

Frequently Asked Questions (from STEM Coach Candidates)

How is the Rochester Engineering Society involved in STEM support?

The RES has several outreach programs including an Engineering Focused Explorer Troop, Literacy Tutoring at The Walter Cooper Academy (RCSA School #10), and volunteers who support STEM teachers by visiting classrooms and mentoring individual students, and by building the hardware to make STEM topics tangible.

What does a STEM Coach do during a classroom visitation?

Your mere presence may be moral (actually technical) support for the teacher, because it is likely you have a host of personal Math, Science and Engineering experiences which strengthen what gets delivered in class, when you work as a team. Perhaps more importantly, **your experience will frequently allow you to connect the material being presented, to an actual application.** Even if the teachers have great technical skills, (and great teaching skills), how can we expect them to also have application examples?

Specific Examples:

- The teacher was working on Density and Buoyancy. Units of lbs/in^3 are mentioned along the way. Perhaps no one in the room has given that units-fraction much thought. So, at least for some, everything that follows, misses the mark. The STEM Coach got a Print-shop to make the steel-rule die to cut and crease the stretch-out for a paper cubic inch.

At the next class, everybody got a glue stick and a pattern, and made a cubic inch. Later we also made a cubic yard and cubic meter (from foam sheets, held together with Velcro®).

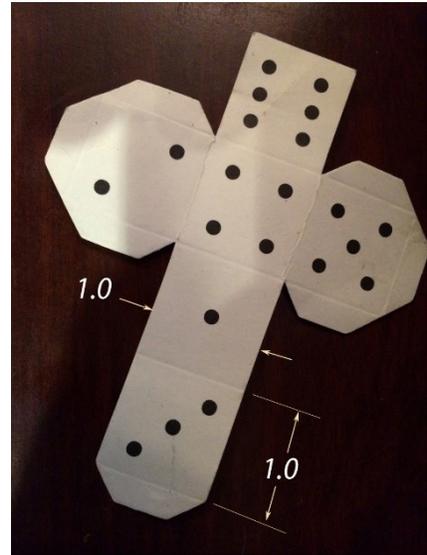
- When working on Simple Machines, the STEM Coach brought a 5:1 block and tackle. With the Block attached to a tree, the smallest girl in class, wound-in the four biggest guys, in a mock tug-of-war.

The teacher describes what the class will be studying, and you brainstorm together (perhaps with other Teachers and STEM volunteers working on the same topic), about what “engineered” hardware you can add, that will help make a point, or you introduce a real-life application which uses that topic.

The beauty of engineering is that **“There is no end to the possibilities for supporting whatever technical topic is being presented.”**



(Over)



What does a 1 on 1 STEM Mentor do?

A 5th Grade student at School #12 had expressed an interest in Paleontology, so I bought him a wooden model of a Pteranodon. It included a sheet with the outline of all the parts, and said that the adult reached a 21 foot wingspan, so we scaled-up and made a life-size model out of 5/8 plywood. His Science teacher was so happy, she hung it in his Science classroom.

Do STEM Volunteers have to work during School hours?

No, there are lots of after-school and weekend activities where STEM Volunteers are needed. [Project Lead the Way](#) and [First Robotics](#) are nationwide examples, and locally we have STEM events like [E3 Fair](#) and [Science Exploration Days](#), to name a few. These local events are one and three day commitments respectively.

Will my employer allow time off in support of STEM activities, during School hours?

Many employers encourage STEM support, even during normal working hours. You should ask, and point out the need, and recent growth in this effort, and the benefits to his local economy and community by cultivating interest in STEM related career paths, which lead to well paying, high tech jobs, and his or her own future employees.

What Grade Students will I be visiting?

Third through Grade 12 STEM positions are available, and it should be your choice. The RES posts these openings and we hope you will choose a district that you know or where you have a connection, (let's not drive to the other side of the County), and a grade level you like. You can change your mind anytime along the way. We want you to be part of a team where your expertise integrates with the teacher's goals.

How many hours am I committing?

Even one 45 minute class a week is a contribution. Maybe the teacher works with three STEM Coaches in any given week, each for one period. Think of the combined expertise that represents. I am one of 1500 engineers and technicians who have six years' experience in classrooms where STEM Coaches came for two hour visits, twice a week! Everybody benefited.

What is the source of these STEM Coaches?

The *Rochester Engineering Society* and its affiliate Engineering Societies have over 3,400 members in the five-county Rochester area. Many of these members are retired or are about to retire, (Baby Boomers). Fifteen hundred of these technical people have STEM Coach experience, (since before the STEM acronym was created), thanks to a Kodak Program called the *21st Century Learning Challenge*.

Interested in becoming a STEM Coach?

Please visit www.roceng.org/volunteer and leave your e-mail address to sign up for our newsletter on Volunteer activities and opportunities, and highlights from continuing local successes.

Or contact:

RES Volunteer Coordinator
Jon Kriegel, President - *Rochester Engineering Society*
cell: (585) 281-5216
jkriegel@rochester.rr.com

Frequently Asked Questions
(from STEM Teachers interested in Industry Support)

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The RES has several outreach programs including an Engineering Focused Explorer Troop, Literacy Tutoring at *The Walter Cooper Academy* (RCSD School #10), and volunteers who support STEM teachers by visiting classrooms, offering application examples for the STEM topics being taught, and by building hardware to make STEM topics tangible.

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Interested in working with a STEM Coach?

Please contact:

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