

# FIRST® LEGO® LEAGUE

## ROBOTS SOLVING REAL WORLD PROBLEMS

The FIRST LEGO League (FLL) just keeps on growing! In 2006 there were more than 80,000 team members in 40 countries around the world as well as thousands of volunteer adults from schools, universities and companies, many of whom were team mentors.

In the UK alone there were 400 teams attending 25 Regional Tournaments, the winners of which went through to the biggest UK Final yet, at the University of Birmingham. Six UK finalists then went onto international competitions in Atlanta USA and Bodø Norway.

The FLL is now in its 10<sup>th</sup> year. Previous Challenges have been into Space, under the Oceans, on the Arctic ice and within the Nanotechnology world. This year FLL teams will once again be investigating a very topical technology – Alternative Energies and the choices we must all make when using energy-consuming devices – be they planes & cars, heating & lighting or DVD's & iPods. See page 4 for more details.

Participating teams in the UK will have from September to the end of November to prepare for one of the Regional Tournaments taking place around the UK. Teams will:

- Programme a robot to fulfil tasks relating to the Challenge using LEGO MINDSTORMS technology.
- Research and prepare a Presentation on this year's theme.

Teams of up to 10 children from 9–16 years will work in out-of-school clubs and within the curriculum on all aspects of the Challenge.

They will have to take a cross-curricular approach using Programming and Control, Design and Technology, Maths, Web Research, Powerpoint, Strategic Thinking and Teamwork to achieve their aims.

Winners of Regional Tournaments will go through to the UK National FLL Final in January 2008 and maybe even through to the World Festival in April 2008 or the Open European Championship later in May 2008.



## FLL – take part in the Global Challenge!

THE FLL CHALLENGE CAPTIVATES TEAMS' ENTHUSIASM AND IS A GREAT WAY TO DELIVER THE KS2/KS3 CONTROL CURRICULUM



KC-NANOBLASTERS IN ACTION!

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**REGISTER NOW!**  
SEE INSIDE FOR MORE INFORMATION

ENTRIES ARE NOW BEING ACCEPTED FOR THE 2007 FLL UK CHALLENGE

**SPONSORED BY**



# FIRST® LEGO® LEAGUE

## CALENDAR OF EVENTS

1 May '07

Registration opens on FLL website

Summer term

Training events for schools wanting to participate. *Contact your venue directly.*

5 Sept '07



Nov-Dec '07

Regional Finals take place

Jan '08

National Final takes place

17-19 April '08

World Festival takes place

## Who can register for FLL?

FLL teams may comprise up to 10 members aged between 9 and 16. Each team will need at least one adult coach, usually a teacher, who is the contact point for all FLL communications (via email). Team members may be from different year groups and/or different schools. Schools may enter more than one team (additional registration fee applies). Team registrations from clubs and activity groups are also welcome.



PAUL SLEEM, PRESENTER AT THE UK FINAL, ENTERTAINS THE TEAMS

## Our corporate partners

BP and Ford have developed a strong partnership to strengthen the development of both companies' products. This is about using total engineering knowledge to take designs to the next level.

Both companies plan to actively support the national curriculum with innovative support material and industry mentoring.

As part of the drive to ensure that young people move into and understand areas of engineering that are becoming ever more significant in our lives (for example, electronics and control), BP and Ford have committed to three years of ongoing support for the FIRST LEGO League. During this time both companies work closely with First Hand Technology to further enhance the support they provide to schools in this critical area. The overall aim of the partnership is to inspire youngsters with the technology of the future.

For more information on the BP Educational Service, visit [www.bp.com/bpes](http://www.bp.com/bpes) or call 0870 333 0428.

For further information on Education and Outreach Activities in Ford please contact David Cayton on +44 (0) 1268 406362 or email: [dcayton@ford.com](mailto:dcayton@ford.com)



## Costs of participation

The FIRST LEGO League team registration fee is £95.00. This includes the Power Puzzle Challenge kit (issued at the beginning of September), team entry for up to 10 students, access to the FLL on-line forum and the FLL team Coaches' Handbook (PDF).

The Power Puzzle Challenge kit comprises the 2007 printed playing mat (measuring 114x236 cm) and the 2007 set of LEGO mission models (but not the LEGO MINDSTORMS robot set). You can either lay the mat on a flat surface or build your own table to work on (preferred). Instructions on building a table can be found on the FLL website: [www.firstlegoleague.org](http://www.firstlegoleague.org)

The Challenge itself is issued on the FLL website on 5th September, although your venue might be running a special launch event, so contact them directly to make sure.

**ONLY £95 per team**

**INCLUDES** team membership for up to 10 people, access to the FLL on-line Forum, Coaches' Handbook (PDF) and the Challenge Kit for 2007

You will also need one of the LEGO sets shown on the next page.

## Curriculum Links

The FLL can be embedded in the KS2 and KS3 curriculum in the following areas: ICT (web research and communication, graphs, programming, multimedia presentation, web site design, digital photography etc.), D&T, Literacy, Citizenship and Use of Language across the curriculum.

**See the Curriculum Links at [www.firsthandtechnology.org.uk](http://www.firsthandtechnology.org.uk)**

## Who runs FLL in the UK and how do I register a Team?

**First Hand Technology organises the UK FLL - your contact there is Chris Proctor.**

Full details about participating in the Challenge and registering your team can be obtained from the UK FLL website [www.firsthandtechnology.org.uk](http://www.firsthandtechnology.org.uk).



## LEGO MINDSTORMS robot sets required to enter

To participate in the FLL Challenge, you'll need one of the following LEGO MINDSTORMS sets:



### NXT

**NXT Education Base Set**  
(item 9797 / Rapid 70-1260)

£159.99  
EX VAT

Plus

**NXT Education Software**  
(item 2000077 / Rapid 70-1264)

£26.99  
EX VAT

This combination is recommended for school use. It is ideal for teaching KS2/KS3 Control curriculum

Teams may also use the NXT Retail Set 8527 (including the NXT Retail software).

### RCX

**Team Challenge Set**  
(item 9794 / Rapid 70-0522)

£149.99  
EX VAT

Plus

**Robolab 2.5 Software**  
(item 2000076 / Rapid 70-0696)

£48.00  
EX VAT

This combination is recommended for school use. It is ideal for teaching KS2/KS3 Control curriculum.

Teams may also use the Robotics Invention Set 3804 (including the RIS software). This item is no longer available for purchase.



LEGO NXT and RCX MINDSTORMS sets are available from Rapid Electronics. Contact Marion Wilson on [marion.wilson@rapidelec.co.uk](mailto:marion.wilson@rapidelec.co.uk)

## What happens on the day?

Teams will usually arrive at 8.30 – 9.00 am. During the course of the day you will take part in the **Robot Performance Challenge**, present your **Research Project** and be judged on the **Robot Design/Technical** Aspects of your robot, as well as your **Teamwork**.

The **Director's Award** is given to the team with the highest overall score from the four sections, each of which has an individual award winner:

**Robot Performance** – awarded to the winner of the robot challenge (the robot competition).

For the **Robot Performance** itself there are usually three opportunities to have a go on the Robot Challenge Table, each lasting 2½ minutes. The best scoring round is used to determine who goes through to the quarter finals and/or semi finals. Only two team members can work on the Robot Challenge Table at any one time.

There are a number of different challenges on the table, ranging from low scoring easier ones to high scoring but more difficult ones.

**Research Project** – awarded to the team whose Research Presentation demonstrates an in-depth understanding of the issues involved.

**Research presentations** take about 5 minutes followed by a 5 minute question and answer session with the judges.

Teams can use various and creative styles of presentation, examples include PowerPoint, theatre style, video – whichever is best suited to getting the message across.

**Robot Design** – awarded to the team that demonstrates innovative robot design and programming.

This **Technical judging** usually takes place through a 10 minute question and answer session on your robot, how it was put together and how the programme works.

**Teamwork** – awarded to the team that demonstrates partnership with team members and respect for fellow teams.

**Teamwork judging** may be by a specific question and answer session or Teamwork Judges may observe teams throughout the day as they perform their other tasks. Sometimes, teams may even be required to undertake a specific teamwork task.



**FLL 2007 CHALLENGE  
LAUNCHED 5<sup>TH</sup> SEPTEMBER**



## Alternative Energy Resources – Meeting the Global Demand

How do our personal energy choices to heat our homes, fuel our cars, charge our cell phones, power our computers, or even download music to our iPods impact the environment, economy, and life around the globe? Which resources should we use and why?

Explore how energy production and consumption choices affect the planet and our quality of life today, tomorrow, and for future generations.

Can FIRST LEGO League teams find the ultimate solution to this global Power Puzzle?



TEAMS BATTLE IT OUT ON THE ROBOT PERFORMANCE CHALLENGE TABLES



### When you've finished the FIRST LEGO League, why not have a go at RoboCupJunior?

This is a project-orientated educational initiative that sponsors local, regional and international robotics events for young students.

It offers several challenges including dance, rescue and soccer. Each challenge emphasises both cooperative and task achievement aspects. For more information visit <http://rcj.open.ac.uk>

Alternatively to find out about other events visit [www.robofesta-uk.org](http://www.robofesta-uk.org)

### FLL Contact Details

FLL website at: [www.firsthandtechnology.org.uk](http://www.firsthandtechnology.org.uk)

Chris Proctor at First Hand Technology: [cp@firsthandtechnology.org.uk](mailto:cp@firsthandtechnology.org.uk)

## 2006 Champions: The C.R.A.C.K. Team



UK FLL CHAMPIONS – THE C.R.A.C.K. TEAM

Congratulations to The C.R.A.C.K. Team from King Edwards School Birmingham who, as the UK National Champions, received the Directors Award. They will be going to Atlanta USA in April to represent the UK at the FLL World Festival.



Also joining them at the World Festival to represent the UK will be the Technobotts team from the east of England.

< THE TECHNOBOTTS TEAM

This year's FLL Open European Championship will be in Bodø, Norway in May. Four of the UK Final Award winners now progress to battle with the best FLL teams from around the world. They are:



< WIDCOMBE WROBOTIERS  
FROM WIDCOMBE JUNIOR  
SCHOOL IN BATH

THE NEXT GENERATION >  
FROM NORTHUMBERLAND



< UP 'N' ATOM  
FROM NEW LODGE SCHOOL  
IN SURREY

FENIBOT >  
FROM FENISCOWLES PRIMARY  
SCHOOL IN BLACKBURN

