

High Five: Programs to Provide Essential Pedagogical Support to Schools in Israel

A report to ORT Netherlands

November 2015

World ORT would like to thank ORT Netherlands for its support of the World ORT-Kadima Mada High Five Program in Israel. Your continued support for this important project at four schools in Israel has enabled World ORT-Kadima Mada to help students at these schools gain specialist knowledge in pertinent subjects and to develop skills which can be used productively in the future to the benefit of the students themselves, their communities and the entire country.

1. An Educational Greenhouse and Laboratory for the Einot Yarden Comprehensive High School, Upper Galilee

Almost all of the students in the school benefit from use of the laboratory that your funding has helped to establish.

The laboratory is used by students in preparation for the unit 5 matriculation exam and the main subjects studied in the lab are:

- Chemistry;
- Physics;
- Biology; and
- Nutrition.

Last summer the biology students used the lab to research air cleansing methods and processes, using house plants, as part of their final work for the 5 unit matriculation in biology.

The ecological complex, which includes vegetable garden beds, a seedbed area and an experiments section, is used for entire classes as well as for individual work with students.

One of the school's teachers reports:

"The lab enabled students to be at the spearhead of innovative education at school, using advanced technologies and project-oriented teaching methods".

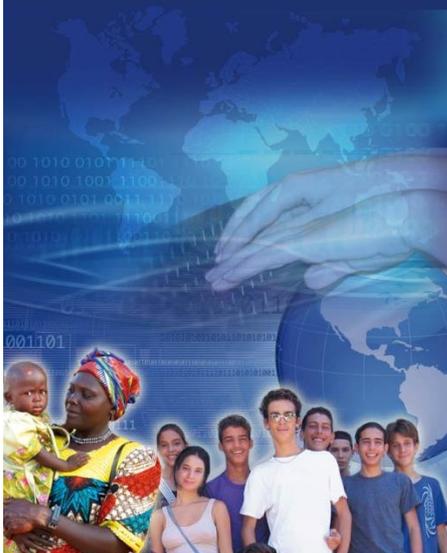
"ORT Netherland's generous donation helped us advance the ecological complex in such a significant way that is apparent to this day. We see the greenhouse as a crucial educational means that gives students priceless tools for life, and as such we make sure to cultivate it and gain more knowledge and experience in growing super-foods and systems that integrate fish farming with plants, algae and more".



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2. An upgraded Science Laboratory and Educational Greenhouse for the Branko Weiss Anna Frank School, Upper Galilee

The teachers at the Branko Weiss Anna Frank School are best placed to talk about the changes that your donation has enabled in the school:

"The equipment purchased with the assistance of the generous donation raised the level of our laboratory several ranks upward. We are finally able to conduct high-level experiments and extensive exploration activity, both in the junior and high school classes. The equipment allows us to fulfil our dreams with the students and teach science at the highest level".

"The advanced laboratory enables us to use demonstrations which help the students internalize abstract concepts such as electricity and develop a better understanding of the subject matter".

"The junior high years are an excellent opportunity to instil the love of the science professions in the hearts of the students. In our opinion the way to accomplish this is by experimenting and exploring. The computerized laboratory with the advanced equipment exposes the students in an exciting way to the various scientific subjects. An example of the use of equipment: during a research project on catapults, we had to calculate the release speed of the ball. We used the computerized lab and the light gate to calculate the speed. The use of advanced equipment contributed greatly to the students' motivation and to the image of physics as a profession".

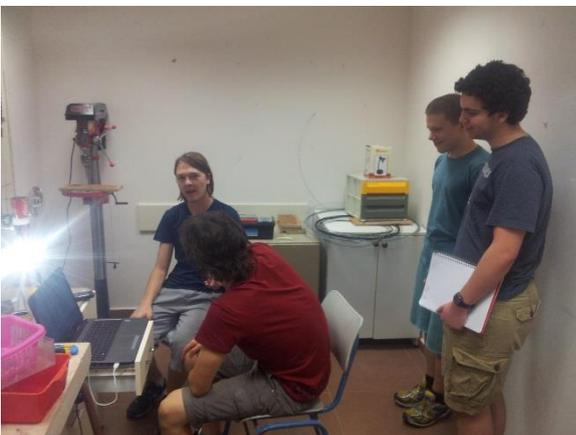
"This year new research projects are planned which will include intensive use of the computer lab".

"The science tracks at the school try to promote learning by inquiry, and thus research projects are integrated into the unit 5 matriculation exams. Such projects demand planning and an array of research, which can only be done in a state of the art science lab".

"In our school the equipment makes science come alive and become relevant for the students".

One of the students benefitting from the cutting edge equipment also expressed his thanks:

"The laboratory and experiments enabled me to bring the subject matter to real life."



Three students performing an experiment on a heat engine they built themselves. As part of the research to improve the engine, the students hooked pressure and temperature sensors in the computerized lab.

3. A New Science and Technology Laboratory for the Horfeish Comprehensive High School, Horfeish

The following is a representative selection of some of the projects that are taking place at the Horfeish Comprehensive High School, which have been made possible thanks to your donation:

1. Advanced chemistry research: 12th grade students research chemistry-based topics that are related to everyday life, such as: browning of fruits and vegetables, the effect of acid on the bones in the body, and ions in drinking water and their effect on its quality. The students' final work will be demonstrated in the "We Have Chemistry" competition, to be held at the Weizmann Institute of Science.

2. Creating multimedia products (videos/articles/posters): on issues intertwining chemistry and the chemical industry. 10th and 11th grade students participating in this project will also show their works in the "We Have Chemistry" competition.
3. Physics research: students working in groups research a chosen physics-related topic (this year the physical phenomena of the Doppler Effect was chosen) and, at the end of the process, submit a final research paper which includes a summary of relevant inventions and new theories, while emphasizing physical innovation. This research project equates to 30% of the unit 5 matriculation in physics, and the final paper is presented by the students to the national committee of the Ministry of Education.

Feedback from the science staff at the school has been very positive:

"The renovation of the lab and equipment made our job as science teachers a lot more enjoyable and efficient. Even teachers from other fields at the school, such as English, Math and Hebrew, find the lab to be a cozy classroom that is fun to teach in, and use it on a daily basis whenever it is free."

"For us science teachers, the lab has opened a new world of possibilities – it allows us to demonstrate and integrate hands-on experiments during the lesson, as well as to combine modules which illustrate scientific matters in a much more effective way, that encourages the students to become independent learners and participate more proactively in class."

"We wish to thank you from the bottom of our hearts for your kind generosity, which has significantly improved the learning atmosphere in our school".

4. An Educational Greenhouse for the Emek HaMaaravi School, Kibbutz Ifat

This year the greenhouse is serving some 180 junior and high school science students in their research project, which includes variable control of long-term experiments.

One student reported as follows:

"I am extremely pleased to research the effect of parsley sowing density on crop growth. This was made possible thanks to the vast facilities that the greenhouse has to offer. This research will enable me to have a true experience of the real world of farming. So far it has made me see all of the considerations and criteria that farmers must take into account in order to ensure that the growth of the fruit and vegetable will be economically successful."



World ORT thanks ORT Netherlands and its contributors for their continued support for the World ORT-Kadima Mada High Five programme, which is doing so much to help schools in deprived areas on Israel's geographic and socio-economic peripheries.