Overseas Department Education Division KKL-JNF

חינוך ונוער Youth & Education

קק"ל קרן קימת לישראל K K L - J N F

המצאות ישראליות
Israeli Inventions

Information Booklet

ISRAEL - THE START UP NATION

DiskOnKey

This is a small data storage device. The name 'DiskOnKey' signifies its tiny size, and its portability. Throughout the years, it has become less expensive, and the storage capacity has increased. Its primary advantages are how easy it is to use, and its movability. Today, you can find DiskOnKeys that have been integrated into small electronic devices, such as music players, cell-phones, and more. The DiskOnKey was first developed by Israeli company M-systems, headed by Dov Moran, in 1999.

ICQ

The ICQ program allows people, who are geographically far away from each other, to communicate via computer in real time. The ICQ revolution made possible the creation of a private, online community of friends.

The initials of the name 'ICQ' sound like the sentence 'I seek you'. The ICQ program includes instant messaging, chatting simultaneously with multiple users, free text messaging to cell-phones, transferring files between people, sending e-card greetings, multiple player games, and a searchable directory.

ICQ was developed by the Israeli company Mirabilis in 1996.

WIX

This is a platform for building websites. The platform enables the user to build a website for free without needing any prior knowledge.

WIX is an Israeli company that was founded in 2006 by Avishai Abrahami, Nadav Abrahami, and Giora Kaplan. The three were working on another start-up, and during their work they wanted to open a website. It was a difficult process, and they realized that building a website is a complicated and expensive business. Following this, they came up with the idea of creating a platform for building websites where the user does not need any prior knowledge. This platform would be free of charge, and available to everybody. WIX currently has more than 110 million users in over 190 countries.

Indigo Digital Press

The big innovation here is printing directly from the computer, allowing a different printing definition for each page. This had not yet existed in commercially sold printing machines.

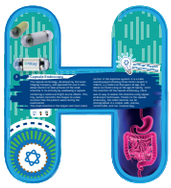
The Indigo Company was founded by Benny Landa in 1977. They developed a liquid ink that could replace the powder in copying machines and printers. In 1993, they started marketing the digital printer, marking a turning point in the printing market. This invention is considered one of the most significant technological achievements in this field since the invention of offset printing over a hundred years ago.

Waze

Waze is the world's largest community based traffic and navigation app. This app is free of charge.

The Waze app works on cell-phones and updates the driver and passengers with the route details and traffic situation during the drive. Users can submit their own reports to provide real time traffic updates. The service includes constantly revised maps, traffic jam and accident alerts, information on where police cars are located, advice on the fastest route to reach your destination, and more.

Waze started as a community initiative called 'FreeMap Israel' which sought to create a free digital database of the map of Israel. 'FreeMap Israel' was founded by Ehud Shabtai in 2006, and two years later it transformed to Waze. The company was sold to Google in June, 2013.



Capsule Endoscopy

The capsule technology, developed by the Given Imaging Company, and approved for use in 2001, allows doctors to take pictures of the small intestine in its entirety by swallowing a capsule containing a camera and light source (flash). This tiny camera transmits the images to a data recorder that the patient wears during the examination.

The small intestine is the longest and most coiled section in the digestive system. It is a tube reaching approximately three meters length in infants, 4.5 meters at five years of age, and about six meters long at the age of twenty. Until the invention of the capsule endoscopy, there was no way to assess the intestine using regular endoscopic techniques. Thanks to the capsule endoscopy, the small intestine can be photographed in a simple, safe, precise, comfortable, and non-invasive way.

ReWalk

The Israeli Argo Company developed ReWalk, an exoskeleton that straps onto the legs, allowing individuals with spinal cord injuries to walk, climb stairs, sit down - and even to get rid of their wheel chair altogether. This innovation is the brainchild of engineer Dr. Amit Goffer. Goffer started developing ReWalk's wearable exoskeleton in 2001, after he was injured in an all-terrain vehicle accident, and the doctors told him he wouldn't be able to walk again. The robotic exoskeleton is strapped to the disabled person's legs, and on his back he carries a small command unit. When the order is given, the exoskeleton rises, and lifts the disabled person from his seat. Another press of the button initiates the walking mode.

Inflatable Sterile Tent

This operating room is compact and portable; it is easily built and provides a sterile environment in a disaster area or a battlefield. The kit is portable, weighing less than 100 kilograms. It folds into three carrying bags, and within a minute and a half inflates into a modern operating room which enables complex and life-saving medical treatment.

It was invented by the Israeli company SYS Technologies in 2012.

Producing Drinking Water from the Air and from Contaminated Water

This system enables the production of clear drinking water from the air, an unlimited global natural resource, while using energy in the cheapest and most efficient way. One machine can produce enough drinking water for a school, a hospital, or a large community center.

Water Gen supplied thousands of people with drinking water in Houston and Miami, following the hurricanes in those United States cities in 2017.

Arye Kohavi, the company's founder, was chosen as one of the 100 Leading Global Thinkers and one of the world's top innovators.

In April 2018, as part of the celebrations marking seventy years of Israeli independence, this technology was chosen as one of the nine most significant inventions and technologies produced in Israel since the establishment of the state.

Drip Irrigation

Drip irrigation is a watering system developed in Israel that is considered one of the most important inventions in global agriculture. Drip irrigation allows you to slowly water the plants with a controlled blend of fertilizer, assured that the water reaches the plants' roots and is not wasted.

This invention significantly changed global agriculture practices, by helping increase and improve the crops' quality while using less water.

Drip irrigation was invented and developed by Israeli water engineer Simcha Blass and his son Yeshayahu during the 1950s and 1960s.

On Israel's fiftieth Independence Day, the Netafim drip irrigation system was named 'the invention of half a century.'

Cherry Tomatoes

Israeli scientists developed this small tomato which is more suitable for the Israeli climate and ripens at a slower pace. Its name derives from its shape which resembles a cherry.

Cherry tomatoes are sold all over the world and are also grown abroad. The most popular strain of cherry tomatoes was developed by Prof. Nahum Kedar and Prof. Haim Rabinowitz from the faculty of agriculture at Hebrew University, Jerusalem.

Biological Pest Control

Biological pest control means pest management in agricultural fields. This is done by 'good' animals and insects that take care of the 'bad' insects. This cutting edge pest control helps modern agriculture find an efficient solution for the problematic nature of chemical-based pest control. Chemical pest control not only leaves behind a residue in the produce, but the insects eventually build up a resistance to it.

This biological pest control was invented by the BioBee Biological Systems Company located in Kibbutz Sde Eliyahu.

Ecological Fish Ponds

Ecological ponds are closed systems for farming fish in fresh water and in the sea. This prevents environmental pollution, such as fish discharges, caused by farming the fish in pools and cages in the open sea.

Farming the fish in ecological ponds is a process that includes saving water, dissolving oxygen, and an automatic sorting system that passes the fish from pool to pool according to their size. This produces fish that at the end of the process are nearly identical in size, according to the customer's needs. These systems were invented by the AquaMaof Aquaculture Technologies, Ltd Company which was founded in 2010.

Mobileye

The Mobileye system, which has a single-lens camera, alerts in real time about a variety of dangers such as collusion, and deviation from the lane. The system even identifies pedestrians and bikers near the car, as well as speed signs. In fact, the camera serves as a 'third eye' for the driver, and the system's functions help

prevent traffic accidents, as well as provide a foundation for the autonomous car. Mobileye was established in Israel in 1999, by Prof. Amnon Shashua and Ziv Aviram. This company is cutting edge and pioneering in its field.

In March 2017, Mobileye was sold to Intel for 15.3 billion dollars, in the largest business transaction in Israel's history.

The Kinect Camera Technology

This technology is able to decipher specific body movements, allowing one to control electrical devices without touching them. This is accomplished via infra red light, a camera, and a special electronic chip that enables one to follow the movements of objects and people in three dimensions. Microsoft purchased the rights to this technology, and used it to develop a gaming controller for video game consoles Xbox One and Xbox 360, and for computers that have Windows installed in them.

This technology was developed by the Israeli startup company PrimeSense, which was founded in 2005. It was purchased by Apple in 2013.

Israeli games: Rummikub

Rumikub is a tile-based tactical thinking game for up to four players. The game is distributed in 25 different languages around the world, and is the most popular game made in Israel. Rummikub was invented and developed in the 1940s by Israeli game developer Ephraim Hertzano. He decided to replace the traditional deck of cards with colorful tiles after card playing was banned.

The game was awarded Game of the Year in Germany in 1980, and won this award in Holland as well in 1983. Its sales were estimated at over thirty million games.

Israeli games: Taki

Taki is a card game that was a big success as soon it hit the market. It is very popular in Israel and around the world. The name 'Taki' means waterfall in Japanese, and the card bearing this name in the game allows the player to put down all his cards of the same color as the Taki card. This card game was invented by Haim Shafir in 1983.

Citrus Juicer

This juicer was invented in 1928, and is built differently from the regular hand juicer. In a hand juicer, you press on the fruit in circular motions in order to squeeze the juice from it. However, in this juicer, invented by Itzhak Zaksenberg, you pull the lever down. This creates strong pressure on the fruit, easily smashes it, and the juice quickly flows into a cup.

Solar Water Heater

This heater utilizes solar energy for heating water. The two main parts in this system are a water tank and solar receptors whose job is to transform the solar energy to heat. The solar water heater is meant for home use, industrial use, and additional uses. This heating system was developed by Dr. Zvi Tabor, and it is very wide-spread in Israeli households. Solar water heaters made in Israel are sold all over the world.

Source [Shoresh] Sandals

These sandals became known due to their non-slip rubber soles. Additionally, each model has its own characteristics, such as different degrees of shock absorbers, sweat evaporation abilities, anti-bacterial cushioning, and more.

The Source Company was founded in 1989, and its hiking and trekking products are sold in Israel and around the world. The company operates outside of Israel under the brand name Source.

Israeli armi: The Unmanned Aerial Vehicle (UAV)

The unmanned aerial vehicle (UAV) does not have people in it and is not flown by pilots. Its major advantage is its tiny size which allows it to carry out missions without being detected. Such aircraft are usually activated from a distance, though today there are also UAVs with built in systems that control all actions until it returns to the base, after completing its mission.

Most of these aircraft are used by the military intelligence in spying operations to get information from enemy territory, since they can carry out dangerous missions without risking human lives. The police forces also use UAVs in traffic control, and in other research. Since the 1970s, Israel is considered a world leader in this technology.

Israeli armi: The Merkava Tank

The Merkava is a series of Israeli battle tanks that constitute the backbone of the IDF Armored Corps. The Merkava Mark IV model is considered one of the best tanks in the world.

The Merkava tank was designed to give the crew ultimate protection. Therefore, the armor in front was strengthened and the engine was placed in the front, unlike in other tanks in the world. With more space in the tank's rear, a rear entrance was put in, enabling the tank to carry an infantry fighting vehicle, and even to off-load crew.

The initiator of the Merkava tank project was Major General Israel Tal (reserves), and it was designed by engineer Israel Tilan. Production of the Merkava tank started in 1979, and throughout the years more advanced and sophisticated models have been developed.

Israeli armi: The Iron Dome

This is an aerial defense system for shooting down short range rockets, which has achieved great operational success. Later on, the system also included the ability to shoot down mortars, and unmanned aerial vehicles. This system was developed by Rafael – Advanced Defense Systems Ltd. and Elta, the daughter company of the Israel Air Industry, with US monetary aid.

Marking seventy years of Israeli Independence, the Ministry of Economy and Industry presented to the public vote all the products and cutting edge technologies that were invented and developed in Israel since its establishment. The public chose the iron dome system as the top invention.

The Blue Box

The Blue Box was the modern form of the traditional charity box and was used to raise funds from Jews for purchasing lands in Israel. These lands were bought by the Keren Kayemeth LeIsrael (KKL), the Jewish national fund for redeeming land in Israel, which was established in the fifth World Zionist Congress in 1901.The Blue Box was the brainchild of Professor Rabbi Zvi Hermann Shapira, the initiator of the concept of the Jewish National Fund (JNF), as early as 1884. However, the person who first turned the idea into a reality was a bank clerk named Haim Kleinman in a town in Poland. He placed a 'Land of Israel Box' in the bank where he worked, to collect donations for KKL-JNF. The idea caught on after Kleinman wrote a letter to the paper, in which he suggested putting such boxes in additional places. By the time WWII broke out, there were approximately one million such boxes distributed throughout Europe.

These boxes had many different designs and colors throughout the years, until it arrived at its familiar blue design in the 1930s. The tin can eventually

featured the Star of David on one side, and the map of Israel on the other, both superimposed in white on a blue background. Following the founding of the state, KKL-JNF, serving as the executive arm of the national Zionist institutions, used the donations to develop the land. This task of developing the country continues till today, in the areas of forestry, education, water, protecting the environment, and sustainable development. The Blue Box became the symbol of KKL-JNF. It had an educational value and played an important part in spreading the Zionist idea and strengthening the ties between Jews in the Diaspora and Israel and its lands. The Blue Box was placed in Jewish communities in Israel and around the world, in various centers, and in school classrooms.

Biofilter

Biofilter technology is Green technology for purifying rainwater and channeling the treated water into the underground aquifer. This technology was developed in Australia by an Israeli researcher and his colleagues. It is already being successfully used by KKL-JNF in three cities in Israel. The technology is based on natural processes (biology and physics) which enable cleaning and purifying the city's runoff water. Runoff water is water that flows on the surface since the ground is too saturated to absorb any more water. This water originates from the rain, melting glaciers, or snow. The purification of this water allows it to be used for various needs and helps relieve Israel's water crisis. This unique system lets us utilize and save water that would otherwise go to waste. The Biofilter system purifies the surface runoff water by using a blend of special plants and microorganisms with an appetite for the pollutants that harm the water quality, until the water finally reaches the proper quality for drinking or irrigation purposes.

Israeli food: Ptitim

Ptitim are toasted pasta shaped like rice grains. This original dish is considered one of Israel's culinary contributions to the world. Ptitim are an important and integral part of the Israeli kitchen. They were invented during Israel's austerity period, when there was a paucity of rice. This was primarily to help the Jewish immigrants from the Middle Eastern countries whose diet consisted, to a large extent, of rice and couscous. Israel's first Prime Minister, David Ben-Gurion, asked Eugen Proper, one of the founders of the Osem food company, to create a wheat-based substitute for rice. Consequently, the product was nicknamed 'Ben-Gurion's rice'. Initially, the ptitim were shaped like rice, and later on they were made in additional shapes. In Israel, Ptitim are considered a popular and inexpensive food, primarily eaten by children. However, throughout the world Ptitim are often used in gourmet meals.

Israeli food: Bamba

Bamba is snack made from peanuts and corn, produced by the Osem food company since 1966. Israel manufactures approximately 450 bamba bags in one minute (27,000 bags in an hour).

Israeli food: Shkedei Marak (soup croutons)

'Shkedei Marak' is an Israeli food product that adds flavor and texture to soups, similar to croutons. Shkedei Marak has been commercially manufactured in Israel by the Osem food company since 1952.

Production: Amit Productions LTD