

Meghan Tepfenhardt
STEM Proposal
Using the Engineer Design Process in an Integrated and Authentic Project Based Learning
Design Challenge

Submit a 1/2-page project proposal plan which includes the following:

1. What is the title of your mini STEM professional development?

Using the Engineer Design Process in an Integrated and Authentic Project Based Learning
Design Challenge

2. Why did you select the topic?

I am guided the 6th grade faculty through a LI Water Quality Design Challenge. As the STEAM teacher in our building along with the sixth grade teaching team, we have created a shared vision in that we want our students to have authentic learning experiences that enable them to become more informed citizens and have a greater understanding of their community while also engaging in the democratic process to advocate for change.

3. Who is your proposed audience? Which teachers will you serve with your PD and activities?

What grades, subjects, and how many students do they teach?

I am the K-6 STEAM teacher and this will serve the 6th grade teachers as my audience.

4. What “general” science or mathematics concepts or learning goals will you and your materials address which can potentially replace other classroom activities?

This unit will incorporate crosscutting concepts, science and engineering practices and disciplinary core concepts as well as budgeting and measuring, and reading strategies of informational text.

- Students will learn about life sciences and the ecosystems of our local bays
- Students will evaluate competing design solutions for maintaining biodiversity and ecosystem services
- Students will create budgets for their stormwater treatment design
- Students will continue to develop reading strategies for informational text

5. How and where do you intend to carry out your PD? How long will the session be? When will it be held? Will teachers have access to computers?

We have met for 2 sessions and will need to meet for two additional sessions. Teachers have already expressed interest in developing this unit further for next year. Sessions are approximately 30 minutes and are held during contractual meeting times. Teachers have access to laptops and computers.

6. What outcomes or expectations do you hope to see for your educators?

It is my goal we can build a shared vision of a unit in which we share responsibility to facilitate learning in various content areas to create a shared understanding of the essential question “How can I positively contribute to the quality of our water?”. This unit focuses on learning about the current landscaping practices and stormwater treatment used on school grounds for the purpose of creating solution designs for improvement.

7. How will you follow up with the teachers in attendance?

This is an ongoing process in which communication is continuous via meetings, emails and sharing content in which recommendations are suggested.