

Learn STEM Skills, Build An Airplane!

Compete in the GAMA/Build A Plane Aviation Design Challenge



The GAMA/Build A Plane Aviation Design Challenge is a life-changing competition offering U.S. high school students the ability to improve their knowledge of Science, Technology, Engineering, and Mathematics (STEM) skills through aviation.

GAMA and Build A Plane launched the first Aviation Design Challenge in 2013 to help increase the number of young people entering the general aviation field. With the general aviation industry expecting a severe shortage of workers in the coming decades, ensuring a strong workforce of manufacturers, engineers, pilots, and maintenance professionals is critical.

The schools that enter the competition receive student and teacher copies of Fly to Learn curriculum and software powered by X-Plane. Over the course of six weeks, they learn about topics such as the four forces of flight, aspect ratio, and even advanced subjects such as supersonic flight. They then compete in a fly-off that requires them to modify a virtual airplane to fly a specific tasked mission in a simulator. GAMA takes into account the score from this flyoff, as well

as a checklist of the steps they took to complete the flight, a summary of the design changes they made to the airplane, and three videos submitted throughout the competition on what they learned. The winning school receives a two-week, all-expenses-paid trips for four students, one teacher and a chaperone to Glasair Aviation in Arlington, Washington, to build a real Glasair Sportsman airplane!

The GAMA/Build A Plane Aviation Design Challenge seeks to introduce students to general aviation while they're still in high school so that it can influence their career paths before they go to college. For those teams that compete but do not win, the aerospace STEM education alone is tremendous. For the winning team, the hands-on experience working side-by-side with experts as they build a real airplane is phenomenal. And in just a few years, the competition is already achieving success. Several of the competition's winners are now pursuing aerospace engineering degrees in universities, and both education professionals and students tout the value of the Challenge.

Students participate in a composite material demonstration.



Preparing the airframe to attach the cowl.



Students work on the wing of the aircraft.



"I can't thank you enough ... for the positive impact you are making in the life of a kid. The GAMA competition has taught us the importance of teamwork, creativity, and critical thinking."

Abri Badger, Colton Koester, Nathan Koester, and Jonathan Smythe, CHEF Homeschoolers
Cuba City, Wisconsin
2015 Aviation Design Challenge winners

"Thanks for providing this opportunity for my students, and for the generosity of your board. This competition, and ultimate victory, will be life-changing for my kids."

Grant Hanevold, Principal, Sunrise Mountain High School
Las Vegas, Nevada
2014 Aviation Design Challenge winner

For more information visit: gama.aero



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