STEM Leadership Seminar on [Google Classroom](#)
Three sessions on ["The Pedagogy of STEAM"](#) via zoom sessions
1. Session One: What is 5E pedagogy and how does it relate to our district expectations? With emphasis on 21 century learning skills
2. Session Two: PBL and integration of CCSS, NGSS, and application to 5E pedagogy- NASA BEST resources
3. Session Three: What is Algorithmic thinking and how does it relate to the 5E pedagogy? Harvard ScratchMIT assessments

I. This Professional Development is very important for me. I was hired at my school three years ago in the district teaching STEAM k-5. I was hired on a five year grant along with two other STEAM teachers-left the classroom to help build my passion for engineering and teaching. With proper implementation and data to support growth; I am hoping to create my position to be permanent and a model for other elementary schools. I have seen huge engagement within my classroom participation, and learners tell me daily "it is their favorite part of the day." I truly believe with the research based practice and support of the 5E pedagogical framework- that I can inspire other teachers to get "on board the STEAM train."

II. My background as a district STEAM teacher
   A. I have been a director and preschool teacher 10 years, first grade teacher 10 years, second grade teacher 1 year and whole school k-5 STEAM for 3 years.
   B. My positions in district include
      1. SD counts Math Endorsement/ Math Leader
      2. Teacher Representative for Standards based Report Card Committee
      3. K-5 STEAM teacher (specials rotations, Music, PE, Library, STEAM)
      4. Parent to three teenagers and a kindergartener in the district
III. Curriculum topics include
   A. What is the 5E model- pedagogical content (NASA resource)
   B. Applying the 5E model to district 21 century learning skills report card
   C. Supporting district expectations and school improvement plan data
      1. What it COULD look like in a classroom
      2. What it looks like during STEAM
   D. CCSS integration of essential math/literacy standards
      1. Year 2020-2021
         a) launch k-2 focus on district math/literacy data from 2019-2020 school improvement plan
         b) AVMR math WIN progressions level 1-8a
      2. Year 2021-2022
         a) launch 3-5 focus on district math/literacy data from 2020-2021 school improvement plan
         b) AVMR math WIN progression level 8b-14
   E. School Name: Robbinsdale Elementary Rapid City, SD (participants total)
      1. Specials TEAM (PE, music, library),

2. Kinder-second grade (3 teachers), first (3 teachers), second (3 teachers),
3. Third-fourth grade (teachers), fourth (teachers), fifth (teachers),
4. administrators ( ), literacy and support teachers ( ), special educators ( ),
5. paraprofessionals ( ), other school STEAM teachers ( ).

IV. Standards addressed (see appendix A)
   A. Session one:Application 5E pedagogical framework/21 century learning skills
   B. Session two:Focus on Engineer Practices integrated with CCSS
   C. Session three:Relation to algorithmic thinking (resource from coding 1:1 Harvard Univ)
      1. Computational and Algorithmic thinking rubric
      2. Cup stacking and traveling circuits code.org

V. Objective and Purpose of the Professional Development
   A. Purpose: Using Collaboration with grade levels to identify targeted skills to reinforce the classroom learning, meet criteria for our district report card, and offer authentic learning through the 5E process and pedagogy.
      1. Introduce 5E model (see appendix B)
      2. 5E model as demonstration of how it fulfills all the twenty-first century skills on SD RCAS district elementary report card (see appendix C)
         a) Critical thinking/Creativity
         b) Communication/Collaboration
         c) Character/Citizenship
      3. Share rubrics and grading of 21 century learning skills with all grade level and classroom teachers (see appendix D)
      4. Design a STEAM pacing guide that integrates core content covered in grade level curriculum (see appendix E)
         a) Math essential standards
         b) Literacy essential standards

VI. Pre Survey Questions (see appendix F)
VII. The PD agenda duration (see appendix G)
VIII. Activities and "I can statements" (see appendix H)
IX. NASA and data resources (see appendix I)
X. Follow up Activities/questions Post Survey (see appendix J)
XI. Outcomes Final Data Collection and analysis (see appendix K)
XII. Meeting with teacher grade level teams monthly to ensure integration and content support to achieve student achievement in the areas of Literacy, Math, and Reading. Teachers job is to provide me with the data that shows their students areas of need; also, have their "I can statements" so I can consistently align my lessons and integrate NGSS accordingly. My job is to deliver the NGSS lessons and use checklists and teacher designed rubrics for content, and use my 21 century skills rubric for my own personal reflection in lessons. As teachers, we have used the workshop model "I do, we do, you do" as a form of guided release of responsibility. Discovering the new pedagogy, and understanding that the 5E model switches us to "they do, we do, I do" so they have a better chance to form questions and identify problems and solutions within their own schema.