the teachers, Questions regarding sustainability of the website.

F. Attendance: The principal had offered me a 45-60 minute slot of time during the monthly Staff meeting on March 9th. Attendance is expected by all teachers.