



MIND STRETCHING FUN!

About Us



Introduce a Girl to Engineering February 2009

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Introduce a Girl to Engineering

Did you know that only 20 percent of engineering graduates are women and less than 10 percent of the engineering workforce is comprised of women?

Preview
Exhibit



Research shows that girls lose interest in math, science and technology long before they enter college where they might consider engineering careers.

Fun Stuff



Today, February 19, is **National Introduce a Girl to Engineering Day**, and Sci-Tech Discovery Center is celebrating with a special edition of our e-newsletter. Below you will find profiles of local women engineers, tips for parents and some fun experiments to get that mind going.

Encourage your budding engineer! Influence her to ask questions. Champion her curiosity. Introduce her to women who have entered the field. Most importantly, unlock her potential. Our nation's future depends on it.

Meet Some Amazing Women

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Elisabeth Marley, PhD

Engineering Roles: Research Assistant, Research Scientist, Process Development Scientist, Manager, Team Leader, Professor

Favorite Role: Professor— I love the teaching and interaction with the students.

Degree(s): Electrical Engineering. BS from SMU; MS and PhD from MIT

Most critical skill: curiosity and endurance

Words of wisdom to budding engineers: Go get 'em girl! It's not an easy road, but you bring such a different perspective to the table that your impact and influence



**ENGINEERS
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are more significant than you may think.

Sarah Pratt

Engineering Roles: Engineer on the F-16 fighter plane and high-tech sales

Favorite Role: It was really cool to get in the F-16 dome simulator and feel like you were actually flying an F-16!

Degree(s): Computer Systems Engineering from University of Arkansas.

Most critical skill: a very specific and detailed thought process

Words of wisdom to budding engineers: Stick with it! A female engineer is very rare. We add so much value to the projects we touch.



Beatriz McKnight

Engineering Roles: Technical Support Engineer at Nortel supporting wireline and wireless technologies and a Validation Engineer responsible for testing new hardware and software products

Favorite Role: My favorite role was a Technical Support Engineer because it was always a challenge, I never knew what types of problems were awaiting me when I answered the phone! I learned something new everyday I was on the job and it was a great sense of accomplishment when I resolved an issue.

Degree(s): Courses in Computer Information Systems at the University of Texas at El Paso and a BS from University of Texas at Dallas with a concentration in Management Information Systems

Most critical skill: analytical and troubleshooting skills

Words of wisdom to budding engineers: Never give up. Engineering is still a male dominated field so it is important to remain focused and believe you belong there!



Hamida Khan Gidden

Engineering Roles: Technician for a Class 1 Cleanroom at Texas Instruments, Product Engineer in one of the TI World Class Fabrication facilities

Degree(s): Electrical Engineering at University of Texas at Dallas

Why engineering? I chose engineering because mathematics and sciences have always been my strong subjects growing up. The difficulty was deciding a field within engineering to study.

Most critical skill: ability to pay attention to detail in order to solve problems

Words of wisdom to budding engineers: As a female in a male dominated field, the road to earning an engineering degree can be long, but the journey is rewarding. Stick with it, and remember that continuous learning means continuous improvement.



Emily Tett, engineering student at Texas A&M and 2005 Plano West Senior High School graduate

Why engineering? I really enjoyed math in high school. I was able to take courses like AP Computer Science, AP Statistics, and AP Calculus, which not only prepared me for college, but increased and encouraged my interest in engineering. I also attended a 'Women in Engineering' weekend program at University of Texas that gave me a taste of what an engineer does as well as surround me with other girls with similar interests. Also, my family has always been encouraging and supportive of my interests.

Degree(s): Plans to graduate with a Mechanical Engineering Degree this December

Words of wisdom to budding engineers: It is a rewarding degree, but be prepared to work hard. Also, get involved in a professional organizations such as American Society of Mechanical Engineering (ASME) and apply for internships/co-ops as early as possible.



Charlyn Plunk

Engineering Roles: Production Engineer for Texaco Midland Division, Ergonomic Engineer for Raytheon, Petroleum Engineer for CGP Ventura, LLC

Favorite Role: I really enjoy both Petroleum and Ergonomic Engineering. Petroleum Engineering is very challenging in many technical ways, where as Ergonomic Engineering is all about fitting the task to the person for optimum performance.

Degree(s): BS in Petroleum Engineering with a minor in Civil Engineering and a MS in Industrial Engineering specializing in Ergonomics

Most critical skill: problem solving utilizing theories of science and the rules and solutions of math

Words of wisdom to budding engineers: You may be the only female in your classes, or have to study harder than anyone else you know. Nothing ever worthwhile comes easy! That's why Engineers make the highest starting salary right out of college!!!



Tips for Parents

Here are some ideas from [The Girls Math & Science Partnership](#) on how to inspire your future engineer.

- Talk to your daughter about how science and math are taught at school.
- Encourage your daughter to take more courses in math, science and technology.
- Encourage her interest in how things work.
- Be sure that technology in your home is accessible.
- Encourage your daughter to incorporate science formally and informally outside of school.
- Allow your daughter to be the expert.

Stretch That Mind

Build your own Flashlight

Items needed:

- flashlight bulb
- two D-cell batteries
- two 5" pieces of number 22 insulated copper wire with approximately 1" of insulation stripped off all ends
- cardboard toilet paper tube
- two brass fasteners
- 1" x 3" cardboard strip
- paper clip
- tape
- bathroom-size paper cup

Instructions:

1. Push brass fasteners through the tube and attach a paper clip. This will act as your on/off switch.
2. Inside the tube, attach a wire to each fastener.
3. Tape batteries together, (+) to (-), and insert into tube.
4. Tape one end of wire securely to bottom on battery's negative (-) terminal.
5. Pass other wire end through a hole (large enough to insert bulb) in center of cardboard strip and twist wire around bulb and insert the bulb into cardboard. This strip, when taped to tube, will position bulb for contact to positive (+) terminal.
6. Use a paper cup as a reflector by inserting bulb through a hole punched in the bottom of the cup. Secure with tape.

Explanation:

For a light bulb to work, electricity has to pass through the filament and return to the power source to complete the circuit. A circuit is a complete loop that electricity can flow through.

Construct a Gumdrop Dome

Items needed:

- box of toothpicks
- large bag of gumdrops
- books

Instructions:

1. Use five gumdrops to connect five toothpicks in a ring to use as your base.
2. Use two toothpicks and one gumdrop to make a triangle on each side of the base. Repeat this step all around the base until you have five triangles.
3. Use toothpicks to connect the gumdrops at the tip of the triangles.
4. Push one toothpick into the top of each gumdrop and connect them all with a single gumdrop at the top.
5. Make a hypothesis on how many domes you will need to support a small stack of books. Make your domes and let them dry overnight.
6. Test the strength of your domes by arranging them and placing the books on top. How many books can they support?

Explanation:

Domes are curved structures without angles or corners. They enclose an enormous amount of space without the support of a single column. Domes are some of the strongest structures in existence today.