

What is the title of your STEM professional development?	Breakout Rooms? Yes, Please!
Why did you select the topic?	I selected the topic for several reasons. I work at a relatively small high school that has a staff of about 40 teachers, and I wanted to present PD that is useful for all teachers regardless of whether or not they teach in the STEM area. As I have talked with teachers at my school, many of them have mentioned wanting to use breakout rooms (our school is 100% distance learning), but either not being sure how to effectively use them or having had bad experiences trying to use them – so there is an immediate need to support teachers.
How does your PD integrate NASA assets and/or content from the Endeavor courses?	<p>The PD uses a lesson that includes the NASA/JPL resources on data visualization: Earth heat maps, Earth carbon dioxide maps, and Earth sea temperature maps.</p> <p>Link: https://www.jpl.nasa.gov/edu/teach/activity/earth-science-data-visualizations-how-to-read-a-heat-map/</p> <p>The PD will also include references to NASA resources for teachers (links to websites).</p> <ul style="list-style-type: none"> • https://www.jpl.nasa.gov/edu/teach/ • https://mynasadata.larc.nasa.gov/ • https://climate.nasa.gov/resources/education/
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?	My proposed audience is all of the teachers at my school, which is about 40 teachers. The teachers at my school serve grades 9-12, and will be from all departments: Math, Science, English, Social Science, Visual and Performing Arts, CTE, PE, World Language, and SPED. On average, teachers have 140 students (35 students/class for 4 classes).
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.	<p>NGSS:</p> <p><u>HS-ESS2-2</u>: Analyze geoscience data to make the claim that one change to Earth’s surface can create feedbacks that cause changes to other Earth systems</p> <p><u>HS-ESS3-5</u>: Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth’s systems</p> <p>Common Core Math:</p> <p><u>HSF.IF.B.4</u>: For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the</p>

	<p>quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity</p> <p><u>HSS.ID.C.9: Distinguish between correlation and causation</u></p>
<p>How long will the session be? How will you recruit your audience? Where will you advertise your PD session?</p>	<p>The PD session will last 1 hour. Since my school is 100% distance learning and teachers are working from home, I am not able to talk to people in person, so I will recruit my audience by advertising the PD during our virtual staff meeting and department meeting and sending the staff an email inviting them to the PD.</p>
<p>To demonstrate that teachers have learned something new, you will generate a pre- and post-survey. What, in general, will your pre-survey and post-survey ask?</p>	<p>Pre-survey:</p> <ul style="list-style-type: none"> • Do you know how to create breakout rooms in Zoom or Google Meet? • Have you used breakout rooms? If so, what was your experience? • <p>Post-survey (at the end of the PD):</p> <ul style="list-style-type: none"> • What is one thing from this PD that you want to try right away? • What is one thing you want help with? <p>Post-survey 2 (2-3 weeks after PD):</p> <ul style="list-style-type: none"> • Have you used breakout rooms since the PD? • If so, did you see an increase in student engagement and/or achievement? What observations can you share? • If not, why not? • Have you explored the NASA resources that were shared with you? If so, do you plan to incorporate any resources in your lessons?
<p>What outcomes or expectation do you hope to see for your educators?</p>	<ul style="list-style-type: none"> • Teachers will learn about best practices when using breakout rooms. • Teachers will feel comfortable using the technology (Zoom or Google Meet) to create and monitor breakout rooms. • Teachers will create their own 'Breakout Room Expectations' for their students or copy the sample from the PD.
<p>How will you follow up with the teachers in attendance?</p>	<p>I will follow up with teachers in several ways. At the end of the PD (before people leave) I will ask attendees to complete the post-survey, which will be a Google form.</p> <p>2-3 weeks after the PD, I will email attendees and ask them to fill</p>

	out a second post-survey, which will also be a Google form. If we were not in distance learning, I would also follow up with individual teachers in an informal fashion though hallway/lunchroom conversations.
What data collection methods (e.g. surveys, interviews) will you use to analyze the PD's success?	I will use a Google form surveys that ask for short answer responses. I will be looking to see if teachers try using breakout rooms (incorporate breakout rooms into their teaching) and if teachers report an increase in student achievement or engagement.