

STEM Activities for SFTE Members Rev A

Members of SFTE have a wealth of information that science teachers would appreciate hearing about and use, especially if the desire is to include aerospace into their curriculum. Here are some activities that have been done in support of STEM in high schools. Use these suggestions and then feel free to comment on how well they worked or didn't. Also if you know of any other activities, please share them, I'd be happy to post them here.

In whatever capacity you choose to support teachers and students in a school, a relationship must first be established between you, the school and eventually the classroom teacher and students. Once that is established you will find many ways to be of assistance. But keep in mind that teachers already have their lesson plans developed for the class, and currently it doesn't include you. Be mindful that what you may consider helping, may in-fact appear as extra work for the teacher. So whatever role you play, make it as painless to the teacher as possible, in other words, do not create any more work for the teacher. For example, if notionally you may have a good idea for a class demonstration, but not willing to commit the time and possibly the funds to actually see it through, don't expect a huge response from the teacher on the idea alone. Be prepared to work out all of the details needed to conduct the demonstration prior to offering it.

Flight Test Project Assistance

Help a teacher with setting up the flight test project where students use Xplane to conduct takeoff testing and calculate takeoff distance while varying parameters such as gross weight, flaps etc. and seeing their effects. (First, conduct the project yourself first so you will be in a better position to demonstrate it to a teacher and answer questions. See the Teacher FAQ for detailed instructions).

Judging Science Projects

What a great opportunity to engage with a teacher than to offer to be a judge for school projects. Teachers are often looking for such judges because students put in extra effort if they know that someone other than the teacher will be judging the project.

Senior Project Advisor

A role requiring more involvement is that of an advisor to a student doing a senior project. It works well when the advisor is interested and maybe knowledgeable about the project. The student's interaction with you will help with future interactions with adults.

Adult Volunteer for Robotics and Science Olympiad Clubs

FIRST Robotics is an organization that facilitates the building of robots by schools and the competitions that follow. Every year there is a new 'game' that is played with the robots in teams of three. Each school has only several weeks to design, build, test and ship a robot to the competition site. In reality it is an accurate simulation of what real engineering is about disguised as a high tech game. Many students get a taste of engineering in robotics and pursue that as a career. As you can imagine, it takes many volunteers to assist in this effort and a great way to help students.

Science Olympiad is another before or after school activity that has students study specific science topics in detail and then compete with other schools in those areas. It could be building a robot that does a specific task, to building models of molecules, or investigating forensic science. Again, this is led by a teacher but requires volunteers to assist.

Tutoring

There is never enough time to provide instruction to students for math, reading, science, especially to those who need the extra time. Tutoring either during or outside of class time is a great way to make a positive impact on a student. This is also a great way to develop that relationship to the school and teacher.