

## The LearningWorks

Thank you for your interest in **ThinkHigher 2016-2017!** We hope you'll find answers to many of your questions in this guide. Once you've read it and have further questions please feel free to be in touch.

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## WHEN

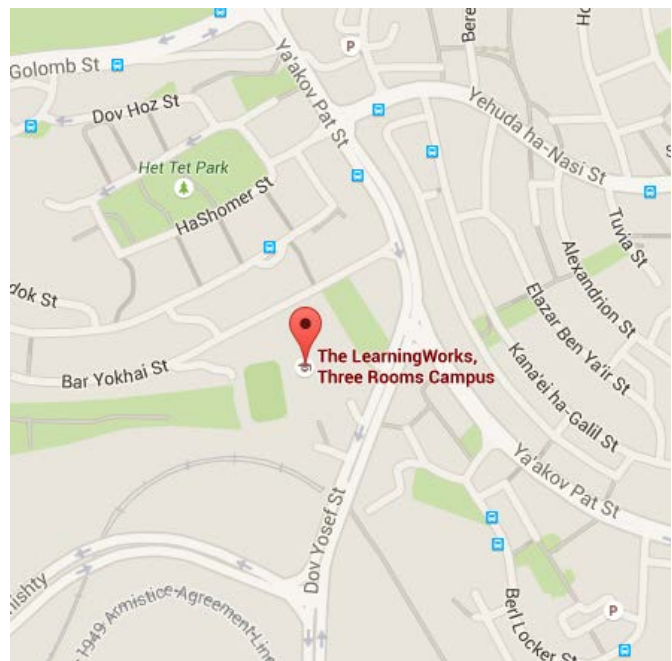
- September 12<sup>th</sup> – June 16<sup>th</sup>. We follow the Jewish calendar and [the vacation schedule of the Ministry of Education](#) for 2016-2017.
- About 2 hours weekly of class time – Monday, Tuesday, Wednesday or Thursday afternoons, depending on student availability. (Indicate preference in application.)
- Occasional daytime labs and/or field trips related to subjects we study
- For FLL teams, considerably more time will be required for tournament preparation. (This is included in tuition.)
- Evening activities about every 3-5 weeks

## WHERE

ThinkHigher is held at The Three Rooms Campus, near Teddy Stadium, in Jerusalem. ([map](#))

The campus is served by Egged Lines 5, 10, 12, 14, 15, 22, 32, and is a short walk from the 77.

The campus is close to Park HaMesilot, for walkers and cyclists.



## WHO ARE OUR TEACHERS?

Our Head Teacher and Founder is **Shaiel Yitzchak**. He has degrees in Engineering, CS, Education and the Humanities. He teaches Robotics at The Hebrew University and has teaching certification in the State of Israel.

Shaiel has 24 years of experience in formal and informal education, and 14 years in high-tech, in Israel and in the US.

Shaiel is fascinated by group dynamics, teamwork and motivation. His specialties are:

- Motivating students to break through their own barriers
- Encouraging students to raise their level of inquiry

And kids seem to have a bit of fun around him, despite his sense of humor. . .



**Ariel Hershler** joined The LearningWorks in 2014. He holds an engineering degree and is a certified teacher. He has 29 years of experience in formal and informal education as well as 29 years of experience in the high-tech industry, including 3 successful "exits".



Ariel is deeply moved by the child's ability to cross barriers, to adapt and to do the impossible.

But more important than all this is that students truly enjoy being in his company no matter what they're doing.

## WHO ARE OUR STUDENTS?

We primarily work with ages 6-16.

We select the makeup of each learning group very carefully. Applicants are interviewed. The fact that you're reading this suggests your child and ThinkHigher are well-matched, but it's important to us (and to you) to be sure. The interview is also an important opportunity for children to ask us questions that are on their mind about ThinkHigher and TLW in general.

We look for students who wish to be engaged in their own learning process. Age and background matter but they are less important than a student's drive, their fascinations and what they enjoy about learning. Scientific inclination, technological prowess, these things are nice. But whether (and why) a student wants to be there is more important.

## **WHAT DO WE DO**

Our mission is to remake our student's roles in their own education. We teach whole-brain thinking and facilitate the active engagement of our students in their own education. There are enough passengers in the world. We make our students into proficient navigators and expert pilots.

### **Groups/Community**

Students work in groups of up to 12, which have been selected based on interest and ability. Students should expect to have different types of people in their group, and learning to accomplish things together, despite (or is it, thanks to?) these differences, is very important. This includes working with people of different ages.

That said, while age is relatively low-priority, the closer a child is to either 6 or 16, age figures in more importantly what they do at The LearningWorks, and with whom they do it.

Lots of what we do is community-related. Your child's presence will quickly become vital to the community they are part of. As such, they are required to attend as regularly as possible, and we request that you avoid, as much as possible, your child missing class, and notify us in advance if you know it's going to happen.

It's also worth mentioning that, while there is no obligation they participate in even one extra activity beyond the ~2 hours/week of ThinkHigher, there is a direct relationship between their total investment of time and effort, and the return you'll see on that investment.

### **Curriculum**

The LearningWorks is an educational partner of Google Maker programs. We sometimes make recycled junk into science projects and make old technology into new computers. We also do some woodworking, CAD modeling, and 3-D printing.

Every student has his/her own focus. Our goal is to make our students better thinkers – not necessarily to make them Python Gurus, or master carpenters (though both of these are possibilities). This is a list of some of the subjects your child may encounter:

#### **Making Skills:**

- Structural Engineering and Construction
- Mechanical Engineering – simple machines, wheeled/treaded/tracked vehicles
- Use of the LEGO CADs LDD, LeJos, L-draw
- Use of SolidWorks, a general engineering CAD for 3D Printing and Engineering
- Electronics and electric engineering

## Curriculum (cont.)

### Computer skills:

- Programming, multi-operating-system environments, development process
- System architecture, network infrastructure, information security
- Multi operating system environments and behavior; use of, and communication between Microsoft, Apple, Linux, rPi, Arduino and other OSes

### General science skills:

- Research, analysis, collaborative projects and presentations
- Use of telescopes, and Astronomy
- Use of microscopes, Microbiology Lab, Biology and Microbiology
- Safe use of basic Chemistry lab and equipment

### Robotics skills:

- Sound engineering and design principles
- Efficient use of sensors, XOR, XANDOR functions
- Collaborative relationship between engineer/designer and programmer

### LEGO Robotics

We have one of the best educational robotics labs in Israel, making use of 1,180,000 LEGO elements. We are able to have 56 robots operate 16 trains and 12 motorized vehicles simultaneously in a city of roads and train tracks (510m of track!) created by our students. The LearningWorks uses Lego's NXT and EV3 platforms. (Other platforms below.)

ThinkHigher will participate in the FIRST Lego League (FLL) tournament. It will involve robotics, research, innovation, collaborative projects, presentation skills and more. The tournaments will be in late January/early February and will require missing a few days of school. (Permission is required from parents and teachers. FIRST programs are permitted absences from school. Students must make up missed work, and schools look more favorably on students who are already performing strongly.)

### Other Platforms

ThinkHigher also uses Arduino, Raspberry Pi, Einstein, RoboFLAT and Edison. A Raspberry Pi system (rPi) is included in ThinkHigher tuition for students who have not previously received one from us. These cutting-edge technologies excite students, but they're vehicles for our real educational goals.

## Educational Values

Robotics and STEM subjects are ideal playgrounds for the development of personal creativity and problem-solving skills, communication and especially effective teamwork.

The LearningWorks is not the only place a student can learn robotics or engineering (though we really are very good!) But few programs are better than we are at pinpointing a students' motivation, at making them excited to learn, or at raising their expectation level of themselves.

As mentioned, age is not the highest priority to how students are grouped. Interest and ability are generally considered more important.

## Competitions

Creativity is the start, not the end of innovation. One of our goals is to prepare our students to creatively solve real-world problems, and this requires a deep understanding of things. As such, teaching effective research is one of our primary goals.

Our First Lego League (FLL) teams sometimes win prizes of which we're very proud – These links are to score sheets for [Project Research and Innovation](#), and for [Innovation and Strategy in Robot Design and Programming](#).

In fact these teams won trophies at these tournaments, but we're more proud of them winning in these categories than we are of their trophies. The recognition is nice, but more than that, we're proud of the quality of their work – proud *they earned* the recognition more than we're proud of the recognition itself.

This is not a promise that we'll win anything; it's never been, and will not be a goal.

But we do promise to give our students the opportunity and encouragement to do really great work. If judges in tournaments, and the gods of timing and luck should smile on us, then so be it - but we will teach your child to earn the feeling of accomplishment one way or another.

## Student-made documents

We are always in the process of better documenting our core educational values. This document itself is largely written by our students. You can also follow [this link](#) for a student project on core values from a few years ago; and you can look over our [TLW Media Policy](#) (also a student project). We are a learning community and always benefit from parental input.

## REGISTRATION

To apply for ThinkHigher season 2016/2017, download and fill out the [application form](#).

## TUITION

Course	Tuition	Supply and Activities
ThinkHigher 2016-2017	NIS 5,500*	NIS 600
Chanukkah Camp (guests)	NIS 1,400	TBA, but ~NIS 200
Chanukkah Camp (ThinkHigher students)	Included	TBA, but ~NIS 200
Pesach Camp (guests)	TBA, ~NIS 1,500	TBA, but ~NIS 250
Pesach Camp (ThinkHigher students)	TBA, but ~½ tuition	TBA, but ~NIS 250

\*NIS 300 discount for registration and full payment by bank transfer before September 12<sup>th</sup>. The LearningWorks can accept payment by credit card. You can make one payment for full tuition, or three monthly payments of NIS 1,833 without interest.

Supply and activities fees are paid in cash. They are separate from tuition.

There will be options to cycle to some field trips. And the Three Rooms Campus is close to Park HaMesilot, granting cyclists ease of access. If these interest you, consider the maintenance of your child's bicycle, the cost of a certified helmet and spare inner tube (requirements for cycling with TLW) when making your calculations.

## EPILOGUE

**We hope this has answered some of your questions. For photos, please visit our Facebook page [facebook.com/TheLearningWorksJerusalem](https://www.facebook.com/TheLearningWorksJerusalem).**

**These documents will give you more of a sense who we are:**

- [01 Welcome and Hogsmeade Contract](#) (Sample activity 1)
- [02 Logic Train](#) (Sample activity 2)
- [03 The LearningWorks' Educational Values 2014](#)
- [04 Our website.](#)

A graphic artist could design our website to look more professional. But it is an end-to-end TLW student project. We are more proud of this than we would be if it looked more stylish.

We can be reached at 03-7639688 for further questions – or we can call you if you email us your phone number. [info@thelearningworks.org](mailto:info@thelearningworks.org).

We look forward to discussing ThinkHigher with you in further detail!