



# HEMDA

THE CENTER FOR SCIENCE EDUCATION  
TEL AVIV – YAFO



**“COMPUTATIONAL SCIENCE ADOPT-A-CLASS”  
PROPOSAL FOR THE TEL AVIV CENTENNIAL DINNER  
IN NEW YORK – NOVEMBER 16, 2009**

*"The future lies in education" – Albert Einstein  
(1951 – in a letter to David Ben Gurion)*



## **BACKGROUND:**

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Hemda is the extraordinary learning center in Tel Aviv for science education, led by an elite team of educators, most of whom hold doctoral degrees and represent Israel's top research institutions such as the Weizmann Institute, Tel Aviv University and the Technion Institute of Science.

Established in 1991 by the Rothschild Foundation in cooperation with the Municipality of Tel Aviv and the Weizmann Institute, Hemda is an acronym for science education and literally translates to "desire" in Hebrew.

## **MISSION:**

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The goal of Hemda is to give every gifted secondary school science student in Tel Aviv-Jaffa, regardless of background, the opportunity to study physics and chemistry at an advanced level. In fact, the student population at Hemda includes secular and orthodox Jews, Christian and Muslim Arabs which reflects the diverse demographics of the city. Hemda strives to build the new cadre of scientists for Research & Development in the Israel Defense Forces (IDF) and/or academic institutions, who will lead the State of Israel and the world into the future.

## **ORIGIN:**

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Hemda, the only school of its kind in the world, was created by the former President of the Weizmann Institute, Professor Hayim Harari, in partnership with the Municipality of Tel Aviv-Jaffa. The Center was founded based on survey results conducted by Israel's Ministry of Education which revealed a steady decline of young Israelis studying science at a college/university level. The Tel Aviv-Jaffa Municipality also recognized that high schools could not afford to maintain high quality facilities and teachers at each school and therefore created a "center" to provide state-of-the-art laboratories and top educators. Seventeen high schools in the city "outsource" their science education for gifted students to Hemda.

Initially Hemda was supported by well-established families in Tel Aviv (through tuition fees) and the 250-300 original students were from that demographic. In 2001, Mayor Ron Huldai made Hemda one of his top priorities in order to provide this unique education to every gifted high school science student regardless of whether or not the family had the financial means to pay tuition.

With financial support private donors through the Tel Aviv Foundation, the City marketed the program to all high schools in the Municipality.

### **CURRENT STUDENT BODY AND METHODOLOGY:**

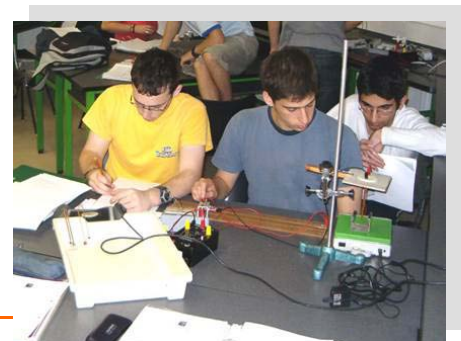
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For the 2008-09 school year, there are 1,250 talented teens attending Hemda. The increase in students is based on Mayor Huldai's plan which makes a Hemda education more accessible. Though Hemda provides the highest standard of advanced science courses, it sets itself apart by enriching its students with numerous extra curricular science workshops and personalized tutoring. Hemda's extra added value is

expressed in making the science curriculum deeper and broader: theories are accompanied by student experiments, computerized audio-visual presentations, references from our library and the internet. Hemda emphasize scientific tools and ways of thinking like a scientist. Hemda offers elective courses, special workshops, and study trips. Hemda boasts the most sophisticated laboratories equipped with state-of-the-art equipment. The teaching methodology in Hemda is unique in its approach: hands-on team work settings are provided where educators not only explore scientific theories but also demonstrate practical matters using the fully equipped and modern laboratories. Hemda also has a strong online component for its students.

Students selected for Hemda are the most gifted in the city, and are recommended by their teachers from all the high-schools in the Tel Aviv-Jaffa Municipality. Only the best in math and science are selected to attend Hemda (based on grade point averages). There are other students who are recognized as "having potential" and are given the opportunity to work with Hemda's teachers to try to meet its exceptionally challenging requirements. The students selected need to be motivated and at the top in their classes since Hemda's curriculum lasts eleven months a year. To promote optimal learning, the student to teacher ratio is typically set at 20:1, and in certain classes at 12:1.



### **HEMDA GRADUATES:**

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Hemda students have been tracked and surveyed to assess the effectiveness of the Center in the past three years:

**70%** of the surveyed students were recruited to the most elite intelligence units of the

IDF that specialize in R&D

**18%** of the surveyed students were recruited to other choice IDF units such as the air force and paratroopers

**12%** of Hemda graduates were recruited directly to the ATUDAH program where students are able to defer their army service to be able to attend medical and engineering schools at top Israeli institutions. The graduates are then placed in IDF units that specialize in their field for an extended military service. This program is reserved for the most gifted Israeli cadets.

#### **FOUNDERS AND STEERING COMMITTEE:**

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**Professor Daniel Zajfman** (President of the Weizmann Institute and Chairman of Hemda)

**Professor Hayim Harari** (former President of the Weizmann Institute and Hemda Director)

**Professor Eshel Ben Ya'akov** (Tel-Aviv University)

**Professor Bat-Sheva Eilon** (Weizmann Institute)

**Dr. Gabi Sarussi** (Chief Scientist of El Op)

**Eli Raz, Ph.D.** (Technion Institute)

**Tehila Ben-Gai, Ph.D.** (Hemda Director)



#### **ADOPT A CLASS PROJECT:**

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The success of Hemda has also created a major challenge: the demand has vaulted past the supply. In 2001, there were 320 students attending Hemda. In 2004, there were 998 students enrolled, an increase of 200%. Today, there are 1,250 students enrolled in Hemda. More than 500 gifted students remain on the waiting list and are being deferred due to the lack of operational resources. The increase of students is attributed to the promotion of the program to the disadvantaged neighborhoods of Tel Aviv who have many capable young minds but not the financial means for these advanced studies. Through the efforts of donors around the world along with the partnership of the Tel Aviv Municipality, these young minds now have the opportunity to be part of this important educational initiative and shape the future of Israel.

A class may be funded on an annual basis or as three year commitment. The three year commitment ensures funding from the beginning of the program (10th grade) through graduation (12th grade). These funds will support two classes of 20 children from the

disadvantaged neighborhoods in the Southern and Eastern parts of Tel Aviv.

The operational cost, per **Computational Science** class, per year is \$74,000. This proposal is for two **Computational Science** classes for the entire program.

**COST:**

The Tel Aviv – Jaffa Municipality is **committed to match every dollar** which will be donated towards support for Hemda classes.

Commitment for 10 <sup>th</sup> grade in 2009 (\$74,000 x2):	\$148,000
Commitment for 11 <sup>th</sup> grade in 2010 (\$74,000 x2):	\$148,000
Commitment for 12 <sup>th</sup> grade in 2011 (\$74,000 x2):	\$148,000
<b>TOTAL COST OF PROGRAM:</b>	<b>\$444,000</b>

**Tel Aviv – Jaffa Municipality matching funds:** **\$222,000**

**TOTAL DONATION REQUESTED** **\$222,000**

To learn more about Hemda, visit  
**[www.hemda.org.il/English](http://www.hemda.org.il/English)**

To view the Hemda educational video, visit  
**[www.telavivfoundation.org/Videoshemda2007.htm](http://www.telavivfoundation.org/Videoshemda2007.htm)**

To learn more about the Tel Aviv Foundation, visit  
**[www.telavivfoundation.org](http://www.telavivfoundation.org)**

