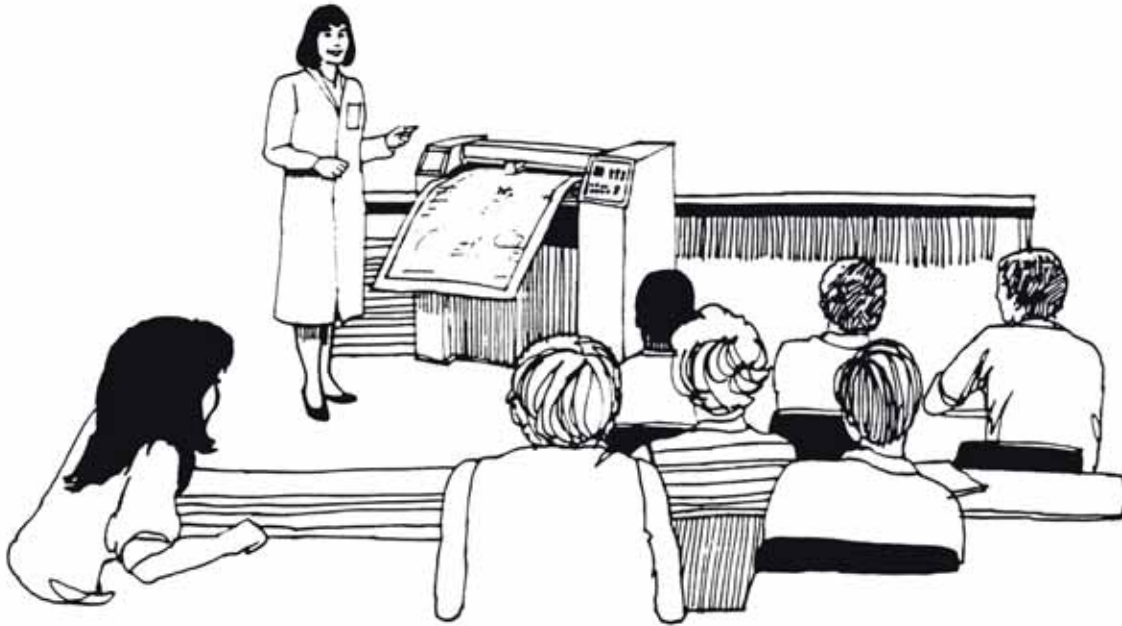


## Interactive Projects

To help make your presentation interesting and exciting for students and to help them get some hands-on "experience" involve them in some simple classroom projects. The projects listed here can be done in one class period or expanded to take place over several periods

The projects have been developed by a team of engineers and teachers, to intrigue engineers and students and require only common and inexpensive materials. The teacher need provide only minimal assistance. These projects have also been written to allow you to add your own personality, enthusiasm and ideas. Use these projects, develop new ones on your own, or if you've conducted successful egg drops and bridge-building type projects before try them again now. In any case, be sure to discuss your project with the teacher in advance.



## Come to Your Senses



Have students explore design changes right in their own school. Before you go into the class have the teacher ask them what they might want to change or be able to influence at school such as parking access, waste disposal, fire safety, etc. Have them write down their ideas and bring them to class. Discuss the problems and some possible solutions. This project can be expanded to have students survey members of the student body and faculty about specific problems or to generate a list of problems, to have students actually set designs to paper, and for you to work with them on their designs.

This project illustrates a point that engineering permeates every aspect of our lives. Challenge students to discover engineering in everything around them by using all their senses.

Ask the students to close their eyes and tell you:

What they **hear** that has been the work of an engineer-Listen for clocks ticking, airplanes passing, and the school public address system humming or unfasten Velcro. All will lead to discussion of a variety of engineering disciplines...

**Smell** - Cut into an orange or open a bottle of vanilla to release a scent and talk about engineering and agriculture, food processing...

**Taste** - Students will get a kick out of eating freeze-dried food, chewing gum or licking stamps. Lead to a discussion on engineering and packaging, adhesives...

**Touch** - Synthetic fabrics. Velcro and paper are only a few items leading to discussions of engineering and manufacturing...

**Sight** - Try this one last. For a slightly different twist ask students to identify something they are wearing or carrying. Then ask them if they can guess how engineers have helped make that product a reality.

Write all suggestions on the bulletin board for a final review. Discuss them and point out some others.

For a variation on this project instead of having the whole class react do it with one student for each sense. The others will enjoy watching.

## Engineering the Future

National Engineers Week Committee and Science World magazine published a survey for students to predict what 22nd century life will be like. Following are some sample survey questions. Try writing your own as well and let your imagination go! (Copies of the Science World survey are available from Engineers Week headquarters)

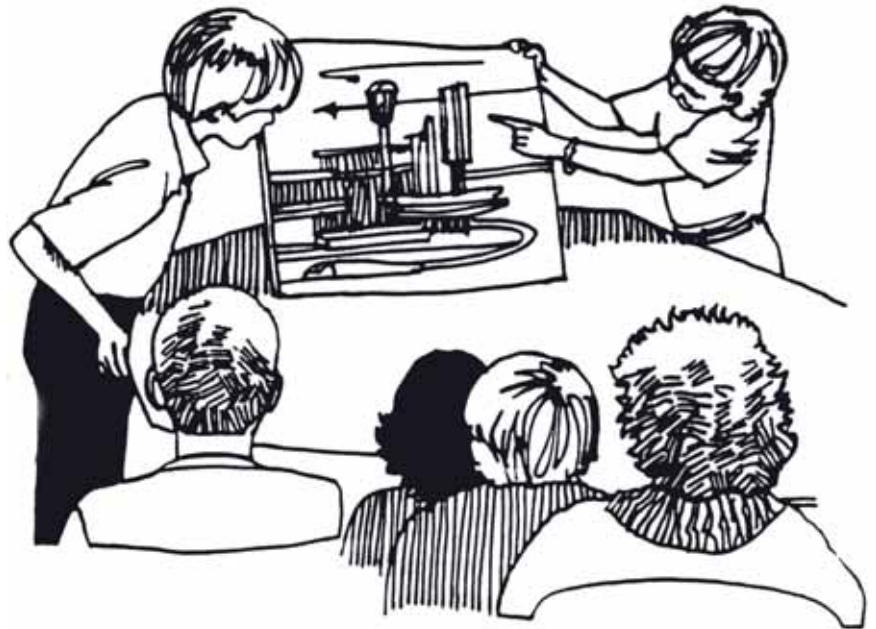
Will Americans be living in space? Working In space? What will be our main energy source? How will people travel? Will people still go to school for their educations? Will we be able to buy "off-the-shelf" body parts?

To develop activities around the survey have the teacher distribute the survey before your visit. Compile the results to report to the class and use the results as a basis of discussion:

Have students illustrate their thoughts on some of the survey questions and talk about their illustrations during your visit. If you have any futuristic drawings bring them:

During your visit, work with students to develop their own survey. Challenge them to canvass their classmates and faculty. Then follow-up when they have the results,

Prior to your visit have the teacher ask the class what questions they have about technology and life in the future. Have them consider their city, school or home, transportation, appliances, clothing, shopping, entertainment, etc. Have the teacher submit those questions to you and prepare your answers for the class.



## Discover “E” Extracurricular Activities

There are a variety of student activities you can plan outside the classroom. Consider sponsoring:

**Engineer-for-a-Day programs** - Students visit engineering firms and industrial facilities and work side-by-side with engineers.

**Facilities and lab tours** - Engineers conduct special behind-the-scenes tours.

**Open-house programs** - Firms, industries, and colleges open their facilities. Engineers and teachers meet with students and parents and present lectures and social activities.

**Public exhibits** - Engineers and students develop special displays in and out of the classroom. They may present demonstrations and exhibits, and sponsor contests at local libraries, shopping centers, and school lobbies.

**Engineering fairs** - Engineers sponsor fairs that include hands-on exhibits, competitions, and career guidance meetings.

**Scholarships** - Throughout the year engineers conduct scholarship programs for high school students who will attend engineering colleges. During Engineers Week they present many of the awards.

**Book fairs** - As part of the National Engineers Week "Engineering Goes Public" campaign, engineers work with local libraries, schools, and associations to sponsor book exhibits highlighting interesting and fun publications about people, projects, and landmarks. Engineers also donate books to school and public libraries to create an engineering corner. Some titles include *The Magic School Bus at the Water Works*, Joanna Cole; *The Story of the Statue of Liberty*, Betsy Maestro; *Opportunities in Engineering Careers*, Nicholas Basta; *The Way Things Work*, David Macaulay, and *The Most Amazing Science Pop-Up Book*, Jay Young.

**Teacher workshops** - Engineers sponsor workshops that give teachers ideas for bringing engineering and technology into the classroom. Workshops can be hosted at local universities or company offices.

**Competitions** - Students learn about engineering, work with practicing engineers, and have fun at the same time by building and smashing model bridges, floating concrete canoes, or designing posters. Offer science kits, building sets, microscopes, and problem solving books as prizes.

In addition to the above activities, - engineers can host students, teachers, and parents at banquets or professional and technical society meetings; present awards to outstanding teachers; sponsor class field trips to local science and technology museums; sponsor a film festival featuring movies like Jurassic Park and discuss with students how close the images come to the truth; or invite teachers to serve on local National Engineers Week committees.

