

Eyes on Exoplanet PearDeck by Craig Parker

I would like to show my fellow instructors how to use PearDeck by introducing them to “Eyes on Exoplanets”. This is a desktop application offered by the Jet Propulsion Laboratory at the California Institute of Technology. I selected this topic because I want our 21st century students to have the same passions for the elements of space as my generation did. There have been so many different discoveries outside of our solar system in the last two decades and the ability to identify exoplanets is one of them. I like the use of PearDeck because it allows my students to be interactive and answer questions anonymously. In the end they have a document they can take away for future use. Our school uses Google Slides and PearDeck works interactively with the program as an add-on. The simplicity of the use for the teacher and students both make this a nice tool.

The NASA STEM Engagement website offers a plethora of information and useful products. One of the benefits of most of the content is the palatability. During my professional development, I am hoping to expose the engagement NASA has to offer for K-12 students. If I can give the teachers a way to present this engagement, they may be more inclined to use a lot of the elements NASA has to offer.

I teach in a K-12 public school where we have the opportunity to create a solid foundation of STEAM throughout the academic careers of our students. I would like my audience to be members of elementary, middle school, and high school teachers in equal parts. Although we do not have a STEAM director or department, all of our classroom teachers have the ability to assist our students in advanced STEAM.

There are some nice activities that can be developed while exploring exoplanets. I appreciate the idea of using pi and other mathematical computations to consider movement of objects in space. These projects will allow the teachers to stop teaching about space through books and more through curiosity and visualization. These activities will cover the standards:

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- HS-ESS1-4, the use of mathematical or computational representations to predict motion of orbiting objects in the solar system.
- HS-ESS2-5: Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.
- HS-PS4-1: Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.

I want the session to be no less than an hour. After an hour and a hard day at work, teachers are shut down and no longer interested in the content of the professional development. In a small school like Lone Star, I will not advertise my professional development, but will have to recruit some fellow teachers pretty hard. It will be difficult to find six people to volunteer for professional development with no reward. I am planning on offering to grill steaks one evening. I am hoping our school is allowed to have events before January. Our campus is so far from a town that the teachers usually linger around the school before concerts or sporting events, sometime 2-3 hours. It would be an ideal time to feed teachers and offer them my professional development. With a pool of only 8 teachers to choose from, it will be difficult to get everyone together at once. After the professional development I will ask the teachers if they found the useful for themselves and if they could offer me anyone who would find the professional development useful. I would be looking to my first group of teachers for some essential advice on how to make my professional development better. I will then send out a one question survey in 72 hours to discover if the teachers followed the 72 hour rule and made plans to implement any part of the session into their regular classroom.