

For the Science Gyzmos

Hands, Eyes, and Brains On Aviation STEM: Two separate Make and Take sessions (you build and keep the demo) are offered. In one period we will make an easy to use Wing on a String device. Based on Sir George Cayley's 1804 Whirling Arm that he used to study aerodynamics, this unit is constructed with PVC pipe and elbows, paper, fishing line, rubber bands, segments of drinking straw, and tape. When completed, the wing on a string apparatus demonstrates the production of lift at different angles of attack and airspeed. A great demo for the classroom. We will build foam plate gliders in another session. The popular FPG-9 Glider is constructed using a 9" Styrofoam plate, a penny, and tape. The pattern for the glider is cut from the instruction sheet and traced onto the plate. It is subsequently cut out using scissors. The glider includes a rudder and 2 elevons. After building the glider, students can practice flying the craft and make necessary adjustments to the flight controls and shift the position of the penny to make the model fly straight and level, or do turns, rolls, loops, etc. It makes a great classroom activity. Also, students can compete for who has the machine that flies the greatest distance or performs a particular maneuver.

Bio Info:

Dr. Charley Rodriguez entered aviation in 1974. Over the years, he has acquired an Airframe and Power Plant mechanics license, Private Pilot license, Inspection Authorization, and is an Aviation Safety Counselor for the Springfield Flight Standards District Office (FSDO). He has made numerous presentations at aviation conferences and has hosted scores of aviation science camps for local school children. He is well-known for the assortment of clever aviation "gyzmos" he has designed and constructed for teaching aeronautical principles. Charley has organized, conducted, and air bossed seventeen airshows for the Southern Illinois community. He coached SIU's Collegiate Aerobatic Team from 2001 until 2007. In 2001, 2002, 2004, 2005, 2006, and 2007 this group won the National Intercollegiate Aerobatic Championship offered by the International Aerobatic Club (IAC). In his "spare time," Charley is a member of two EAA chapters, owns two airplanes, provides Young Eagle Airplane rides, performs annual inspections and repairs to privately-owned aircraft, dabbles with aviation photography, studies aviation history, and is in the process of restoring a 1939 Taylorcraft BC-65. He has recently finished writing his 4th textbook (one co-authored) for EASA (European Aviation Safety Agency [like our FAA]) aeroplane mechanic students. Over the past decade he has been conducting research with Boeing to enhance aviation safety using the university's 737. For his contributions to aviation and his work to promote aviation and aviation education, Dr. Rodriguez has received many awards including induction into the Illinois Aviation Hall of Fame in 2004. He currently serves as president of the Illinois Aviation Hall of Fame.



Flying a WWII bomber.