

STEM Leadership Seminar Proposal

**By
Star Treff**

I. Title of the Project

Integrating Picture books and Engineering Challenges in Elementary Classrooms

II. Why I selected this topic:

I sent out a survey to my staff and these were the highest points of interest when it came incorporating S.T.E.A.M. in the classroom.

III. How does my PD integrate the Endeavor courses I took:

The courses I have taken with the Endeavor program have been The Arts in STEAM, Methods of STEM education, and The E in STEM:Engineering. I plan on incorporating all three courses. The Arts course opened my eyes to all types of children's literature geared towards engineering. The Methods course will be highlighted by using the EDP: Engineering Design Process, in my presentation. Finally, the Engineering course helped me to understand the importance of design and gave me different online resources to pull from when it comes to planning an idea.

IV. My Proposed Audience:

My proposed audience will be my 33 staff members. All the teachers and administration will serve in the PD. Cooley Ranch is a K-6 elementary school we teach all subjects.

K-3rd teach up to 24 students, while 4th-6th can have up to 30 students in their classes.

V. The Learning Goals:

I want to expose my staff to the EPD and see how it connects to things they are already

doing in the classroom(ELA). I want it to be seen as an addition to their teaching not something new.

VI. NGSS and CCSS standards

NGSS

K-2-ETS 1-1.

Asking Questions and Defining Problems

Asking questions and defining problems in K–2 builds on prior experiences and progresses to simple descriptive questions.

- Ask questions based on observations to find more information about the natural and/or designed world(s).

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-ETS 1-2.

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-ETS 1-3.

Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

TS
1-1

.

Generate and compare multiple possible solutions

-E Constructing Explanations and Designing Solutions

TS
1-2

Constructing explanations and designing solutions in 3–5 builds on K–2 experiences and progresses to the use of

.

evidence in constructing explanations that specify variables that describe and predict phenomena and in designing multiple solutions to design problems.

- Generate and compare multiple solutions to a problem based on how well they meet the criteria and constraints of the design problem.

to a problem based on how well each is likely to meet the criteria and constraints of the problem.

3-5 **Plan and carry out fair tests in which variables**
-E **are controlled and failure points are considered to**
TS **identify aspects of a model or prototype that can be**
improved.

1-3
. **CCSS Integration of Knowledge and Ideas:**

Key Ideas and Details:

CCSS.ELA-LITERACY.RL.K.1

With prompting and support, ask and answer questions about key details in a text.

Key Ideas and Details:

CCSS.ELA-LITERACY.RL.1.1

Ask and answer questions about key details in a text.

Key Ideas and Details:

CCSS.ELA-LITERACY.RL.2.1

Ask and answer such questions as *who*, *what*, *where*, *when*, *why*, and *how* to demonstrate understanding of key details in a text.

Key Ideas and Details:

CCSS.ELA-LITERACY.RL.3.1

Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

Key Ideas and Details:

CCSS.ELA-LITERACY.RL.4.1

Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

Key Ideas and Details:

CCSS.ELA-LITERACY.RL.5.1

Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.

Key Ideas and Details:

CCSS.ELA-LITERACY.RL.6.1

Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

VII. How and Where:

I plan on asking my principal if I can schedule a PD day on a Wednesday staff meeting. It will be 1 hour long and I would like to meet in the computer lab, Room 8.

VIII. Expectations or hope for PD:

For teachers to go back and try it with their classes. I also hope they see that they are already doing these things they are just geared toward Science and Engineering.

XI. Follow Up:

At the end of my presentation, I will challenge the teachers to go back and try it with their classes within the next 2 weeks. I will then send out a follow-up survey to see how it went.