Covey Denton

Proposal Submission. Submit a 2-page project proposal plan which includes the following:

• What is the title of your STEM professional development?

HyperDocs in the High School Classroom

• Why did you select the topic?

Our school just went forward with one-to-one technology in our high school classes. Students were required to purchase one of several windows based laptops for use during school hours. Our teachers received no training about how to best implement the technology in the classroom. Many of our high school teachers are retired school teachers who still need help checking email and changing login passwords. Unfortunately, the laptops are being used to watch YouTube videos and take notes and not much else.

I see a great need in our classroom to expose teachers to the possibilities of more self-paced individualized learning. I would like to create a HyperDoc training and instruct the teachers from a student's perspective. In the first training, I will send participants a HyperDoc on a topic they have little idea about: the NASA based resources. They will explore hands on simulations from PHet (my Sun Earth and Moon Course introduced me to those sites—I think my Math and Science Teachers will benefit), they will explore some NASA site pages and resources and then they will have the opportunity to take a Google Quiz and demonstrate mastery of the content.

In the second part of the session, I would like to break it down for them and give them a step-by-step guide to creating their own HyperDoc as well as provide them with a list of NASA resources applicable to their specific classroom content in hopes of inspiring some cross-curricular collaboration.

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

In the HyperDoc, teachers will explore several interactive simulations from the PHet simulation page. They will also explore NASA based information and receive a cross-curricular guide to tying in NASA based resources within their specific subject.

• Who is your proposed audience (minimum 12)? Which teachers will you serve with your PD and activities? What grades, subjects, and how many students do they teach?

I propose to provide this professional development to our middle and high school teachers. We are a very small school with approximately 150 students in the 8-12 grade. At the small school, we all wear many hats and they each teach multiple subjects.

• What STEM concepts or learning goals will you and your materials address which can potentially replace other classroom activities? List NGSS and CCSS or your state standards.

NC Standards for Technology: Grade 8

8.TT.1 Use technology and other resources for assigned tasks.

8.TT.1.1 Use appropriate technology tools and other resources to access information (search engines, electronic databases, digital magazine articles).

Grade 9-12

HS.TT.1 Use technology and other resources for assigned tasks.

HS.TT.1.1 Use appropriate technology tools and other resources to access information (multi-database search engines, online primary resources, virtual interviews with content experts).

HS.TT.1.2 Use appropriate technology tools and other resources to organize information (e.g. online note-taking tools, collaborative wikis).

NGSS

HS-ETS1-4

Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.

Systems and System Models: Crosscutting Concepts

Models (e.g., physical, mathematical, computer models) can be used to simulate systems and interactions—including energy, matter, and information flows— within and between systems at different scales. (HS-ETS1-4)

• 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 weekly departmental, full faculty and/or management team meetings. During one of our Wednesday sessions, I would like to hold the PD. It will be two 30-45 minute sessions. One allowing teachers to explore the HyperDoc and associated links and take the quiz. The following to show the teachers how to create their own document for student learning. Teachers will bring their laptops to participate.

• What, in general, will your pre-survey and post-survey ask?

I would like to assess prior knowledge of the NASA content covered in the HyperDoc as well as the staff familiarity of the HyperDoc. After the initial training, participants will complete a short quiz on the content that was covered. Those that do not score a high grade can see what student feedback would

look like as it redirects them back to the HyperDoc to complete the training again. The final feedback would be a post-survey about the potential usefulness of the HyperDoc technology in their classroom as well as the likelihood to use any of the shared resources, HyperDocs or technology in their classroom.

• What outcomes or expectation do you hope to see for your educators?

I hope to show them how they can use HyperDocs to allow for more self-paced inquiry. I would like to show them simple tools from Google that would help them reduce grading time and also provide for multiple-modalities of learning. I would like to share how easy it is to differentiate instruction for students using technology. These are all "best practices" that I have learned through my classes at Endeavor. I would also like to introduce them to the PHEt simulations and show them how they can easily incorporate other resources from NASA into the activities they already do in their classrooms.

I expect a lot of push back and teachers say "I'll never remember how to do this!" Many of our teachers have been teaching a long time and are resistant to change. That said, several of the staff are newer hires still looking to prove their worth and willing to try new innovative things.

• How will you follow up with the teachers in attendance?

Since we are a small school, I plan to do face to face follow up as well as email. I plan to sit down with each teacher individually and help them create their own HyperDoc and access resources if they are willing.

 • What data collection methods (e.g. surveys, interviews) will you use to analyze the PD's success?

I will use a quiz on the HyperDoc to show mastery of content (pre and post quiz to hopefully show growth). I will also have a survey pre and post PD to assess the teachers feeling and perceptions of the training.