

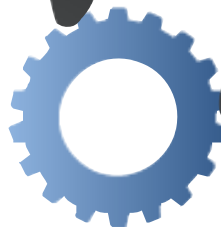


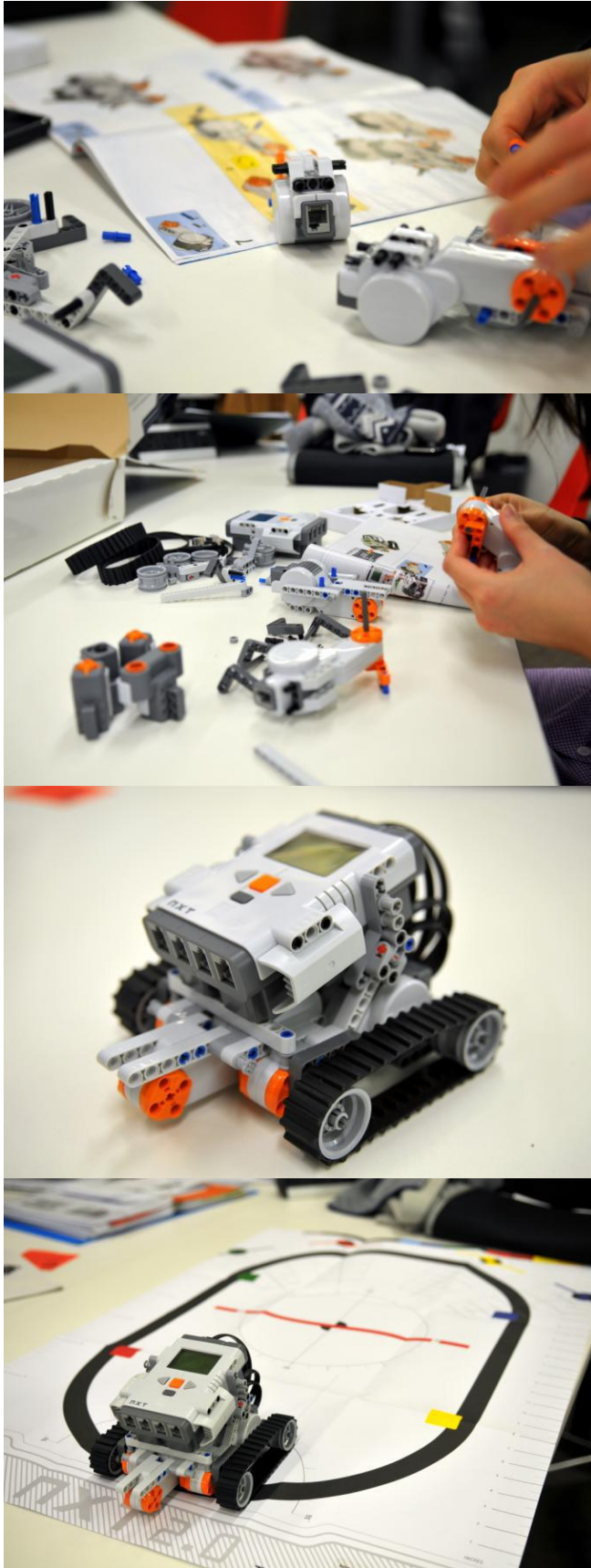
Robogals Lessons

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Robogals London is a student-run organisation in Imperial College London that aims to increase female participation in engineering, science and technology through fun and education initiatives targeting girls in primary and secondary school. It holds lessons for secondary school girls and is now adding advice and help to those running robotics clubs in schools.

WHY do we do it?

Even in modern times, female enrolment in science, engineering and technology courses remains startlingly low. We want to show girls that such courses can be fun, interesting and very fulfilling; and that all they have to do is try.

HOW do we do it?

Using Lego Mindstorm NXT 2.0 robots, Robogals carries out fun and enriching lessons for the young girls to try out simple robotics. Lessons are general held over two sessions over two weeks:

1. First session: Girls are allowed time to familiarise themselves with building the robot and doing simple programming tasks, such as getting the robots to move in a straight line for X seconds, or to turn right/left.

2. Second session: Girls are given more difficult tasks, such as manoeuvring around a track or to set up a relay-race with the robots. These tasks will build on the information/training they received in the first session, and are open to their interpretation of the idea and concepts they have been taught.

Imperial College volunteers are assigned to a team, and are on standby should the girls have any questions. They are not meant to provide the answers, but instead provide guidance and support to the girls should they need them.

HOW MUCH pre-session knowledge of robotics do the girls need?

NONE.

The girls will be guided in using the robots, given simple tasks and then progressing on to more challenging ones.

Our theory is that when the girls are given the opportunity to learn on their own, they solve their own problems and will grow more interested in the subject naturally.

isn't robotics DIFFICULT?

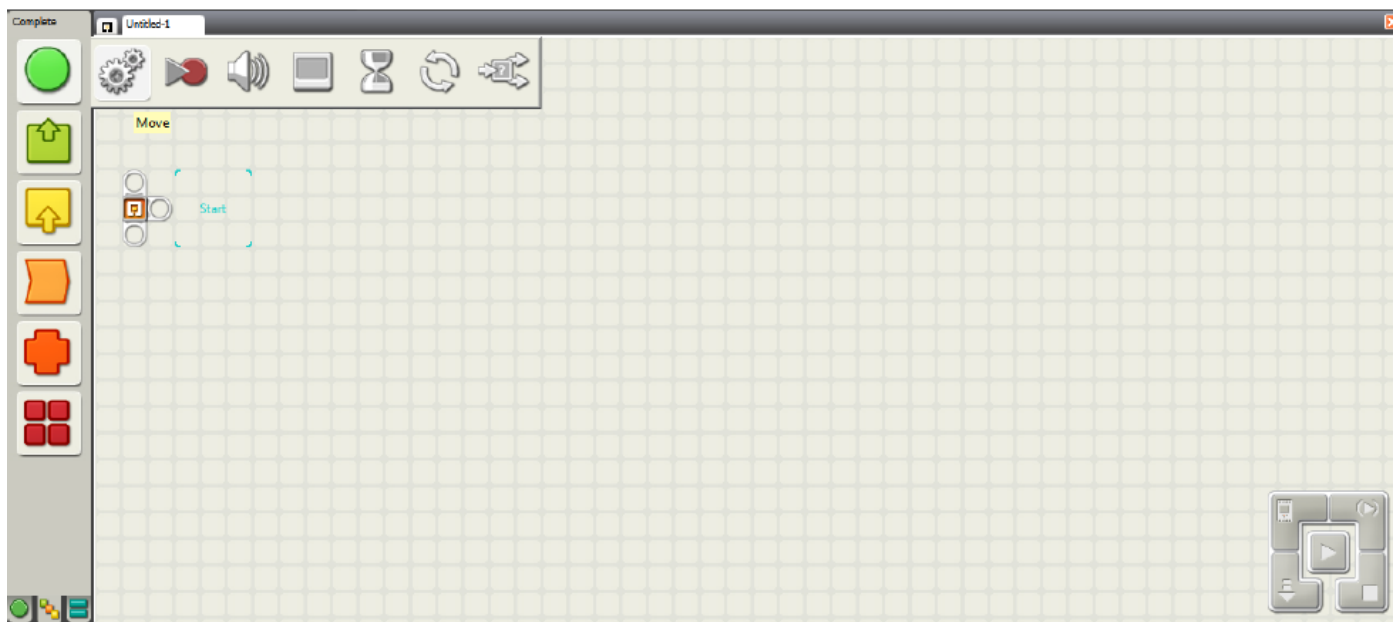
Only if you choose to make it difficult!

We have chosen to use Lego Mindstorm NXT 2.0 robots because of their incredible simplicity and modularity.

Programming is in the style of a flow-chart of actions, and the students choose blocks in that flowchart, such as movement or sound, and then specify the parameters of that block.

For example, to make the robot move forward for 5 seconds,

1. Select the Move block.



2. Place it as indicated on Start, then choose the parameters of the block.

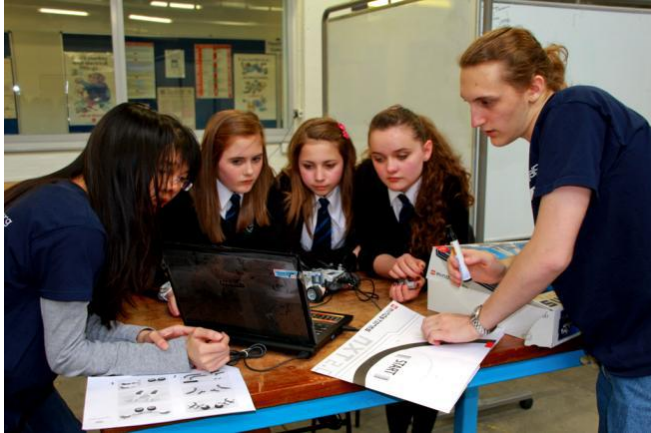


As you can see, we have selected the direction to be *forward*, steering to be *right in the middle* so the robot drives straight, and the selected duration as *5 seconds* to fulfil task requirements.

We'll explain the other controls in class!



3. And you're done! Just repeat this step with the other actions and you'll get the robot to move the way you want it too. Easy-peasy!



HOW MUCH do we charge for the lessons?

NOTHING at all. We get to share how incredibly awesome science, engineering and technology is, and the girls get to learn about robotics and have hands-on experience with it.

what AGE GROUP are we looking at, and HOW MANY students?

We are able to cater lessons for both primary and secondary school students. We take 20-25 students per session to ensure the students have sufficient interaction with the robots.

Just let us know your requirements and we'll set up a lesson for you.

HOW MANY classes per school?

We do not have a quota on the number of classes we take on per school, and we can hold different workshops for the same group of girls, with different levels of complexity. However, please note that we are only able to teach 20-25 girls at a time.

ONLY girls?

Robogals aims to encourage more girls to take up subjects in science, engineering and technology, so we prefer to take on girls-only classes, but contact us and we might be able to set up a class for your needs!

WHERE and WHEN?

Classes are held at Imperial College, South Kensington campus. They are usually on Wednesday afternoons, from 1pm to 3pm. We will try to accommodate your schedule within 12pm-4pm on Wednesday afternoons, so contact us if you have a problem with this time slot.

is LUNCH provided?

We encourage students to take their lunch before coming for the lessons as we do not provide lunch, although there are cafes around the campus to buy food/drink.

HOW do I get in touch?

Please email yuen@robogals.org.uk, or have a look at our website london.robogals.org.uk to find out more about our programs.