

FIRST

The COMPETITION

1998

new partnerships

new opportunities

FIRST's 7th Annual Competition is in the works. Partnerships will be formed and champions will be crowned. This is your opportunity to participate in one of the funkiest, far-reaching, rewarding school/industry partnership programs around.

The Competition is a national engineering contest which immerses high school students in the exciting world of engineering. Teaming up with engineers from businesses and universities, students get a hands-on, inside look at the engineering profession. In six intense weeks, students and engineers from diverse engineering backgrounds work together to brainstorm, design, construct and test their "champion robot." With only six weeks, all jobs are critical path. The teams then compete in a spirited, no-holds-barred tournament complete with referees, spectators, cheerleaders and time clocks.

This is not a science fair. While the students are actively involved in the design and construction of the robots, it is up to the engineers to take the lead, to use their skills, and to show the students the wonders of the engineering profession. The partnerships developed between schools, businesses, and universities provide an exchange of resources and talent, highlighting mutual needs, building cooperation, and exposing students to new career choices.

The result is a fun, exciting and stimulating environment in which all participants discover the important connection between classroom lessons and real world applications.

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7th
annual

sequence of EVENTS

1. Secure a Partner

The following ideas may help you find a partner. Remember, enthusiasm and imagination are the key to a successful partnership.

if you are a Corporation Or University

Call your local school administration office or high school principal to arrange a meeting to explain the program. Look for a school or group of students who will get the greatest benefit from this inside look at engineering (for example, a less affluent school). Remember, this program is a great opportunity for the students and the school, therefore securing a partner should be an easy first step.

Tips•Recruit teachers from all departments: Art Teachers for logo design; Computer Teachers for CAD design; Shop Teachers for manufacturing; etc. •Use in-school broadcasts and publications to spread the word and recruit students. •Excite the school administration •Show a video of past Competitions at the next teachers' meeting.

if you are a School

Identify potential partners by calling your local Chamber of Commerce, business and industry associations and business/education partnership groups. Keep in mind the intensive engineering component of the Competition, and try to choose a partner whose personnel have hands-on experience and engineering backgrounds.

Tips•Write to the head of a company, engineering division, and/or the community relations department. If you don't know names, call and speak with the human resources department or look up the company at the library. •Get members from the entire partner company involved to capitalize on the cross-section of skills needed. •Write a letter to the editor of your local newspaper and urge the community to get involved.

IF ALL ELSE FAILS...
call FIRST for help finding a partner

Registration
DEADLINE

To Enter A TEAM:
December 4, 1997

2. REGISTER

To enter your team, fill out the enclosed Registration Form and return it to FIRST with a check or purchase order by December 4, 1997.

Put the names of the engineers and teachers who will serve as key contacts with FIRST for your team on the Registration Form. The deadline to enter a team is December 4, 1997. It is imperative that you register as early as possible to secure a slot in the tournament(s) of your choice.

Teams are responsible for providing transportation, food, and lodging for any team member attending the Kickoff Workshop and/or Competition tournaments.

just the
F A C T S

Events

January 10, 1998

Kick-Off Workshop
Manchester, New Hampshire

March 5-7, 1998

Southwest Regional
at Houston, Texas

March 12-14, 1998

Motorola Midwest Regional
at William Rainey Harper College
Chicago, Illinois

March 19-21, 1998

DEKA New England Regional
at New Hampshire College
Manchester, New Hampshire

Johnson & Johnson Mid-Atlantic Regional
at Rutgers University
New Brunswick, New Jersey

Great Lakes Regional
at Eastern Michigan University
Detroit, Michigan

April 2-4, 1998

National Championship
at Walt Disney World's Epcot

 **Autodesk.**

Baxter

 **CHRYSLER
CORPORATION**

DEKA

Honeywell

Johnson & Johnson

 **MOTOROLA**

Procter & Gamble

 **SMALL
PARTS
INC.**

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respective organizations.

Fees



National Championship Participation: \$4,000

Regional Tournament Participation: \$4,000

1997

Official Sponsors

January:

FIRST hosts the **Kick-Off Workshop**, in Manchester, New Hampshire.

The Workshop is for adult team leaders and begins with a presentation by Dr. Woodie Flowers on the spirit of design contests. Dr. Flowers is the creator of the M.I.T. 2.70 Contest on which FIRST's Competition is based. Following Dr. Flower's presentation, The Kit Of Parts is presented and The Playing Field is unveiled.

3. KICK-OFF WORKSHOP

The Kit Of Parts

what YOUR FEE provides:

Year-round
program
development

- team recruitment
- marketing
- P.R.
- game design
- technical development

Tournament
production

Award celebration

The Kick-Off
Workshop & The Kit Of
Parts

FIRST provides each team with almost all the parts which may be used for robot construction: The Kit Of Parts. The materials in The Kit and parts purchased from the Additional Hardware List (see below) are some of the parts teams may use to build their robot. Size and weight are other restrictions to machine design. The Kit is proprietary, therefore the actual contents are not revealed until the Kick-Off Workshop. However, here is a sneak preview of what you might expect when The Kit is opened.

CONTROL SYSTEM:

FIRST provides and maintains the remote control system and radio transmitters provided by Motorola for every participating team. This is the only authorized control system as it limits the frequencies used at all Competition events and provides equal capabilities for all robots.

ELECTRICAL COMPONENTS:

Wires, switches, servos, valves, power connectors and more were some of the parts included in the 1997 Kit.

MOTORS&BATTERIES:

Multiple motors of different sizes and makes. Two sets of batteries so that one set can be charging while the others are used to test-run robots.

HARDWARE:

Bearings, shafts and rods, springs, fasteners, rope and other miscellaneous small hardware.

SAMPLE MATERIALS

OF ADDITIONAL HARDWARE:

FIRST provides samples of most of the materials which appear on the "Additional Hardware List." These materials may be purchased in limited larger quantities by teams for use in constructing machines. Wood, PVC, copper and conduit pipe, aluminum plate, fiberglass and polycarbonate sheet were some of the options in 1997.

DESIGN & BUILD ROBOT

This is the real guts of The Competition. You have six weeks to design and build your robotic competitor using The Kit Of Parts.

During this phase, **technical support** is provided by the FIRST Competition Staff. The Staff answers all questions and provides support to all teams on an individual basis, as well as providing global updates to all teams via fax and electronic bulletins.

For an "insider's view" of the Design & Build phase of The Competition, and what it's like to be a competing team, read through the Team Profiles on pages 18-40 in the 1997 National Championship Event Program.

5. COMPETE

MOTOROLA
MIDWEST REGIONAL CHAMPIONS
Beatty Machine and Manufacturing &
Hammond Schools (IN)

DEKA
NEW ENGLAND REGIONAL CHAMPIONS
Naval Undersea Warfare Center &
Middletown High School (RI)

JOHNSON & JOHNSON
MID-ATLANTIC REGIONAL CHAMPIONS
Ortho Diagnostic Systems &
Hillsborough High School (NJ)

CHAIRMAN'S AWARD WINNER
Delphi Interior and Lighting &
Pontiac Central High School (MI)

FOUNDER'S AWARD WINNER
Francois J. Castaing and Chrysler Corporation

NATIONAL CHAMPIONS: Beatty Machine and
Manufacturing & Hammond Schools (IN)

1997
WINNERS



6. CELEBRATE

Impressions

Our success as a nation requires bold, persistent, scientific experimentation, and all of you who are part of this event can be proud of your involvement in this important endeavor. I salute you for your dedication to excellence and your commitment to the ideals of friendly competition. You are demonstrating the simple lesson that science is fun, and that it has the potential to help our nation tomorrow in ways that we are just beginning to imagine today.

President Bill Clinton

Dean came into my office and said, now, if these corporations can sponsor Olympic athletes, why isn't it a great idea that they encourage young scientists the same way. And he's absolutely right about that.

President George Bush

At Motorola, our continued success depends on our ability to hire a world-class workforce. We know it's critical for tomorrow's workforce to be technology literate. That's why we are investing in FIRST and in the ultimate future technology—the minds of our children.

Gary Tooker

Chairman, Motorola, Inc.

As a company dedicated to technological innovations, Baxter has been a strong supporter of FIRST since its inception. Participating in the competition enables a corporate partner to provide students with "real life" experience and introduce them to careers in science and technology. Additionally, employees benefit from the hands-on management experience they gain from working with the students. Serving as a corporate partner is a tremendous way to positively impact your community and help further the education of tomorrow's workforce.

Vernon R. Loucks, Jr.

Chairman and Chief Executive Officer, Baxter International Inc.

FIRST instills the concept in our students that they can be winners and achieve excellence with their minds. They, in turn, provide us with a diverse resource of talented engineers and scientists.

Barbara A. Sanders

Director, Advanced Engineering, Delphi Interior and Lighting Systems

The most impressive take home message of all was that after it all was finished, rather than feeling relief, most of the team - if not all - felt a void. I believe this is the sign of a true team. If we can somehow capture that consistently in our project team settings, the possibilities could be endless.

Michael W. Rohovsky

Vice President, Research & Development
Johnson & Johnson Professional, Inc.

After 20 years in engineering, you can forget why you became involved originally. I was hoping that being around kids who were still excited and curious would remind me of my own initial excitement. It happened immediately. Their enthusiasm really boiled over. This really became a major life experience for all of us.

Grant McStay

Engineer, The Stanley Works, CT

From the teacher's point of view, it was gratifying to see 40 motivated students sacrifice countless hours after school on weekdays and weekends to pursue their interest in math, science, and related technology.

Rodwell Campbell

Science Teacher, Cass Technical High School, MI

The preparation and rewards of seeing my students get so excited about a curriculum project made participating in FIRST the most valuable experience of my 10 year career as a teacher.

Terisa O'Dowd

Teacher, Gunter High School, TX

One of the great things about working with the Delphi team was that we got to meet women engineers. The Pontiac Central/Delphi collaboration made an effort to make sure that female engineers participated in this male dominated field of work. I believe this diversity has added to the success of the team.

Betty Kelly

Student, Pontiac Central High School, MI

I have learned there is so much more to science than just a textbook!

Laura Schuttle

Student, Grandview Heights High School, OH

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FIRST is a 501(c)3 non-profit organization.