

February 1, 2020

Richard Gittins

Leadership Professional Development Proposal

1. The name of my proposal is “Forces of Flight in Elementary STEM and Makerspace”.
2. I began pursuit of my STEM leadership certificate with the intention of studying how flight simulators can be utilized to excite and engage students in the study and application of math and science. During my time in the NASA Endeavor program my library has been transformed into a Media Makerspace. For this professional development project I am planning to incorporate a makerspace component in the STEM project.
3. In the Deer Lakes School District we educate 900 students in two elementary buildings. The buildings are divided into Primary and Intermediate centers. The professional development will include the nine math/science/social studies teachers in the Intermediate Center grades 3 - 5.
4. General science and mathematics concepts will include science principles of the basic forces of flight (lift, gravity/ thrust drag), an introduction to Bernoulli’s principle and real world scenario applications of the mathematical formula $R * T = D$. Resources will include a NASA diagram “Four Forces on an Airplane” and “The Four Forces of Flight” article, The Smithsonian Air and Space Museum’s “Forces of Flight” website, and the on-line flight design application from the Indianapolis Children’s Museum. As a Makerspace component of the lesson, I will include instructions for the construction of cardboard airplanes.
5. The professional development will take place in our Media Makespace. Several of my colleagues have committed to participating in the approximately 40 minute professional development. The professional development will take place between late February and early March.
6. During Media Makerspace course time (40 minutes per six day cycle) we are going to construct cardboard airplanes as a culminating research project on the history of flight. The professional development will include lesson plans which my colleagues may implement during our history of flight research and prior to the makerspace project.

7. Colleagues who choose to participate in the STEM lesson/ Makerspace project will be informally interviewed regarding the educational outcomes and student enthusiasm.