



NEWS RELEASE

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PLTW Aerospace Engineering Introduces Students to the Physics of Flight



Montgomery High School's *Project Lead the Way* course continues to engage students and develop their interests in possible pursuit of engineering coursework after high school. One of the latest lessons introduced students to the physics of flight.

After learning about the four forces of flight, Ms. Jennifer Duffer's students applied their knowledge of lift and drag to create an airfoil (this is the shape or a 3D cross section of a wing) to be tested in the Jet Stream Wind Tunnel.

Ms. Duffer explains, "The project requires students to start by using an online simulator to create an airfoil that generates the most lift while minimizing drag. Students then transfer that shape to the Computer Aided Design (CAD) software to print engineering drawings to use as a template while they cut their airfoil out of foam using a hot wire cutter. Then, the airfoils are placed in the wind tunnel where sensors and programs test the lift and drag of the airfoils as air passes over and under it. Students are provided with the amount of lift and drag their airfoil created as well as the ratio to lift to drag. The last step of the process is for students to analyze the relationship of the shape of their own airfoil design and amount of lift and drag."