

# Using a Robotics Competition to Teach About and Stimulate Enthusiasm for Earth Science and Other STEM Topics



Dickinson State University has put the DSU STEM Initiative to use through a number of STEM programs that encourage North Dakota students into STEM learning and careers. This initiative has been revitalized by the oil boom in our region of North Dakota and has brought to the forefront the need for STEM learning. BEST (Boosting Engineering Science and Technology) Robotics is a national program in the USA that attempts to recruit junior and senior high school students (ages 13-18) into STEM careers by showing youth how exciting these careers can be by using robotics competitions. The DSU STEM has sponsored and offered BEST Robotics to Dickinson and area schools for the past 5 years.

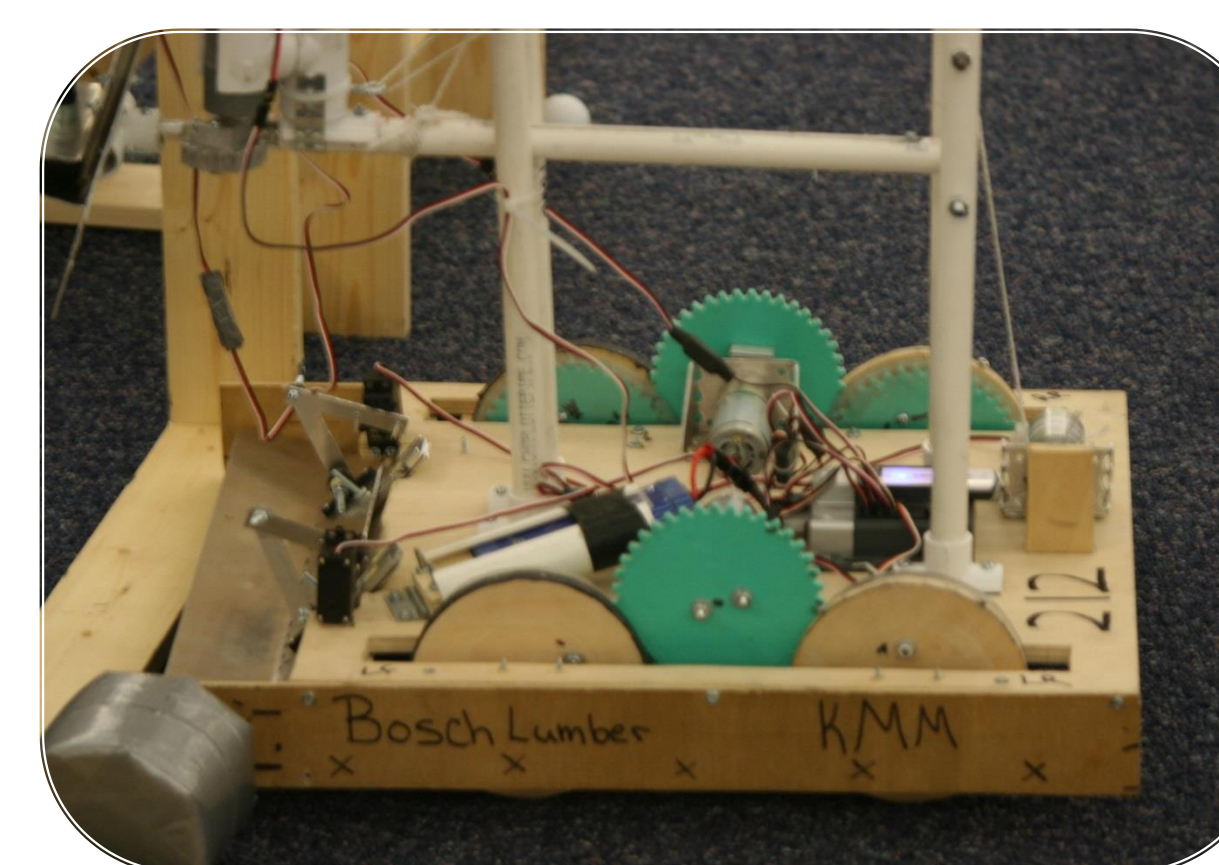


Science, Technology,  
Engineering & Math

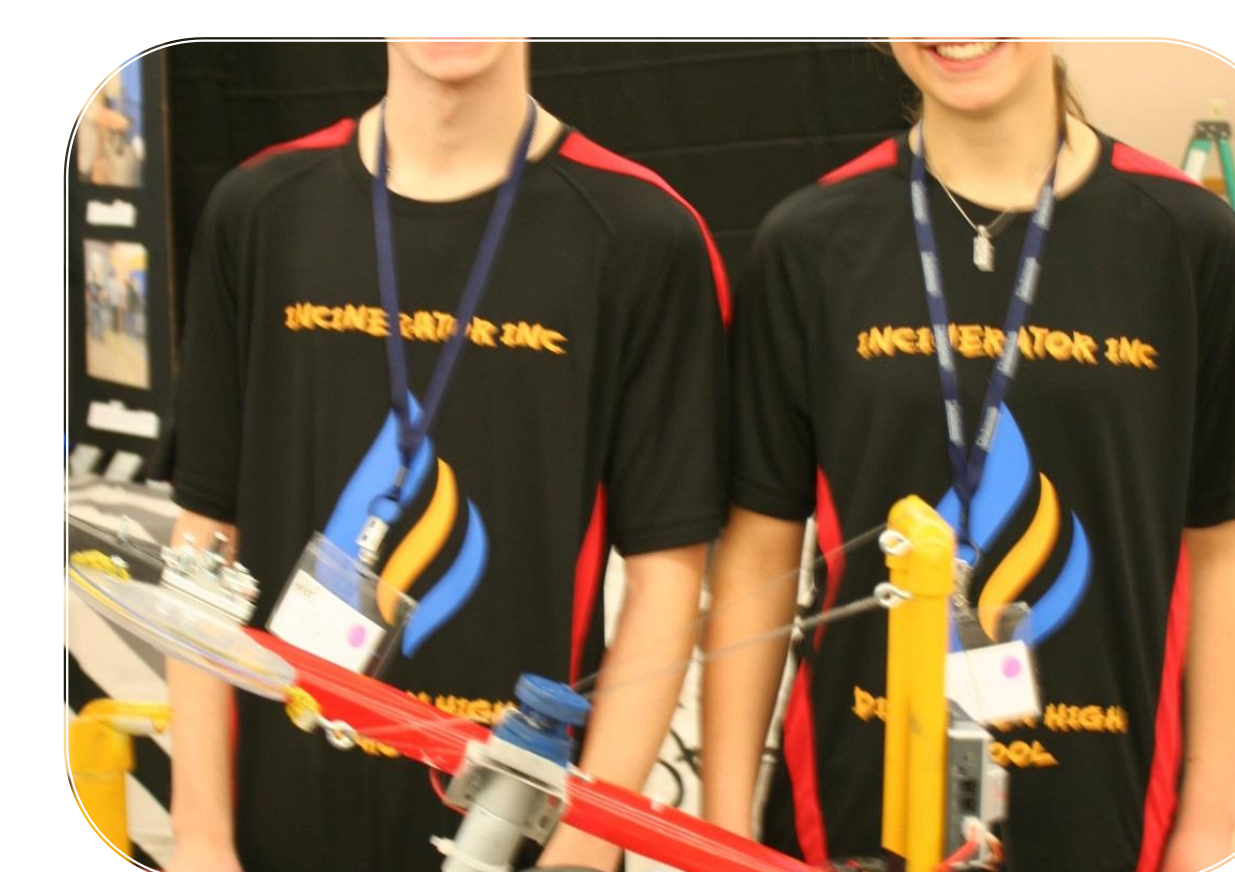
Earth Science, Mining, History  
of ND Region

Commodities, Market Value,  
Economics

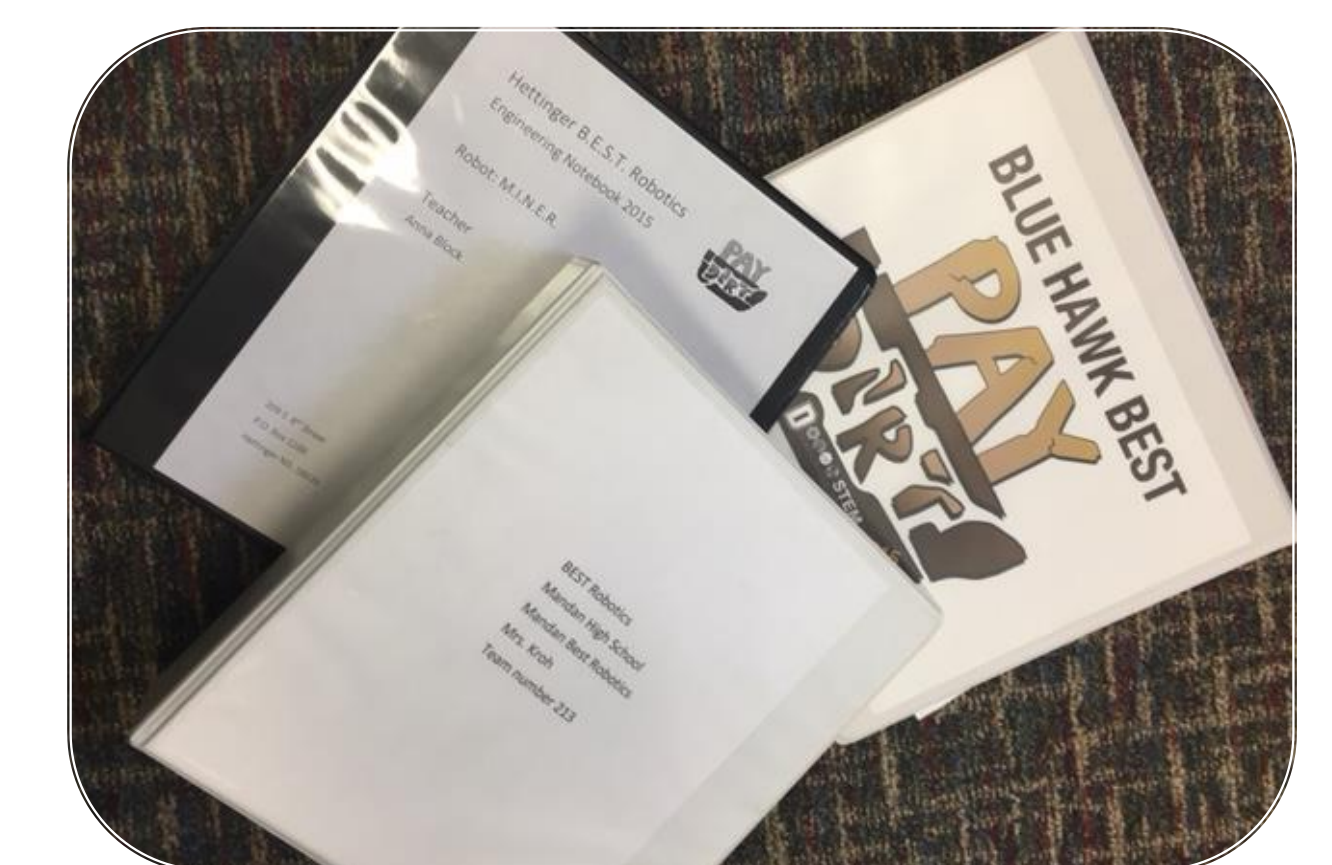
The tasks for 2015 revolved around a mining theme. The robots needed to be able to replace the filter in an air filtration system, fix broken pipes, mine simulated aggregate, coal, magnetite, bauxite, chalcopyrite, and spodumene, and move core samples. Points were awarded for successful progress toward each task based on the difficulty of the task and the market value of the commodities. While several STEM fields are covered in various aspects of the competition, the 2015 competition includes Earth science in that the students are required to research the history and science of the commodities being mined and learn about ways the commodities are important to their lives and the economy of their particular region.



Design & Build  
a Robot



Marketing  
Presentation



Engineering  
Notebook



Team Exhibit &  
Interviews



Team Spirit &  
Sportsmanship



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