



## ROBOTICS AT DESTINATUS PRIVATE SCHOOL — 2018

### Junior Class (Grades 1 - 3)

#### **Background**

We offer an extra-mural activity in the form of a robotics, science and technology club. The vision of the club is to mentor learners in developing the mental and hands-on skills typical of the scientific-technical world. Such skills include abstract problem solving ability, spatial (three-dimensional) reasoning and planning, algorithm design, computer programming, and building technical artefacts such as electronic circuits, robots and various gadgets. We would like to introduce learners to the world of scientific discovery and technical innovation by discovery-based learning, where they tackle both concrete and abstract problems and solve them in team activities.

#### **What we offer**

We run the science club as an extra-mural activity at a frequency of one afternoon per week, on average eight weeks per term. Sessions would be about 60 minutes long for the Junior (Grade 1-3) class. The plan is to cover introductory robotics, and to help learners complete projects that match their skills and competencies. As such, the scope of what we do is open-ended, and each learner would be able to proceed at his or her own pace.

A typical (**Junior** level) project (Pull Robot) is shown on the next page. In order to build a Cart and trailer, we will take the learners through a number of steps, which they will follow on the program we provide, as well as program the Pull Robot to move around. The steps that we will guide the learners through are as follows:

- Understand and conceptualise the basic functions and objectives of the artefact (Pull Robot in this case).
- Define its design requirements - this is where the learner adds weight to the trailer until the cart cannot pull it - for example the initial program might require a greater power level to pull the cart.
- The learner will come to understand how the design requirements of the Pull Robot ties in with the physics and hence how to solve the design problem.
- Finally, the learner will learn to program the device to overcome the weight constraint.

The science club will not be a place where the learners merely build models from a plan without any understanding of what they are doing. Our goal is to stimulate critical thinking and a love for learning by allowing the learner to try and fail, and then to improve based on what was learned. We will have small groups with two to three children per robotics set. In this way we can give individual attention at your child's level.



**Junior class:**

**Day and time:** The **Grade 1 - 2** class will run on Monday afternoons from 14:00 - 15:00. The **Grade 3** class will run on Tuesdays from 14:15 - 15:15.

**Venue:** **Campus 1** for Grade 1 - 2 Class, and **Campus 2** for Grade 3 Class

We will accept children on a first come, first serve basis. If your child is interested, but the time does not suit you, please contact us. We will attempt to accommodate you if possible, but perhaps only later in the year.

**Cost**

The cost would be R800 per term (8 sessions)

A registration fee of R70 is also payable.

**Contact information:**

Tyron Nel / 071 674 4486 / [futurelab@figratia.co.za](mailto:futurelab@figratia.co.za)



<https://www.facebook.com/FutureLabScience/>

**ENTRY FORM—ROBOTICS AND SCIENCE CLUB  
(DESTINATUS PRIVATE SCHOOL)**

Please use this form and return by email or use our online registration at <https://goo.gl/forms/goMwjalf8yLGZXFT2>

- I want to enter my child for the first term of 2018
  
- I want to enter my child at a later stage, but please put me on the mailing list.

**CHILD'S DETAILS:**

SURNAME:..... NAME:.....

GRADE:..... DATE OF BIRTH:...../...../ 20.....

- BOY                       GIRL

**Choose one session:**

- Junior class (Grades 1-2). Times 14:00—15:00 (Mondays at Campus 1)
  
- Junior class (Grade 3). Times 14:15—15:15 (Tuesdays at Campus 2)

**PARENT/GUARDIAN'S DETAILS:**

SURNAME:..... NAME:.....

CELL NUMBER..... LAND LINE (OFFICE HOURS):.....

EMAIL ADDRESS.....

**PLEASE RETURN THIS TO US AS SOON AS POSSIBLE AT [FUTURELAB@FIGRATIA.CO.ZA](mailto:FUTURELAB@FIGRATIA.CO.ZA). OR MAKE USE OF THE ELECTRONIC REGISTRATION PROCESS.**

**WE WILL CONTACT YOU WITH PAYMENT DETAILS.**