



## ALTOONA AREA SCHOOL DISTRICT

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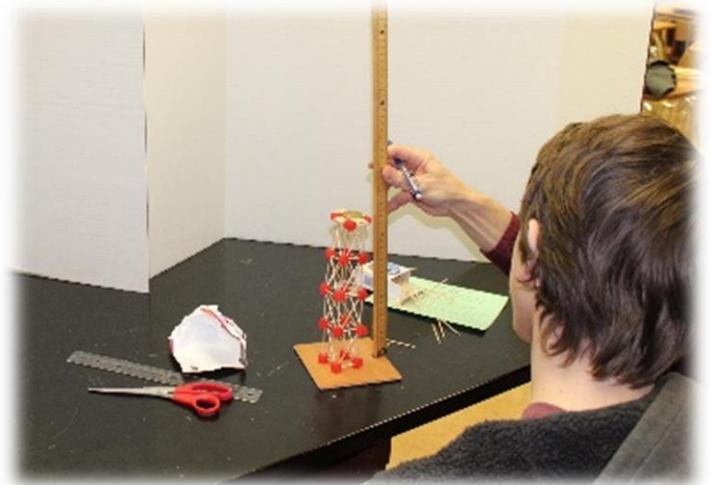
March 8, 2019

### Senior Physics Students Compete For Scholarships

On Friday, March 1, AAHS Seniors competed for scholarships valued at \$7,500 in a hands-on, project-based challenge.

The competition was comprised of two separate challenges.

1. **“Unknown Challenge” Objective:** Build a free-standing structure that can support a 20g mass as high above as possible. **Materials:** 20 g mass, 1 box of toothpicks, 1 package of fruit snacks and a 5 inch by 5 inch piece of plywood.



The students had 30 minutes to build and test the structure within the requirements provided.



2. **“Known Challenge” Objective:** Build a crane arm that could lift as much weight as possible using the materials provided.

**Materials:** Students were limited to a list of materials that were provided to them on the day of the competition.

Specific details and rules were given to the students prior to the competition. Teams were encouraged to design, construct and experiment with a prototype device prior to competing. On the day of the competition, teams were supplied with the materials and

allotted a predetermined amount of time to construct their device, test it, and then compete. No modifications were allowed after building time expired.

A 1 kg mass was connected to the rope and the winch had to be turned to lift the mass 6 inches. The mass had to be held for a count of three (3), and then lowered to the ground. This process was

repeated, adding 1 kg each time until the arm failed. The strongest arm was awarded 200 points, while each place below was awarded 10 points less.

The total points earned by each team in both the “Known” and “Unknown” challenge determined the overall winner of the competition.

The competition was organized and judged by the AAHS physics teachers.

This is the 19<sup>th</sup> year for the Physics Scholarship Competition. The competition is made possible through the generous donations of Francis Wisniewski, a 1991 Altoona Area High School graduate. The competition has become a favorite of students and is always held on an in-service day. The competition allows students to apply their science knowledge to a practical engineering situation in order to be successful.

