Title

Making math and science connections using NASA, NOAA and other free resources.

Why

I selected this topic because I gained so much in this course that I never knew existed. There is everything from raw data, and amazing images, to fully designed lessons and units. My classes each focused on readily available NASA resources, but also dropped a handful of other useful sites that were easy to add to existing curriculum, or even to build new lessons or units from the ground up. Teachers often don't have or take the time to search for resources, because they have adopted curriculum that they deem as decent. I will focus on how the Engage and Explore parts of the 5 E model are the fun ones to plan for students, and where our Endeavor resources fit so perfectly. This PD will focus on math and science, but surely technology and engineering resources will be given to all within the resources and development time.

How does your PD integrate NASA assets and/or content from the Endeavor courses? In the lead up to my PD I will ask all attendees to prepare to bring 1-3 lessons they will teach soon in math or science. They don't have to be full lesson plans, rather just frameworks of what standards will get taught. My content focus will be a short introduction on how we can take what we are already teaching, and improve on the content by adding these high value resources without reinventing the wheel. My model will be a lesson 5th grade is getting ready to teach about place value. I will show a quick glimpse of what a couple of the worksheets in our math text look like and post the standard and number of lessons needed to get the standard taught. I will also think aloud about science that we need to teach or review in the coming weeks for relevance, and also for how my engage and explore sections of 5E lessons can be improved. Next I will model how to look for resources that would be much more high interest and rigorous for students.

Who is your proposed audience? The proposed audience will be any teachers from my site TK-6 who want to attend in person. In addition, I will offer the PD virtually to anyone from my district who would like to attend. Which teachers will you serve with your PD and activities? All teachers from my site are TK-6 multiple subject general education and special education teachers with fully self-contained classrooms of between 22 and 31 students. It will be a voluntary PD we call Tuesday tidbits, which usually is attended by a dozen or more attendees.

What STEM concepts or learning goals will you and your materials address which can potentially replace other classroom activities? Our school and district right now are using only Mystery Science as a band-aid adoption, and not many are loving it. The hope is that teachers can find lessons and ideas to add to lessons within the list of resources to help bolster the current curriculum. The resources given will include all STEM resources I have compiled during this course. My focus will be on how teachers can improve the Engage and Explore sections of their 5E planning, the addition of these resources will be more far reaching than just what is laid out as first steps.

Our district uses NGSS for California Public Schools

How - My session will be 1 hour 20 minutes, and the last 10-20 minutes will be for questions/ answers or specific help with finding something a teacher can't find. I will advertise my session to my own site via email, and to the rest of the district via their Tuesday Tidbits Google landing page so that all teachers know where to find the details.

Pre-post Survey: I will give a short 8 question pre/post assessment so that I can know within the first few minutes how much teachers know about these resources, which topics they are most interested in finding resources for, grade levels attending, and attributes they hope to get from the work time together.

Outcomes and expectations planned for educators will be: Teachers gain a wealth of resources to choose from so that lessons can be improved, and connections to other teachers with similar topics so that future collaboration and lesson sharing is easily accessed.

Follow up: A week after the PD, I will email all participants and remind them to use our group Google drive as a place to leave lesson plans, ideas, links etc.

Data collection: I will ask teachers to complete the short post survey before leaving for the day, and then I will reach out to thank a quarter of the attendees with a quick email asking for more extensive feedback/suggestions.