

Sbaggette

## Professional Development Proposal ( Final Proposal)

- **What is the title of your STEM professional development?** Integrating STEAM into ELA in the Elementary Classroom

- **Why did you select the topic?** When I approached my principal and instructional partner about creating Professional Development with STEM emphasis, they were excited. We are adopting a new reading series next year and we are in the beginning process of obtaining STEM Certification. Some of the teachers are familiar with STEM and have stressed how they would not have time to integrate STEM into their busy day. We wanted to show teachers that integrating STEM into ELA subjects is very doable. Together we decided on a Professional Development on Integrating STEM into the ELA curriculum.

- **How does your PD integrate NASA assets and/or content from the Endeavor courses.**

I plan to introduce teachers to various NASA sites that has excellent teacher and student resources learned from the Endeavor courses: Methods of Stem, Arts In STEM and Engineering in STEM .

I will introduce teachers to some of my favorite NASA resources that I learned from the Endeavour courses and I discovered from colleagues:

- **Mars Education** <http://marsed.asu.edu/> this site contains all of the Mars orbital data NASA has ever collected. This program is the pillar of the Mars Student Imaging Project and allows students and teachers to ask simple to complex questions. This site also has, “Rock Around the World” Mars Scientists ask students from around the world to help them understand the planet. Students send in a rock collected by the classroom from our region and they will

use a special tool like the one on the Mars Exploration Rover to tell the class what it's made of.

- <https://mars.nasa.gov/mer/classroom/>
- <https://www.nasa.gov/audience/foreducators/k-4/classroom-combo> - This site contains lessons to enhance STEM curriculum and many educational resources.
- **Who is your proposed audience (minimum 24)?** The proposed audience will be 6 first grade teachers and 6 second grade teachers. Each of these teachers are self-contained and teach all subjects to 18 -20 students. The total number of students will be approximately 200.
- **What STEM concepts or learning goals will you and your materials address which can potentially replace other classroom activities?**  
Teachers will use Children's Literature to teach Science and Engineering Standards, while also teaching ELA Standards. Teachers will learn to use fiction and nonfiction books and children's literature to guide science instruction in a way that will replace teaching from standard Science Text book. They will be introduced to the tradebook list from NSTA, that have books to introduce science and STEM subjects. Teachers will learn to use the 5E Lesson format to design lessons and learn to teach their students to use the Engineer Design Process to better understand science concepts, define engineering problems, and use data to solve real world problems. Also teachers will be introduced to a KLEWS chart, where students give evidence from experiments and demonstrate science knowledge of vocabulary.
- **List NGSS and CCSS or your state standards.**
  - 1.Space Systems: Patterns and Cycles
    - 1-ESS1-1. Use observations of the sun, moon, and stars to describe patterns that can be predicted.
    - 1-ESS1-2. Make observations at different times of year to relate the amount of daylight to the time of year
  - 2.Earth's Systems: Processes that Shape the Earth

2-ESS1-1. Use information from several sources to provide evidence that

Earth events can occur quickly or slowly.

2-ESS2-1. Compare multiple solutions designed to slow or prevent wind or

water from changing the shape of the land.\*

2-ESS2-2. Develop a model to represent the shapes and kinds of land and

bodies of water in an area.

K-2.Engineering Design Students who demonstrate understanding can:

K-2-ETS1-1. Ask questions, make observations, and gather information about

a situation people want to change to define a simple problem that can be

solved through the development of a new or improved object or tool.

K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate

how the shape of an object helps it function as needed to solve a given

problem. K-2-ETS1-3. Analyze data from tests of two objects designed to solve

the same problem to compare the strengths and weaknesses of how each

performs. The performance expectations above were developed using

• **How and where do you intend to carry out your PD?** The PD will be on March 15<sup>th</sup> during our grade level meeting lasting 1-2 hours. Teachers will have access to computers or their chrome books.

• **What, in general, will your pre-survey and post-survey ask?** The teachers will rank their answers from 1 – 5, with 1- the least amount of knowledge to 5 - have knowledge of and could teach it to others. They will circle their answers with red ink.

Are you familiar with STEM with a ranking 1 2 3 4 5

Are you familiar with Engineer Design Process 1 2 3 4 5

Are you familiar with the 5E Lesson Plan 1 2 3 4 5

Are you familiar with the Engineering Standards 1 2 3 4 5

Post Survey – I will return the pre-survey back to the teachers and they will circle how they feel about the questions using green ink. This will allow me to quickly access how the teachers feel about the PD.

- **What outcomes or expectation do you hope to see for your educators?** I hope to see teachers integrating STEM lessons into their everyday curriculum by using Children's Literature . I also hope teachers will make lessons more student centered by using the 5E Lesson Plans and allowing the students to use the Engineer Design Process to solve real world problems

- **How will you follow up with the teachers in attendance?** I will follow up with teachers through weekly Grade Level Meetings. We also have Observe Me Days, which allows us to observe colleagues and learn from each other and make suggestions.

- **What data collection methods (e.g. surveys, interviews) will you use to analyze the PD's success?** I will use google forms because this will allow teachers and myself to quickly answer and review the surveys. I will also review the surveys answered from the Observe Me days.