Finding a Classroom Volunteer
Teacher Looking for Volunteer Support

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My Requirements as a Teacher

Classroom Instruction
AWIM is a teacher-led activity with volunteer support. Meet or talk with the volunteer to go over the curriculum and expectations. The teacher maintains all regular responsibilities such as classroom management, student discipline, photocopying, and assessing student understanding. The volunteer is in the classroom to share his or her expertise and work experience.

Monitoring Volunteers
All AWIM volunteers must follow regulations for school visitors set by the individual school or district. Please be sure to inform your classroom volunteer about your school’s procedures, which may include, but are not limited to: background checks, fingerprinting, signing in & out, and participation in safety drills.

Flexibility of Visits
The number of times the volunteer visits your class varies based on the school schedule, the volunteer’s schedule, and how in-depth you wish the lessons to be. Schedule visits in advance. Check with the volunteer a day or two ahead of each planned visit to confirm arrangements. Be flexible. Volunteers are taking time away from their job or adjusting their hours to assist in the program. Your volunteer’s schedule may change and a visit may be canceled or postponed. Be sure to have a backup plan incase a volunteer needs to reschedule.

Volunteer Updates
Determine the best means of communication between you and the volunteer. If you rely on phone calls, be sure to exchange school and/or home numbers and best times to call. If you plan to communicate by email, let each other know how often you check your mail. Communicating with your volunteer about lessons prior to and after classroom visits will benefit both of you. If e-mail communication is possible, it is helpful to share lesson plans, handouts, articles, or other documents that will be used during class. Providing your volunteer with student feedback can be helpful and rewarding. If students are confused about a concept covered during class, let the volunteer know. The more your volunteer knows about where your students stand in their understanding of the material, the better able he or she will be to tailor each visit to your students’ needs. Keep in mind that re-entering the classroom can be intimidating for some volunteers. Any positive feedback that you share can help ease this apprehension.
Looking for Volunteer Support

Contacting Volunteers – Ways to Reach Out
AWIM provides the curriculum and materials to teach the concepts of physical science to elementary, middle and high school students. It is important to remember these concepts form the basic principles of science that we all learned when we were in school. The potential pool of volunteers is much larger than you might first realize.

Potential volunteers may include members of your PTA, parents or grandparents, even current school volunteers. Consider calling a local chapter of a professional organization as a lead for volunteers. Potential volunteers may include university students studying education, mathematics, science or engineering.

Types of Companies to Contact
The AWIM curriculum is designed to provide students with an Engineering Design Experience by designing a vehicle. So it is natural to think of engineers as potential volunteers.

The engineering profession has many specialized fields including:
- Aeronautical
- Agricultural
- Automotive
- Biomedical
- Ceramic
- Chemical
- Civil
- Computer Science
- Electrical Engineering
- Physics
- Environmental

- Health & Sanitary
- Geological
- Marine
- Mechanical
- Metallurgical & Materials
- Mining
- Nuclear
- Oceanic
- Petroleum Systems
- Textile
- Transportation
When looking for a volunteer, don’t limit yourself to engineers. Remember the AWIM concepts are the basis for all technology fields. Industrial volunteers may include scientists and other professionals that use technology. Keep in mind the goals of having a volunteer in the classroom: building awareness of engineering and other technical professions, and to support the teacher in the classroom.

Consider these locations when looking for a volunteer:

- Laboratories
- Industrial Plants
- Construction Sites
- Hospitals
- Service Garages
- Airports
- The Department of Transportation
- City Municipal Offices
- Outdoors

**Who to Ask For**

When calling a local company consider asking for a representative in Human Resources, Communication or Community Relations as an initial “point of entry.” Many companies like to get involved in their community and managers in these functional areas either work on those aspects or can connect you to the correct person. A World in Motion is an excellent bridge to link education and industry. Schools show that they are teaching their students relevant technologies, while companies show that they are involved in supporting their local community.

**SAE International Support**

Resources at SAE International may be able to help you in your search for Industry Volunteers. Visit www.awim.org to find some other helpful hints.
Volunteer Requirements

Time Commitment – Suggested Visits
A World in Motion offers volunteers flexibility in scheduling classroom visitations. Visitations are typically one hour (on site classroom time). Over the course of the program volunteers can commit anywhere from one to six hours to dedicated classroom visitation. Many volunteers choose to commit more time and resources. Because of the unique concept of volunteers leaving work to visit the classroom there is no visitation schedule outlined in this guide. Time commitment and schedules need to be topics of discussion between the Industry Volunteer and teacher.

During a Volunteer Visit
During a classroom visit the following roles and responsibilities may apply:

Teacher
- Responsible for Classroom Management and must remain present in classroom during all volunteer visits
- Communicate openly with volunteer(s)
- Implement the AWIM program with your Industry Volunteer partner(s):
  - Work with student teams in advance of each classroom visit to ensure each team is prepared
  - Ensure implementation of all volunteer and non-volunteer sessions
  - Evaluate student learning
  - Recognize student participation

Volunteer
- Be familiar with school safety/security protocol:
  - Parking
  - Entry/exit & check-in procedures
  - Evacuation/take shelter procedures and mustering areas
- Work with your teacher partner to:
  - Review program content
  - Identify available presentation resources
  - Maintain cadence established by the schedule
  - Be prepared for each visit
- Attend all scheduled sessions, notifying teacher/volunteer team in advance of absence
- Serve as a role model and provide relevant ‘real world’ examples to students
- Coach students by asking questions to guide them toward solutions
- Make learning fun for the students!

Asking Permission from Management (Volunteers)
Many volunteers need to request permission from their supervisor to leave work to volunteer for AWIM in the classroom. Provide your volunteer with information on the AWIM program. Explain that an important element of the program is having a volunteer who can relate the AWIM concepts to the business world. Volunteers provide an important aspect to the class by explaining how science, technology, engineering & math are used every day in industry.
It is also helpful to have a tentative schedule for the AWIM volunteer sessions that the volunteer can provide to his or her supervisor. In most cases the volunteer will spend 1-hour in the classroom each week for up to six weeks. Be sure to consider the time required traveling to the school and any meetings scheduled with the teacher prior to the program beginning.

A first time volunteer may also need to schedule time to prepare for the classroom session by reading the lesson plan or science notes. This work can be done outside of the work day.

The AWIM program is an excellent opportunity to build community relations. The teacher and volunteer may consider contacting a local newspaper to participate in the final presentations at the conclusion of the AWIM program.
Volunteer Recruitment Tools

Program Introduction Letter
APPENDIX A provides a sample letter that can be used to solicit potential Industry Volunteers.

AWIM Brochure
APPENDIX B provides a two-page brochure that can be used to share a basic program overview with potential Industry Volunteers.

The Script (Talking Points)
APPENDIX C provides a talking script to be used to guide a one-on-one conversation with a potential volunteer.

Needs your help! I am starting an exciting new program that introduces students to engineering design using an approach known as the Engineering Design Experience. Students live the Engineering Design Experience as they are presented a real life problem from a fictitious toy company. Once the students receive the challenge, they need to develop a series of steps to solve the problem. This is where your help is needed. I would love for you to volunteer a small amount of time to come to my classroom and discuss your everyday experience with the students. Our first hand knowledge of (engineering and/or your specific technical field) would really lend itself to the students’ experience. If interested please contact me using one of means below and I can share more.
(Engineer, Community Member, Industry Volunteer)

(Grandview Elementary School) needs your help! I am starting an exciting new program that introduces students to engineering design using an approach known as the Engineering Design Experience. Students live the Engineering Design Experience as they are presented a real life problem from a fictitious toy company. Once the students receive the challenge, they need to develop a series of steps to solve the problem.

This is where your help is needed. I would love for you to volunteer a small amount of time to come to my classroom and discuss your everyday experience with the students. Your first hand knowledge of (engineering and/or your specific technical field) would really lend itself to the students’ experience.

If you are interested please contact me using one of means below and I can share more information about our partnership in educating our students in science, technology, engineering and mathematics.

Respectfully,

(Ms. Smith – 5th grade teacher Grandview Elementary)
(msmith@sae.org)
(724-555-1234)
Appendix B

A World In Motion Challenges

Elementary (grades 4-6)

Skimmer Challenge
Students construct paper sailboats and test the effects of different sail shapes, sizes, and construction methods to meet specific performance criteria. Friction, forces, the effect of surface area and design are some of the physical phenomena students encounter in this challenge.

JetToy Challenge
Students make balloon-powered toy cars that meet specific performance criteria: distance traveled, weight carried, accurate performance, and speed. Jet propulsion, friction, air resistance, and design are the core scientific concepts students explore in this challenge.

Gravity Cruiser Challenge
Students focus on understanding the relationships between the “sweep” of the lever arm, the number of winds the string makes around the axle, and the distance the gravity cruiser travels. They also investigate how the diameter of the wheels, the diameter of the axles, and the amount of weight placed on the lever affect the gravity cruiser’s speed and distance. This challenge introduces a rich activity in critical thinking and learning how to use the experimental method to test hypotheses and solve an engineering problem.

Middle School (grades 6-8)

Gravity Cruiser Challenge
Students focus on understanding the relationships between the “sweep” of the lever arm, the number of winds the string makes around the axle, and the distance the gravity cruiser travels. They also investigate how the diameter of the wheels, the diameter of the axles, and the amount of weight placed on the lever affect the gravity cruiser’s speed and distance. This challenge introduces a rich activity in critical thinking and learning how to use the experimental method to test hypotheses and solve an engineering problem.

Motorized Toy Car Challenge
Students develop new designs for electric gear driven toys. To meet a specific set of design requirements, students must write proposals, draw sketches, and work with models to develop a plan. Force and friction, simple machines, levers and gears, torque and design are core concepts covered.

Glider Challenge
Students explore the relationship between force and motion and the effects of weight and lift on a glider. The glider activity culminates in a book-signing event where each design team presents its prototype and the class presents its manuscript of Glider designs. Students learn the importance of understanding consumer demands and the relationships between data analysis and variable manipulations.

Fuel Cell Challenge
Student teams design a toy car that uses a PEM (Proton Exchange Membrane) fuel cell to power the electric motor. Elements of electrical currents, Green Design, and transformations of energy are explored as the teams develop their product.
Appendix C

The Script (Talking Points)

Below are some talking points that may help you start your conversation with the company representative or potential volunteer. Once you contact the correct person; introduce yourself, explain why you are calling, what you are looking for, and how they can get involved.

Introduce yourself.

Why:
I am introducing my students to a dynamic curriculum focused on the engineering design process. The program is designed to help students see how math and science connect to the real world.

An important aspect of this program is fostering positive attitudes toward science, technology, engineering & math. There is no better way to do this than by exposing the students to people who have a passion and make a living working with technology.

What:
What is AWIM?

AWIM is a unique program that steps students through the Engineering Design Experience, used by engineers in design teams. This method provides a problem-solving context in which student design a product or devise a solution to a problem. Teams of three students examine what must be accomplished and who the product is for; gather and synthesize information; design, develop, and test a prototype design; and prepare a presentation of their ideas.

Through the Engineering Design Experience students identify problems, generate and evaluate ideas, plan and implement solutions, evaluate solutions, and communicate results – just as professionals do in industry.

I am calling because your company is rich in technology and I am hoping you might consider a partnership with me by volunteering or encouraging your employees to volunteer in my classroom.

How:
The curriculum actually walks the students through the engineering design experience with a hands-on project that is completed by a team of students.

Volunteers in the classroom will support classroom activities and share their professional experiences with the students.

Each class session lasts about 1-hour. Volunteers can participate in as little as one session or participate in all classroom sessions, depending on their availability.

Explain if volunteer training is available (either through SAE or one-on-one with you).

Closing:
Are you available to meet to discuss the program in more detail?

Consider bringing an example of one of the completed challenge vehicles. If time permits, build one during the meeting. If possible, bring extra materials that can be given to the volunteers. In addition, bring a copy of the challenge description, a description of the roles & responsibilities and a tentative timeline.