



energy4me

Kit

Presented by the
Society of Petroleum
Engineers

Speakers Guide

A quick-reference guide to giving classroom presentations



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Introducing the Energy4me Kit

The Energy4me Kit provides the basics for your classroom or career fair presentation.

Kit contents:

CD

- PowerPoint presentations for primary, intermediate, and secondary students
- PowerPoint presentation for teachers and adult audiences
- “The Quest” Video
- Videos of young engineers talking about their jobs
- Activity sheets to print out, copy, and hand out to students
 - a. **Primary**
 1. Petro Pete coloring page
 2. Renewable/nonrenewable coloring pages
 3. Bread-fossil activity
 - b. **Intermediate**
 1. Renewable/nonrenewable energy sources activity
 2. Secret message activity
 3. Energy scavenger hunt
 - c. **Secondary**
 1. The cost of car ownership
 2. Great energy hunt research activity
 3. Modeling an oil reserve experiment

Oil Well Poster, with 3 classroom activities or experiments on back

Experiments folder (9 activities, ready to use and copy)

Fact or Fiction Quiz Cards (use to engage the students)

Energy Sources of the World Booklet (compares all energy sources)

Smart Energy Choices Bookmark

Petroleum Engineering Career Brochure sample

Order form: “Oil and Natural Gas” Book

Additional career brochures

Smart Energy Choices Bookmarks

A letter from the Energy Information Committee

Thank you for agreeing to give a classroom presentation! You may help change a young person's life.

As a member of the petroleum engineering profession, you have a lot to offer young people. By serving as a classroom speaker, you can help students of all ages understand the importance of energy in their everyday lives and broaden their awareness of possible careers in petroleum engineering and in the upstream industry.

Classroom speakers help students:

- ✓ Broaden their awareness of different jobs and careers,
- ✓ Relate to additional adult role models other than teachers and parents/guardians,
- ✓ Make a better connection between what they are learning in school and what they will need to know as successful adults.

We rely on volunteers like you to help reach the next generation who are so important to our industry. Thank you for participating.

Best regards,

Energy Information Committee

Society of Petroleum Engineers

Prep sheet

The following steps will help you prepare for your presentation.

1 Contact the teacher.

It is important to contact the teacher prior to your presentation.

Sometimes, it is very difficult to contact teachers during the day. Email is a much more effective way to communicate with a teacher than by telephone, especially if you cannot visit the school in advance.

2 Learn about the students.

The basic rule of any good presentation is to know something about your audience. The teacher is your best source of information about the students in the class. When you contact the teacher, be sure to ask questions that will help you better understand the students' skills and interests.

- What are the academic subjects being covered in the class? Are these advanced or beginning classes in the subject? How can your presentation augment the coursework? Are the students focusing on a specific unit or theme relevant to your presentation?
- What types of activities are most effective with the class? Do they learn best when involved in activities or discussions? Do they respond best to visuals, open-ended questions, and/or lectures?
- Does the teacher have any suggestions on how to design the presentation to ensure that it is age-appropriate?

3 Review logistical issues.

When you contact the teacher, ask about logistical issues related to your presentation.

- How much time will you have for your presentation, including a question and answer period?
- What is the best way to get a message to the teacher in the event you need to change your plans?
- What is the best way to get to the school? Is there a specific place to park? On the day of your presentation, will you go directly to the classroom, or will you meet the teacher/coordinator at the main office and be escorted to the class?
- What equipment will you need? If you intend to use PowerPoint, make sure the school has the capability.
- How many students are in the class? Should you bring duplicate materials for each student?
- Are there any special school rules or procedures you should know?
- Will the teacher provide the students with information about you or your occupation prior to the presentation?
- Is there a prepared evaluation process? SPE has an online evaluation form, located at www.energy4me.org/speaker, that you can print out and leave with the teacher. The form is also on page 9 of this guide.

Tip sheet

Students will stay engaged if you avoid lecturing the entire time and include demonstrations, hands-on activities, or an interactive discussion related to your presentation.

- Be excited about your presentation! Relate to the students' level and be interested in them.
- Students want to understand the connection between what they learn in school and what will need to know to be successful in their lives.
- Get technical. Students hear that math and science are important subjects, and they want to understand why.
- Do your research. Students want to know about different jobs and careers. Older students want to know what jobs will be in demand when they graduate from college.
- They want to broaden their awareness of different jobs and careers.
- They like to learn by doing and participating in the class, so give them activities to do!

Preparing your presentation

Classroom speaking is not time-consuming, but it does require some planning. Here are tips to help you design a successful presentation:

Give a sense of the “big” picture. Put your work in the context of the company and what you are trying to achieve (*petroleum engineers help supply the energy that makes the world run and improves the quality of life for people everywhere*). Girls, particularly react positively to first-person stories about how engineering “makes a difference” and offers a monetarily and personally rewarding career.

Talk about the work environment. Describe how you work as a part of a team, about the services and products your company provides, and what working conditions are like—hours, dress code, travel, safety gear and technology you use.

Personalize your presentation. Young people will be interested to know not only what you do, but also, how you got where you are. Tell students why you selected your career or occupation. What previous experiences, education, or jobs directed you to and prepared you for your current position? How would you advise someone to prepare for a job like yours?

Leading discussions

Discussions are rich opportunities for students to express their ideas and opinions. To open and lead discussions:

- Ask open-ended questions that call for opinions or explanations rather than “yes” or “no” answers.
- Allow students time to think through their answers—a little creative silence is fine.
- Provide hints or rephrase your question to give students more of a chance to answer.
- Invite questions; all questions deserve an honest response. If you don't know an answer or if a question is inappropriate, say so.
- Be flexible and let discussions follow students' interest, even if it means altering your agenda.

Creating your own sample kits

Products made from oil

Oil is not just a source of energy—it is also a remarkable raw material. Students will be fascinated to learn about all the different products made from hydrocarbons.

Processing alters the hydrocarbons so completely that it is hard to recognize the oil origins of these petrochemical products. Point out the amazing range of items from plastics and perfumes to bed sheets. We use many oil products as synthetic alternatives to natural materials like synthetic rubbers and detergents (instead of soap). But oil also provides us entirely new, unique materials such as nylon. Here are some items you can bring with you or ask students to find in classroom:

Classroom	Clothing	Health and Beauty	Home	Sports/hobbies/ games
Backpacks	Beads/bracelets	Aspirin	Candles	Beach balls
Ballpoint pens	Flip flops	Bubble bath	Carpet and mats	Cameras
Calculators	Nylons/pantyhose	Cologne	Coffee pots	Ear plugs
Computers	Polyester shirts	Deodorants	Fabric softener	Fishing bobbers
Erasers	Polyester pants	Lipstick	Flashlights	Fishing poles
Lunch boxes	Purses	Mascara	Foam cups	Fishing lures
Markers	Raincoats	Mouthwash	Freezer bags	Footballs
Ringed binders	Sandals	Nail polish	Lamps	Frisbees®
Rulers	Shoelaces	Pepto-Bismol®	Measuring cups	Guitar strings
Tape	Sneakers	Perfume	Milk jugs	Kites
Trash cans	Sweaters	Rubbing alcohol	Spray paint	Light stick
		Sunscreen	Tablecloths	Photo albums
		Toothbrushes	Utensils	Photographs
		Vaseline®	Wallpaper	Plastic water gun
		Vitamins	Wax paper	Roller-skate wheels
				Skateboard wheels
				Snorkels
				Flippers
				Wet suits
				Yarn

List courtesy of Illinois Petroleum Resources Board

A personal "Magic Suitcase"

For many, nothing can replace a traditional oil and gas sample kit. This collection can be handy when trying to explain a technical element to students. To build your own demonstration kit, you will need to collect these items from your company or find out if your section has a collection you can use:

- Proppant
- Cores/plugs (especially with a residual hydrocarbon odor)
- Set well cement
- Well casing sample
- Frac fluid
- Hydrocarbon sample kits
- Digital videos (animated or actual) that are oilfield related

Sample speaking agenda

Class: 10th grade science class, Camden Academy
Date: 8 February **Time:** 1000 to 1045 hours

Introduction

10 minutes

Introduce yourself. Tell how you got interested in petroleum engineering, how your work makes a difference by providing energy for the world, and how many companies are helping to develop alternative energy sources. Talk about the other jobs you've had that led you to where you are now. Explain the education necessary to do your job. Tell what a typical day is like on the job.

Demonstration/Presentation

15 minutes

SPE provides PowerPoint presentations for primary and secondary students you can use. Select one of the following as an activity to accompany the talk:

- Open the discussion by asking students to respond to the Fact or Fiction Quiz Cards contained in this Kit. Consider providing promotional items from your company as a prize for those who answer questions correctly.
- **Petroleum is everywhere!** A good start is to ask students to name common products that they use everyday that are made from oil. Many of these products are hidden in plain sight—most people only think of oil with transportation and gasoline.

A typical 42-gallon barrel of oil provides about 20 gallons of gasoline and 4 gallons of jet fuel (1 barrel of oil = 42 US gallons \approx 34.9723 UK gallons \approx 158.99 liters \approx 0.1364 tonnes \approx 6.6 cubic metres). So what comes from the other 18 gallons? Choose some unusual or surprising products that are “hiding in plain sight,” such as toys made from plastic, an iPod or other electronic with a plastic cover, cosmetics, chewing gum, aspirin, or candles. You can create a Products Made from Oil Sample Kit mentioned in the previous section for a thorough demonstration.

- **Oil really rocks!** Use the poster to show that oil is found in pores of rocks, not in an underground lake.

Sample speaking agenda (continued)

- **Rock-it science!** Use one of the activities in the Kit to illustrate a major petroleum concept.
- **Or, do a show and tell:** Pass around interesting items that you use in your business that will provide some “wow” factor for the students. You will need to collect the items in the personal Magic Suitcase mentioned in the Create your own kit section of this guide.

Work environment/ technology

10 minutes

Talk about the location, salary, personal rewards, asset teams, technology, and how engineers work together as a team. For older students, spend more time on the career opportunities—excellent compensation and chances for advancement.

Activity: You can make a difference!

Begin this activity by reminding the class that while some of them may choose to help the planet by finding more energy, everyone can help by using energy wisely. Ask them to tell you ways they can reduce the energy they use at home, at school, and at the store.

Q&A

10 minutes

Answer questions from students. If they don't have questions, ask them some.

Say goodbye and provide the teacher with an evaluation form. Some speakers provide an email address in case students have follow-up questions.

After the presentation

Most speakers say they get a real thrill from the presentation feedback they receive.

An evaluation form is on the next page, so you can get feedback from the teacher. Make a copy and ask the teacher to fill it out for you. Include your contact information to return the form.

You can make an additional contribution to the school by donating a special energy book prepared by SPE to the school library. Just email presentation details (presentation date, school, grade, number of students, topic, and shipping address) to energied@spe.org. SPE will mail a copy of the "Oil and Natural Gas" book to the school with a nameplate listing you as the speaker.

Evaluation form

Name of speaker _____

Date of talk _____ School _____

Location _____

Number of students _____ Grade level _____

Was the speaker well-prepared? _____

Was the content useful and appropriate for your students? _____

Would you recommend this speaker for future presentations at your school? _____

Further comments _____

How would you rate this speaker? (1 lowest, 10 highest) _____

Please send your completed form to energied@energy4me.org or fax to 972.952.1150. You can also fill out an evaluation form online at www.energy4me.org/speaker.

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