The LearningWorks

Thank you for your interest in **ThinkHigher 2019-2020!** 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 15th – June 18th. Within these dates, we follow the Jewish calendar and the vacation schedule of the Ministry of Education for 2019-2020.
- About 2 hours weekly of class time – Monday, Tuesday, or Wednesday 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's old home was The LearningWorks Three Rooms Campus. But we hope to have a different, similar and close-by location this year.

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 29 years of experience in formal and informal education, and 19 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 30 years of experience in formal and informal education as well as 30 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-mind thinking and we facilitate our students' active engagement in their own education. There are plenty of passengers in this 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 different ages. They will accomplish things together which are too big for any of them to accomplish on their own. And they will do this despite (or is it, thanks to?) these differences.

That said, while age is a relatively low-priority, the closer a child is to either 6 or 16, the higher age figures into 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 their micro-community. As such, they are required to attend as regularly as possible. We will request that you avoid, as much as possible, your child missing class, and that you 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 we can expect on said investment.

Curriculum

The LearningWorks is an educational partner of Google Maker programs, Make, Inc., SpaceIL, and Facebook. We sometimes make recycled junk into science projects and we make old technology into new computers. We also make our own Minecraft mods and hacks, and we do CAD modeling, 3-D printing, and make use of our extensive industrial-design lab. (And to preempt questions we've already received many times by phone, yes, we did make a working arcade cabinet this past summer, with licensed versions of everything from Pac Man to Space Invaders. Yes, we turned two old microwaves into a welder, and yes we made an augmented-reality topographical map out of a sandbox, a projector, and an old Microsoft Kinnect camera.)

But every student has his or her own focus. Our goal is to make our students better thinkers – not necessarily to make them Python gurus, master carpenters, or security experts (though all of these are possibilities). So here is a list of some of the subjects your child may encounter:

Making and Design 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 and SketchUp, general engineering CADs also used for 3D Printing
- Electronics and electric engineering

Software 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
- Interdependence between engineer/designer and programmer

Creativity and presentation skills:

- Photography and videography
- Use of Photoshop, Premiere, and similar tools for photo and video editing
- Public speaking, presentation skills

LEGO Robotics

We have one of the best educational robotics labs in Israel, making use of 1,865,000 LEGO elements. We are able to have 68 robots operate 24 trains and 30 motorized vehicles simultaneously in a city of roads and train tracks (930m of track!) created by our students. The LearningWorks uses Lego's NXT and EV3 platforms. (Other platforms below.)

ThinkHigher usually participates in the FIRST Lego League (FLL) tournament. This involves 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 Robotic Platforms

ThinkHigher also uses Arduino, Raspberry Pi, Einstein, RoboFLAT and Edison.
If a Raspberry Pi (rPi) is needed for a project, we can give them to students who have not previously received one from us.

These cutting-edge technologies excite students a lot. (They probably excite *you* as a parent!) But it is important to remember that these are *vehicles* for our educational goals; *these cool things are not the goals themselves.*

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. We consider interest and potential 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.

Teams we take to tournaments sometimes win prizes of which we are 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, and sometimes advance to national championships. But we are more proud of their achievements than we are of their trophies. Recognition is nice, but more than that, we're proud of the quality of their work – we are proud *they earned* the recognition more than we're proud of the recognition itself. When you talk with our students about this, you can see their experience has really taught them this set of priorities.

This is not a promise that we'll win anything; it has never been, and will never 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). The films and TV shows are a few years outdated now, but you can read their values clearly all the same. We are a learning community and always benefit from parental input.

REGISTRATION

To apply for ThinkHigher season 2019-2020, download and fill out the application form.

TUITION

Course	Tuition	Supply and Activities
ThinkHigher 2019-2020	NIS 5,800	Included
Chanukkah Camp (guests)	NIS 1,600	Included
Chanukkah Camp (ThinkHigher students)	Included	Included
Pesach Camp (guests)	TBA, ~NIS 1,600	Included
Pesach Camp (ThinkHigher students)	TBA, but ~½ tuition	Included

Refund Policy

Please pay attention to our Refund Policy.

The LearningWorks accepts Israeli-issued Visa and Mastercard credit cards. You will receive a link to a payment page with your acceptance letter (which is after your child submits their application and after their interview (for new LearningWorks students).

In the past there have been options to cycle to some field trips and activities. Recent changes to cycling laws have made this difficult, but we will put this back on the table if we are able to do so. If this interests you and your child, then please consider the costs associated with safe cycling when making your calculations.

We hope this has answered some of your questions. For photos (of both ThinkHigher, and The Jerusalem HackerCamp, our summer camp), please visit our Facebook page which can be found at 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 would probably design our website more professionally. But it is an end-to-end student project and 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. We look forward to discussing ThinkHigher with you in further detail!