

Brandon STEM “Knot Right Bridges” Qualifies for National Bridge Design

Ortonville, Michigan,

March 12, 2019

The Brandon STEM Program is proud to announce freshman team “Knot Right Bridges” of Rylee Sobecki, Madelyn Misner, and Paige Thwing have been chosen to travel to Park City, Utah to compete against 5 other teams of 9th and 10th graders from across the United States, for the National TRAC Bridge Competition. This is the third time Brandon High School has qualified a team for national competition. Chosen teams will present a PowerPoint presentation and answer questions from a panel of judges comprised of various American Association of State Highway and Transportation Officials (AASHTO), and sponsors. Judges will also examine each bridge entry to make sure it fits the specifications given in the rules, and finally a performance test will measure the stability of construction.

This year the challenge design assigned was a Tied-Arch Bridge. Knot Right Bridges, an all Left handed female team, have been hard at work designing, testing, redesigning and writing their 36 page proposal which qualified them for Nationals.

The purpose of the TRAC program is to introduce students to the wide variety of career opportunities available in the field of engineering. This particular event teaches secondary students how to apply a variety of math and science concepts to common engineering problems occurring in transportation systems. Students collect and analyze data, learn to use software programs, and test a series of models to develop their designs.



Brandon STEM Class of 22 Qualifies 63 Students to State Competition

March 16, 2019

Ortonville, MI – Brandon Science, Technology, Engineering, and Mathematics (STEM) freshmen entered the 2019 Michigan Department of Transportation (MDOT) Bridge Competition. In the 9th and 10th grade division of the competition, three-member teams design and build balsa wood Tied-arch (Bowstring) bridges. This project tests their ability to work as a team, their attention to detail, their time management skills, and their problem solving skills. To qualify for the state competition, teams are required to prepare a written bridge proposal and a bridge design, using MDOT drafting software. The freshmen have been working on this project since last October.

In total, Twenty-three Brandon teams submitted documents for consideration. Twenty-one team entries have been accepted and these teams will continue on to compete in the 9th and 10th grade division in Grand Rapids, in April, against teams from all over Michigan. Half of their score will be determined by their bridge model performance. MDOT engineers inspect the bridges for compliance to design criteria and then weigh and strength test them. Their strength to weight ratios will be calculated and compared to other competitors. The other portion of their score is based on a 7-10 minute oral presentation, again to MDOT engineers. In this presentation, teams must share their overall experience including their research, engineering design process application, and their design, construction, and teamwork challenges.

The two remaining teams, while not qualifying for the state contest, will compete against each other locally. The MDOT Bridge Challenge is in its 19th year. It is a part of MDOT's Transportation and Civil Engineering (TRAC)